

WORK-RELATED STRESS AMONG CONSTRUCTION PROFESSIONALS IN
YEMEN

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DEDICATION

This project report is dedicated to my father, who taught me that the best kind of knowledge to have is that which is learned for its own sake. It is also dedicated to my mother, who taught me that even the largest task can be accomplished if it is done one step at a time.

ACKNOWLEDGEMENT

Alhamdulillah, at first all the thanks and praise to Allah who granted me success and good luck, then to my family who was all the time beside me and supporting me. I would also like to acknowledge the effort and assistance of my supervisor Mr. Abdul Rahim bin Abdul Hamid for the kindness, encouragement, advice, and guidance which helped me in preparing and completing this project report.

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ABSTRACT

As a result of this rapid development witnessed by the world and the technological revolution, construction professionals face many problems and risks that lead to harm to their health and affect the level of productivity and quality and also affect their daily lifestyle negatively. Stress is the emotional, physical, and mental response of a change to a situation that occurs in people's daily lives. Stress includes workload, demand, anxiety, fatigue, conflict, panic, depression and helplessness. Stress if left untreated can cause a variety of illness and adversely affect our body. This study investigates strategies that can be implemented in organizations and daily life in constructions projects in Aden city south of Yemen to minimize stressful conditions affecting construction professionals physically and mentally. The main objectives of this study are to identify the personality types of construction professionals, to explore the level and symptoms of stress within the construction professionals and to examine the construction professionals coping strategies to minimise the stress. The methodology of this study includes literature reviews, data collection, and data analysis. A questionnaire survey was performed electronically. The data was analyzed using the average index, frequency rate, reliability Index and scoring by SPSS and Excel software. The results of the study indicate that the respondents are with different types of personalities which confined between type A, AB and B personality characteristic. The level of stress of the respondents is recognized between moderate and low. As well as the symptoms of stress like physical, sleeping, behaviour, emotional and personal habits indicators are between dangerous, very high, high, medium and low. Construction professionals chose turning to pray to Allah, thinking in positive way, spending time with friends and family and sleeping adequately as common stress coping strategies. The identified key stressors could be used as a road map for stress elimination, and, hence, improve the performance of construction professionals. At the same time construction firms should improve the employees' working environment to reduce stress by providing training sessions on managing and coping with stress.

ABSTRAK

Hasil daripada perkembangan pesat yang disaksikan oleh dunia dan revolusi teknologi, para profesional pembinaan menghadapi banyak masalah dan risiko yang membawa kepada bahaya kesihatan dan mempengaruhi tahap produktiviti dan kualiti serta gaya hidup harian mereka secara negatif. Tekanan adalah tindak balas emosi, fizikal dan mental akibat perubahan dalam sesuatu keadaan yang berlaku dalam kehidupan harian manusia. Tekanan merangkumi beban, permintaan, kebimbangan, keletihan, konflik, panik, kemurungan dan tidak bermaya. Tekanan jika tidak ditangani dengan betul boleh menyebabkan pelbagai jenis penyakit dan memberi kesan buruk terhadap tubuh badan kita. Kajian ini menyelidiki strategi yang dapat dilaksanakan dalam organisasi dan kehidupan seharian dalam projek pembinaan di bandar Aden selatan Yaman untuk meminimumkan keadaan tekanan yang mempengaruhi fizikal dan mental profesional pembinaan. Objektif utama kajian ini adalah untuk mengenal pasti jenis keperibadian profesional pembinaan, untuk meneroka tahap dan gejala tekanan dalam profesional pembinaan dan mengkaji strategi menangani profesional pembinaan untuk mengurangkan tekanan. Metodologi kajian ini merangkumi tinjauan literatur, pengumpulan data, dan analisis data. Kajian soal selidik dilaksanakan secara elektronik. Data dianalisis menggunakan indeks purata, kadar frekuensi, Indeks kebolehpercayaan dan pemarkahan oleh perisian SPSS dan Excel. Hasil kajian menunjukkan responden mempunyai pelbagai jenis keperibadian yang berbeza dalam lingkungan jenis A, AB dan B. Tahap tekanan responden diakui antara sederhana dan rendah. Serta gejala tekanan seperti fizikal, tidur, tingkah laku, emosi dan penunjuk tabiat peribadi antara bahaya, sangat tinggi, tinggi, sederhana dan rendah. Golongan profesional pembinaan memilih strategi mengatasi tekanan untuk bersembahyang atau berdoa kepada Allah, berfikir secara positif, meluangkan masa dengan rakan dan keluarga dan tidur secukupnya. Tekanan utama yang dikenal pasti dapat digunakan sebagai peta jalan untuk menghilangkan tekanan, dan, dengan itu, meningkatkan prestasi profesional pembinaan. Pada masa yang sama syarikat pembinaan harus meningkatkan persekitaran kerja pekerja untuk mengurangkan tekanan dengan menyediakan sesi latihan mengurus dan mengatasi tekanan.

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LIST OF ABBREVIATIONS

CIOB	Chartered Institute of Building
CDM	Construction Design and Management
OSH	Occupational Safety and Health
DOSH	Department of safety and health
OSHA	Occupational safety and health act
GDP	Gross domestic product
H&S	Health and safety
HSE	Health and safety executives
HSW	Health, safety and welfare
EAPS	Employee Assistance Programs
HIV	The human immunodeficiency viruses

LIST OF SYMBOLS

Σ	-	Summation
$\times i$	-	Frequency of response
αi	-	Index of a class
i	-	1,2,3,4,5 and clarified
n	-	Response frequency
N	-	Total number of respondents
\bar{c}	-	average covariance between item-pairs.
\bar{v}	-	average variance.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The construction industry is one of the oldest, most developed and prosperous sectors in the world. Today, the construction strip is one of the most important sectors that affect the economy of the countries negatively or positively and is a measure of the progress and development of countries. It contributes to the creation of many jobs, accelerates economic growth and plays a pivotal role in finding solutions to the problems of pollution and energy shortage facing the world. As well the construction industry is unique and steady compared with other industries (Teo *et al.*, 2012). In New Zealand construction industry currently is experiencing a period of high demand which led to fast growth and development in the country's economy (Elms, 2017). In growing country as Ghana of population about 22 million (Anaman & Osei-Amponsah, 2007) noticed that construction industry is seen as a driver of economic growth, especially in developing countries. The construction industry is currently the third largest economic sector in Ghana based on value added to GDP where contributed by 8.8% to GDP in 2003 and 2004. At the same time (Enshassi & Al Swaity, 2015) noticed that a sector such as the construction strip has a significant impact on the economy of the Palestine state, especially Gaza City, where it books about 21% of the national GDP and involving 30% of workers in Gaza (Palestine).

The construction industry contributes significantly to the creation of a great number of job chances (Forbes *et al.*, 2012). Where the construction industry provides a variety of employment opportunities in various disciplines, which leads to the development and growth in the wheel of the economy and revive other sectors (Ofori, 2000). Also Forbes *et al.* (2012) identified that a sector as a construction strip hires about 3 million people every year, makes £100 billion worth of work per year and represents about 8% of the GDP of the UK.

Environmentally, the construction process is part of the system of creating and preserving the environment and contribute effectively to maintain the environment and achieving sustainability around the world by adopting sustainability in all sectors of life, especially in the construction sector, encouraging the adoption of environmentally friendly methods, materials and renewable energy methods that contribute to the reduction of environmental pollution. Sustainability has become the main goal of all developed countries (CIOB, 2017). Where more countries joining environmental pacts the construction industry is becoming more important in sustainable development (Haupt & Harinarain, 2016). As well renewable energy is energy that can be secured from natural resources which clearly have environmental advantages over conventional sources and constantly being replenished. In particular, the construction sector is responsible for using renewable energy to protect the environment from pollution and achieving sustainability (Shaaban, 2016).

In the Middle East countries the construction industry considered one of the most important and promising sectors due to combinations of some factors like (good and enough backing by the government, the continued boom in oil trade has led to a rise in the world oil price, security and economic stability and encourage investors to invest in infrastructure projects and facilitate all difficulties for them) all these factors contributed in high growing in this sector. It is expected that the governments of the Middle East, and specifically the governments of the Gulf countries such as Saudi Arabia and the United Arab Emirates to increase financial support to the construction sectors so as to implement many huge projects in various fields to achieve the vision 2030 of Saudi Arabia and the United Arab Emirates where they aspire to reach to the top positions among the developed countries. Where the renaissance in the construction strip will include important and vital projects in education, health, infrastructure, energy, industry and a number of other important sectors. At present, Saudi Arabia and the United Arab Emirates are at the forefront of the Middle East investment market. The value of investments in various sectors, especially the construction and infrastructure sector in the Middle East is estimated as follows Saudi Arabia is worth \$ 1.2 trillion, followed by the United Arab Emirates with investments of \$ 713 billion and Egypt and Kuwait with investments of \$ 578 billion and \$ 215 billion respectively (Economics, 2015).

As a result of the rapid and extensive development in the construction industry and sustainability especially in the infrastructure in the Middle East these days, Yemen situated along the south-eastern edge of the Arabian Peninsula has an area of 527,970 square kilometres (203,850 square miles). Yemen economic depend on moderate oil resources and low level of domestic industry and agriculture. The construction industry plays an important role in the economy of Yemen. Some statistics showed that the value-added in construction deteriorated from 8% in 1975 to 3.4 % in 2011 due to many factors but the most important one was the Gulf wars and the unification of North and South Yemen on 22 May 1991 which has led later to a lot of conflicts and chaos till today (Sultan, 2005). The World Bank statistics clarified the value-added in construction to the GDP of Yemen from 1975 to 2011 as shown in the table 1.1.

Table 1.1 Value-added in construction to the GDP of Yemen

Year	Gross construction % of GDP
1975	8
2000	4.2
2011	3.4

Sources: Wells 1986 [18], IMF 2001[19], World Bank 2002 [10] and Central Bank of Yemen 2011 [20]

Currently, Yemen shows small and poor growth in the construction sector due to the rapid increase in the population compared with the others in the same area. At the same time, it recognizes the importance of sustainability and seeks to achieve it in its projects especially in the infrastructure like hospitals, schools, universities and shopping malls but still facing some difficulties with the rapid modern growth. It is a country where the construction projects often surrounded by intense problems represented by (Financial and administrative corruption, Government neglect and mismanagement, lacking of experience and Non-compliance with safety, security and health standards and Some of the sectarian and political problems that contributed to the creation of internal wars) which lead to high costs, a lot of postponement and bad quality in most construction projects (Sultan, 2005). According to the National Accounts Main Aggregates Database statistics of the last ten years showed that the construction industry contribution to the GDP of Yemen from 2006 to 2017 by 4.15 % in 2017 as shown in the figure 1.1.

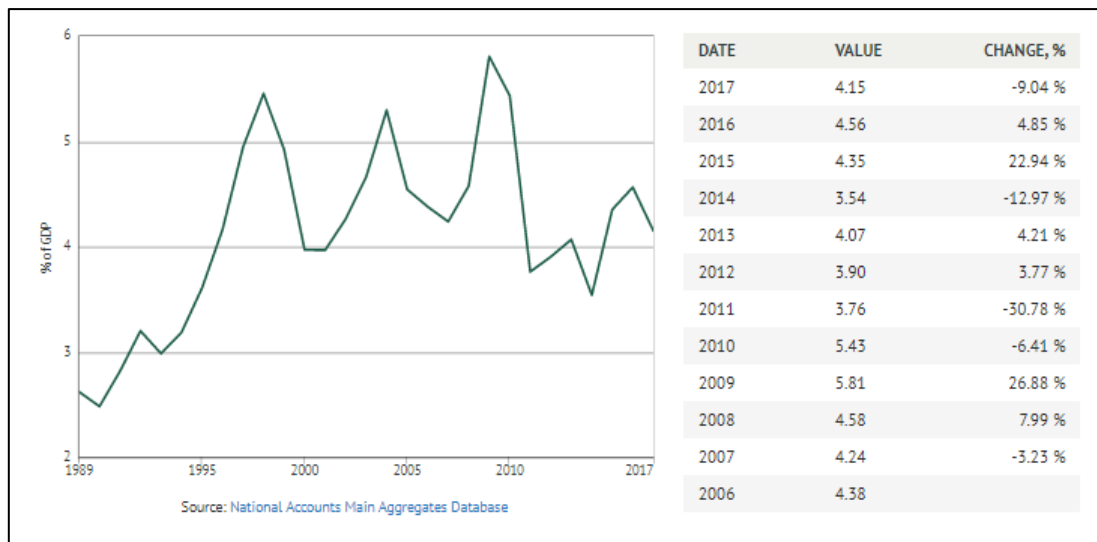


Figure 1.1 Value-added in construction to the GDP of Yemen in the last ten years

These days Yemen is witnessing a great development in the construction sector especially in styles and forms of buildings as a result of the return of many Yemeni businessmen from abroad, which contributed to pumping much of the cash flow of the country despite the difficult situation and conflicts in Yemen. Also the return of migrant Yemeni labour in the Gulf countries after gaining a lot of experience in the construction industry field after its affected by the great urban development witnessed by the Gulf countries especially Saudi Arabia (Sultan, 2005).

The construction industry is considered as any sector that has its advantages and disadvantages. One of the disadvantages that we will focus on it in our study is work-related pressure and stress between construction industry professionals in Yemen especially in southern Yemen in the city of Aden. Due to complexity of construction industry especially in country like Yemen that made people who are working in this filed facing many challenges. Today human life is full of stress and strain. All people have experienced it during their life. Stress is the way of responding to your body to any kind of demand, it is result represented in both positive or negative reaction. When people start to feel pressure and tension as a result of any event around them, in this case, their bodies start to respond to this stress and emission some chemicals inside the blood as a reaction to alert the body. The emission of these chemicals inside the blood stimulates the body and makes it ready to deal with the pressure and any kind of tension (Shahsavarani *et al.*, 2015).

Stress is not restricted to any particular profession, where identified that the construction industry is the third most stressful profession after mining and police work (Ng & Skitmore, 2005). The field of construction is one of the most areas that contain a lot of difficulties and problems such as intricate relations, harsh environment of working and complicated and difficult tasks all these makes the work environment difficult and cumbersome and requires a lot of effort. Each project has its own circumstances, advantages, and difficulties that can not be expected, which increases the pressure and stress on the engineers in this project (Enshassi & Al Swaity, 2015). We should do our best to understand its causes and effects on us and from here we can know how to control it and manage it until we release it (Shahsavarani *et al.*, 2015).

The Chartered Institute of Building (CIOB, 2017), stated that stress has turned into the main issue for the professional engineers in the construction field, in which 68% of the engineers who work in the construction faced the tension, stress, frustration related to their working environment in the construction field. In the United Kingdom, construction professionals were increasingly viewing their work as being stressful (Campbell, 2006). The construction operations need a lot of physical actions and efforts which is so exhausting and stressful. Tetrick & Quick (2003) clarified that the stress is a big and major issue that threatens the development and sustainability of the construction strip where it must be addressed carefully, not neglected and exceeded due to its disastrous and devastating effects on the people, country and the economy.

Nowadays, occupational stress is being a major problem and obstacle for the developed world, and it is one of the main causes of dangerous diseases. Work stress can be termed as the tension and stress on employees in the workplace due to harsh and difficult working conditions it has a negative impact on the output level and job satisfaction between employees. As well as, it considered one of the main contributors to low employee motivation, high rate of the incident, absenteeism and an increase in the level of turnover, which also has passive effects on the profitability and progress of the company. Health and Safety Executive (2017) identified that workplace stress is a direct result of a person`s job. For that reason, in the last recent

years the researches into work stress have been grown (Whetten *et al.*, 2000). Massive researches, studies, and conferences have shown that the stress resulting from the work environment has catastrophic effects on the health, psychological and physical condition of the person (Ng & Skitmore, 2005).

In the last few years, construction strip exhibited a massive conversion around the world. The complexities, constant changes and harsh and difficult work environments become an integral part of construction projects. The globalization of economy and markets, technological advancement and fickle of consumer preferences were the reason for that. The high-risk that create a high-stress working environment is one of the most popular characteristics of this industry. Professional engineers and the labours in this field of work perform their jobs and tasks in a hard and challenging environment where projects normally, has tight budgets and restricted time scope. All these factors contributed to making the construction projects and jobs required a lot of mentally and emotionally effort and all these at the end will convert into a lot of stress and pressure (Wahab, 2010).

The construction sector in a country like the Netherlands, more than half of the workers are suffering from work pressure and stress. Most of the times the work pressure is so high and that has been noticed by the workers. As well the construction strip has presented an increment of 5% in several aspects of the psychological mission. The master reasons for stress amongst professional engineers in construction are work overload and working for a long time without resting (Sutherland & Davidson, 1989).

On the other side stress is not permanently bad and unpleasant, it can help you to perform under pressure and motivate you to do your best. For that, the main idea of managing stress is to understand how to control it and prevent it from reaching to a harmful level. Humans and construction professionals should know the sources and causes of the stress to know how to manage and cope with the stress. Always you have to do some actions to make your nervous system in balance especially when your body feeling stressed and overwhelmed. There are actions that reduce stress. Such strategies might include time management or relaxation exercises

as well as Medications, Positive thinking and have enough sleeping (Enshassi & Al Swaity, 2015).

1.2 Problem Statement

Through recent decades, work-related stress worry has grown in many areas around the world. Workplace stress is being a big problem for organizations, which results represented in making the worker absent from his/her job, also increase illnesses. As well as, it has a serious impact on the economy of the organization and the country. Figure 1.2 exhibit some statistics about work stress in the UK costs the economics of the country between 0.5% and 1.2% of GDP. Which costing the UK industry about £9.7 bn per year (HSE, 2016/2017) as shown in the figure 1.2.

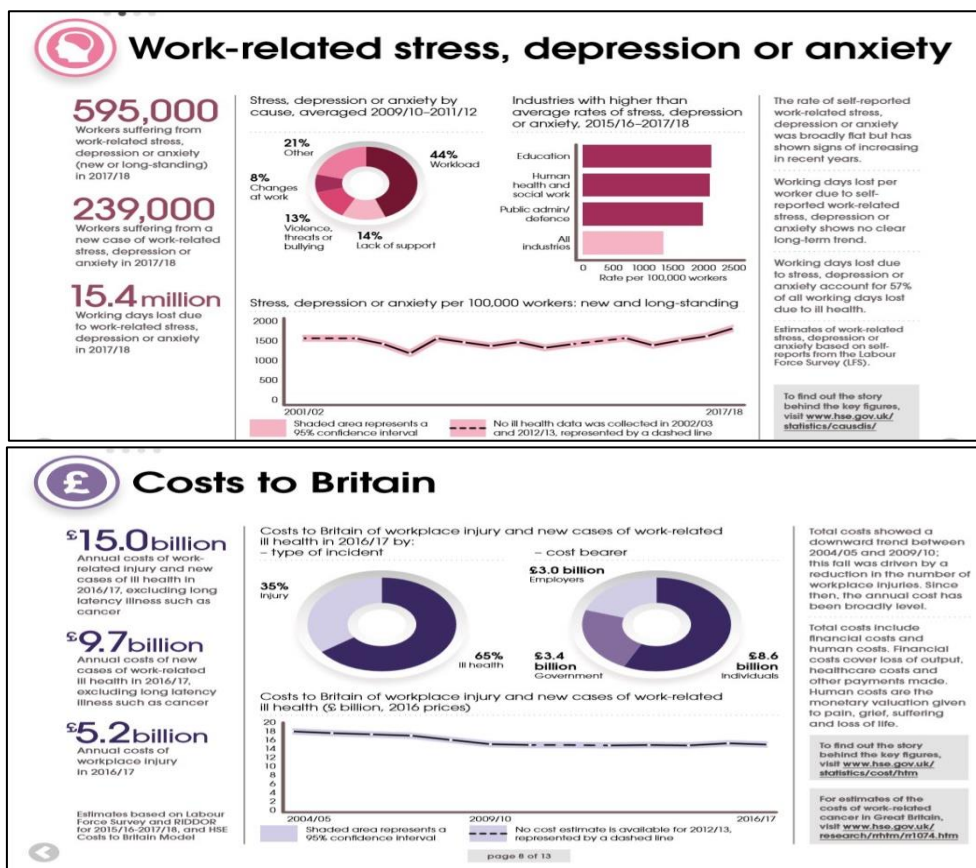


Figure 1.2 Work-related stress cost according to (HSE, 2016/2017)

Work-related stress occurs in a wide range when the demands at the workplace exceed above your capability to transact with. According to (CIOB, 2017) approximately 15 million days of working have been missing annually because of the impact work stress, and depression and anxiety are the outcomes of stress. In one of the most developed countries in Europe as the UK, almost about half a million people are suffering from the issue of work stress. The globalization and high level of competition have a potential influence on the quality of work and workforce structure which causes to raise in the level of stress in the work. This sort of impact could be represented in the unsettled market of labor, new rules in the job contract reflected in unsafe job and rowdyism in the place of work (CIOB, 2017).

Late in the 1990s, the issue of work-related stress became the most substantial issue in the European union. In 2004 the European made an agreement to monitor and control the level of stress inside the organization's work-place. Where in France, all companies and organizations with more than 1,000 workers have been responsible to reduce the level of stress at work (Chandola, 2010).

The Health and Safety Executive (HSE) in UK to face this escalating problem has created National Management Standards for work stress, the target from this was represented in directing and educate the engineers about the good practices in the workplace at the same time improving the management of stress through these instructions. That achievement its result will be in reducing work-related stress. The “Management Standards” designed to guide the employers of the companies and organizations how to deal and control the sources of work-related stress risk.

Based on the review, construction work is considered a risky job and more exposed to a stressful environment. For this lately, the researchers about job-related stress has increased. To ameliorate the job performance and construction sites administration some theoretical models on the stress of work are upgraded. Offia Ibem *et al.* (2011) found that the professional engineers in construction facing high pressure due to several factors such as lack of rest, no enough space of privacy, lack of adequate instructions. As well as a lack of health and safety conditions, and a lot of variations and changes in the project scope. In short definition, job stress is when

you do not give a good working environment which cannot control and monitor your job. Premkumar & Rajkumar (2015) clarified that working for long hours, lacking concentration due to tiredness and high workload. In addition to injuries/accidents, low wages and repetitive work are the most significant reasons for work stress. For that, uniform evaluation for the procedures of managing the stress and for the stress level should be conducted. Which can help construction professionals to get ready with suitable coping skills to manage stress.

The rehearsal of the literature in an organized way has been demonstrated that limited studies tried to concentrate on or highlight the stress and stressors within professional engineers in the construction projects in growing country such as Yemen in the Middle East area. Therefore, identifying and analysing the stressors among professionals in the construction industry in Yemen is the goal of this research by highlighting on studying this issue from several different aspects.

1.3 Aim and Objectives of the Study

The subject of this project is to examine the presence of work stress within professional engineers in construction projects and identifying suitable procedures to cope with stress in the construction industry in Aden city in the south of Yemen. The following objectives established as to:

1. Identify the personality type of professional engineers in the construction industry.
2. Assessing the stress level among the professional engineers in the construction industry.
3. Identify the stress symptoms and signs of stress;
4. Identify the coping strategies among professional engineers in constructions projects to reduce the stress.

1.4 Scope of the Study

The focus of this study will be on the matter of stress and its impact, consequences and stressors among professional engineers in construction field in the south of Yemen more specific in the city of Aden. Yemen was chosen in particular, to be more precise, the city of Aden was picked due to the availability of sufficient information about construction projects at the present time compared with other regions. This study will only be concentrated on the personality type, level of stress and the symptoms and the most significant manners to minify the effectiveness of stress on construction professional engineers.

Nearly around 62 samples were created from professional engineers who are already working in construction strip in Aden city south of Yemen. The questionnaire was given out randomly to professional engineers in construction projects. To fulfill this study, scope the methods and procedures of the data collection should be clear and precise for the sake of getting good results despite the lack of time. The steps of this survey scope will be as follow:

- i. The questions of the reconnaissance will be given out to professional engineers such as (site engineer, site manager, project manager, architecture, quantity surveyor, quality engineer) who working in construction site;
- ii. Some aspects of construction might not be highlighted cause time handicap;
- iii. The questions of the reconnaissance will be emailed for targeted people;

1.5 Significance of the Study

Companies and organizations concerned about the health, safety of the employees. Where there is no doubt that health and safety are among the most common problems affecting many industries especially construction. Therefore, this survey outcome will be significant to assist and guide professionals like engineers of the construction site, the construction site leader, architects, and other professionals

to prescribe the favourable attitude that will aid in minifying from stress level in construction works to increase the quality, productivity and achieving economic stability.

Recently noticed, that stress is becoming an integral side of the construction field works. Many issues and problems that have been generated because of stress which significantly influence the professional engineers who work in construction. Permanently and sequentially assessing the stress level and stressors are important to assist construction companies to address specific problems and find the right way to deal with it.

In the past, the level of awareness was weak so stress was not seen as a serious problem threatening the individual and society so no action was held on the issue of stress in construction, especially in the growing countries. It was only taken in the developed countries because they started to understand its disastrous outcomes so some procedures were applied to remark the issue and control it.

Hence this study intends to scrutinize the stress dilemma in construction strip in growing countries like Yemen more specific in Aden city south of Yemen. The survey will focus on the personality type, level of stress and the best manners and policies to diminish and control these influences. Achieving the findings from this study would ensure the improvement of quality, productivity in the site. In addition, this survey outcome will be summarized in database for future studies as well as some solutions, recommendations, and guidelines for coping with stress.

1.6 The Methodology of the Study

In the course of carrying out this study, including a literature review and followed by a casual reconnaissance among professionals in construction industry. The frame of the literature review of this study was about construction strip stress existence among professional engineers in Yemen especially in Aden city and how to minimize it. The main concern throughout the review is to identify personality type,

asses the level of stress on professional engineers involved in the construction industry and diminish the stressors by establishing good plans and support favourable attitudes.

The reconnoitring held among 62 professionals from the construction industry to collect data that accomplish the study objectives. After the types of data and the study's objectives were considered the data analysis will be based on quantitative and qualitative approaches.

Solutions and recommendations, as well as the database for future studies, will be the conclusion of analysing the data at the end of this research. Figure 1.3 describes the method of carrying this study that includes four stages which start with stage one that includes selecting the topic then stage two which represents the grouping the data and finally passing by the stage three and four that comprise the data analyzing and the result as shown in the figure 1.3.

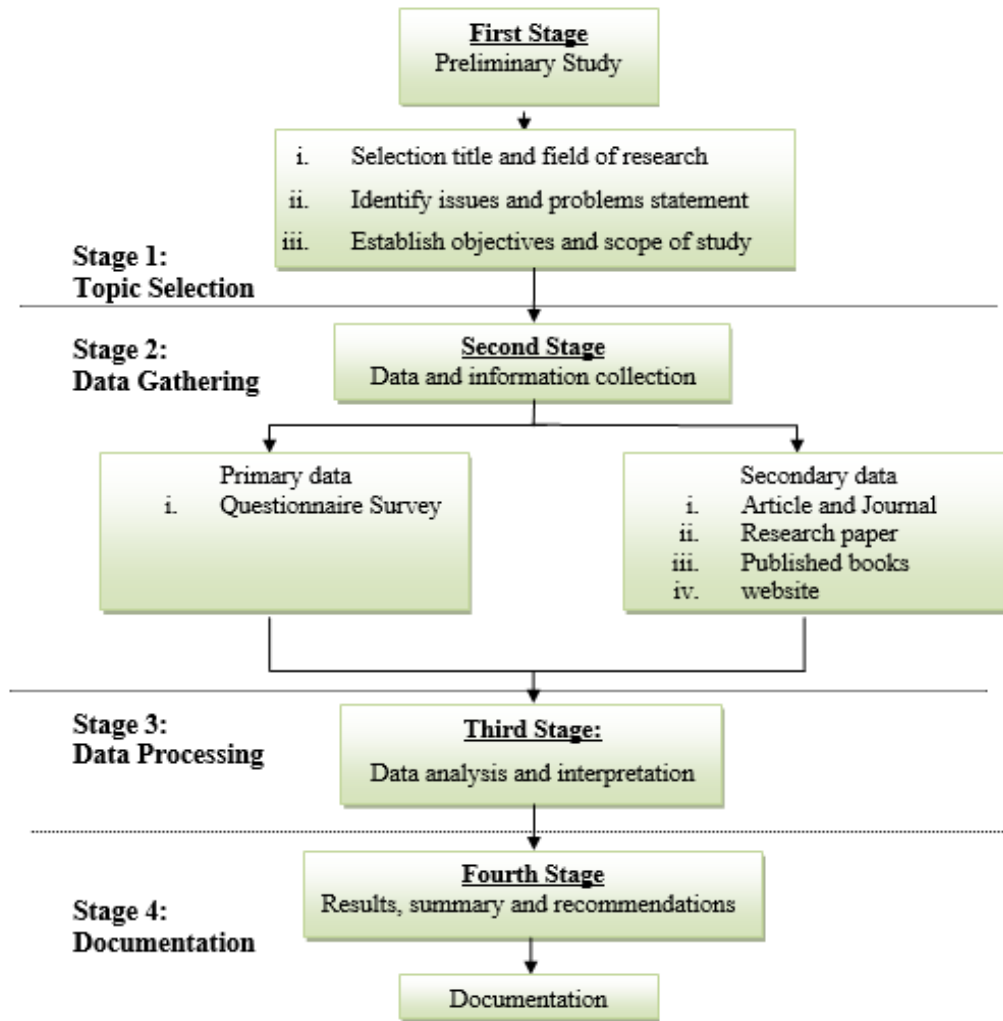


Figure 1.3 Outline of the research methodology

1.7 Arrangement of the Report

Five chapters will be included in this master's project report as follow:

In chapter number 1 of this project. It produces comprehensive details about the field of the study. Further problem statement, aims and objectives, scope, and significance of study and the method to carry out this study will be comprised in this chapter.

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