DOES WORKLOAD STRESS EFFECT THE JOB PERFORMANCE WITHIN TIME PRESSURE AMONG ARCHITECTS-ENGINEERS IN KOTA BHARU PRACTISING CONSULTANCY SERVICES FIRM

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Does Workload Stress Effect the Job Performance within Time Pressure among Architects-Engineers in Kota Bharu Practising Consultancy Services Firm

by

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ABSTRAK

Tujuan kajian ini dijalankan adalah untuk mengenal pasti kesan bebanan kerja terhadap prestasi kerja dalam tekanan masa di kalangan arkitek-jurutera di firma perkhidmatan perunding amalan di Kota Bharu. Kajian ini juga dilakukan bagi mengetahui bagaimana kesan beban kerja tersebut mempengaruhi produktiviti dan prestasi dalam bidang perkhidmatan profesional. Di samping itu, ia turut mengenal pasti faktor utama yang menyumbang kepada tekanan beban kerja seperti tekanan masa dan faktor lain. Kajian ini dijalankan dengan menggunakan kaedah kajian kualitatif memandangkan topik kajian pada masa ini amat memerlukan penjelasan; tidak banyak yang ditulis mengenai topik ini dan tidak banyak kajian yang dilakukan pada populasi tersebut. Data berkaitan dengan tekanan kerja dan prestasi kerja dikumpulkan daripada 15 arkitek-jurutera melalui kaedah temuduga menggunakan soalan separa berstruktur. Daripada temuduga yang dijalankan, dapat dijelaskan bahawa beban kerja yang tidak berkesudahan menjadi salah satu punca utama tekanan kerja di kalangan arkitek-jurutera, dan tekanan ini mengurangkan kecekapan mereka dan sekaligus mempunyai kesan ke atas prestasi. Oleh itu, adalah disyorkan bahawa para arkitek-jurutera mesti mengetahui bagaimana untuk menguruskan beban kerja dan masa mereka dalam meningkatkan prestasi kerja dan kepuasan kerja mereka. Malahan, majikan juga perlu memainkan peranan penting dalam mengimbangi beban kerja di kalangan pekerja mereka agar dapat memaksimumkan prestasi pekerja mereka pada tahap yang lebih tinggi.

Kata kunci: *Tekanan Bebanan Kerja, Prestasi Kerja, Tekanan Masa*

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within Time Pressure among Architects-Engineers in

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ABSTRACT

The purpose of this study is to identify the effect of workload stress on job performance within time pressure among architects-engineers in Kota Bharu practising consultancy services firm. The study ought to find how workload stress effect the productivity and performance in professional services. In addition, it identifies the main factors which also contribute to workload stress like time pressure and other factors. This study is conducted by using qualitative study since currently the topic of the study is explanatory; not much has been written on the topic and not many study been done on the population. The data related to workload stress and job performance were collected from 15 architects-engineers through interview using semi-structured question. From the results obtained, it was evident that never-ending workload also has become one of the major causes of occupational stress among architect-engineers, and this stress reduces their efficiency and had an effect on performance. Thus it was recommended that architects-engineers, themselves must know how to manage their workload and time in order to improve their job performance and job satisfaction. In fact, employers also must play vital role in balancing the workload among their employees in order to be able to maximize the high performance of their employees.

Keywords: *Workload Stress, Job Performance, Time Pressure*

CHAPTER 1

INTRODUCTION

1.1 Introduction

Since a few decades ago, the construction industry in Malaysia has witnessed massive development that transform our country ranking of 25th out of 138 develop economic country in Asia as reported by the Global Competitiveness Report 2016-2017. Resulted from this, professionals' workers such as architects-engineers, and also those who works in this sector began to move simultaneously with the extremely competitive surrounding with new projects are planned, designed, constructed and presented within new technology, limited time and budgets. According to Wong et al (2010), in his writing mention that;

> *"Continuous modification of building process, pace and complexity of work and increasing demand for higher productivity have become common features of this industry."*

Therefore, great volume of works mean that architects-engineers have to face sudden increase in their workload and thus affect their job performance since a continuous workload lead to job stress and low performance. Several studies found that job stress influences the architects-engineers overall performance with high demand from their firm towards their architects-engineers to produce higher productivity.

In addition, the occupational stress study of the construction industry, conducted by Hanna, et al (2005) found that nearly 75% of construction professional experience anxiety, or depression due to stress.

1.2 Background of the study

Practising Consultancy Services Firm is a professional service organisation that provides customised services such as projects specific by clients for upon bidding or task-oriented packages. These types of organisations are categorised as architectural practices, consulting engineering practices or project management consultancies. To legally practice, all this firm must registered under Board of Architect Malaysia or Board of Engineer Malaysia and the owner of the firm must be a Professional Architect or Engineer.

In architectural firms, their common scope of works is planning, designing plan for buildings and other related architectural works, while on the other hand consulting engineering firms provide structural design, construction and management services for building structures, mechanical and electrical design and installation, civil engineering works and industrial processes and others. Hence, architectural and engineering services are strongly related to each other with physical construction activity and or business services. Although both architect and engineers shared common scope of work, they might have different opinion among them as professional but eventually with their own specialty.

Since architects-engineers occupied a high stream position of building and construction process, the demand for architectural and engineering services are closely related to the overall investment in construction and industrial which link to the economic cycle.

1.3 Problems statement

The issues of workload stress are rising day-by-day in construction industry since the construction industry has become a demand working environment. Hence, there are many related job stressor that are related to the professionals engaged in this industry including architects-engineers. Based on study conducted by Leung et al (2000), he stated that;

> *"Work overload has long been recognized as the prime determinant of emotional stress which may impact on performance"*

In other hand, Brunetti (2006) in his study also state that;

> *"Problematic nature of time and time shortage also has become a major factor in workload stress"*

A journal titled "*The relationship between stress and work performance in an industrial environment of Faisalabad district*", written by Mahmood et al (2010) cited;

"With excessive pressures, the job demands cannot be met, relaxation turns to exhaustion and a sense of satisfaction replaces with the feelings of stress, motivation sheds away and the workers start losing interest in the work and hence performance chart shows a negative trend."

Changes in workload tend to change the stress level of employees, which basically affect the employee's performance. The main reasons of assess and predict workload is to achieve how to distribute, manage workload in avoiding overload, have more work to do than can be accomplished, or underload, have work that cannot accomplished with the abilities and skill of current workers.

Besides workload, some other factors also have been consider as important influence in work stress among architects-engineers such as limited time frame, also known as time pressure, different scale of projects and different requirement from clients. In balancing those various demands, sometimes it increases the architects-engineers workload stress since they are required to make final decision on their own. This situation occurs especially when a variety of factors involved within the time of tasks or projects submission.

So, it is necessary to conduct a study to figure out the main factors or workload stress and suggest ways to overcome the problem of workload stress. This study is important because if the problem is not resolved it may cause problems to the organizations and employees in the future.

1.4 Research questions

The specific research question to which answer were sought is;

i) How does workload stress impact the job performance?

i) Are time pressures and deadlines also the main cause for workload stress?

ii) What are the other factors that influence to workload stress and effect job performance?

1.5 Research objectives

The objectives of this study are to identify how to workload stress impacts the job performance within stipulated time frame among architects-engineers. To achieve the above aim, the following objectives are set;

ii) To find out how workload stress impact job performance.

iii) To identify if time pressures and deadlines also the main cause for workload stress.

iv) To determine other factors that influence to workload stress and effects job performance.

1.6 Scope of study

The study focused on architects-engineers that work in practising consultancy services firm in Kota Bharu district since Kota Bharu is the environment demographics and the main town of Kelantan. According to Ministry of Finance Malaysia records in 2017, there are currently, seven numbers of architect firms and twenty three numbers of engineering firms which registered main address is in Kota Bharu district. 15 respondents who works as architects-engineers are selected to participate in this study and interview is use as technique to collect data where semi-structured question were design.

Therefore, the scope of this study is to identify what is the impact of workload stress on job performance and also to figure out how limited time frame, time pressure, also affects the workload stress and job performance. Thus, the findings can be used effectively by the employees and managements in managing workload stress.

1.7 Limitations of the study

Every research has its own limitation and for this study, there are also few limitations need to face as a researcher. The first one is time constraint, the time given to conduct this study was very short and the collection of data was not adequate. This limited time also need to be divide between other routine works, working hours, and academic work.

Secondly, some of the respondent did not give full commitment in answering the interview questions due to time pressure where most of them have a very tight daily work schedule. They are surrounded with designs to complete, dealing with clients or

authorities, meetings to attends and site to visits. So, it is quite hard to find a suitable time to set an interview with them.

Finally, in some cases, respondents might not give the best response in relation to the study. According to Schermerhorn & Bond (1997) this kind of situation is common among Malaysian workplace setting where respondent feel not comfortable to express their feeling and experiences, and they being inactive in making conversation because of the collective culture of living and power distance. Supported by Goddarrd (2006), saying that;

> *"Malaysian has also been influenced by the need to avoid the "malu" (ashamed) personality and not to make conversations complicated."*

1.8 Significance of the study

The main purpose of this study is to find the impact of workload stress on job performance and how the limitation of time also can cause stress. Thus, the results of this study will benefits the practising consultancy services firm, employees, potential employees and future researchers. This study will become significant as it provide the essential input and data on impacts of workload stress to the job performance in practising consultancy services firm, including the cause of worker stress, their department and gender.

Besides that, this study will serve as the base for future plans of actions by practising consultancy services firm and employee to manage workload stress so as not affect the job performance. It is also will be guidance for employer on how to help their employees in manage workload and time pressure.

The findings by this research not only benefit the employer but also give benefits to the entire management of organisation and create an important fact on how important to manage workload stress. May be with the availability of this study, they can improve employees management system in practising consultancy services firm. Other than that, this study also involved workers and prospective employees. It can also be used as preparation for potential employees in facing some stressful situations at work.

Additionally, in future, this study might be serving as a theoretical model for the same study nature. Future researchers will also get benefits from this study since the facts provides can be used in comparing Future researchers will benefits from this study and it will provide the usability facts needed to compare their study.

1.9 Organisation of the study

The entire study was organised into five chapters. The first chapter, which is chapter one outlines the general information about the study including research problem, research question, objectives, significance of the study and also the limitation. Chapter two focuses on review of related literature and theoretical frameworks and also define the meanings of highlighted words. Chapter three discussed the methodology used in data collection. Chapter four presented the data analysis, findings and summary of the study. The final chapter which is chapter five provides the conclusion drawn from research findings and recommendations for the solution of the problem studied.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature in carry out the knowledge and ideas that have been established on the relationship of workload stress, job performance and time pressure. The references used as an additional source of information include academic journals, books and magazines and also online journals. This chapter will also highlight the definitions and theories of workload stress, job performance as well as time pressure since there are different opinions and statements from different resources.

2.2 Importance of concepts

Workload has become a vital role that cause stress in workplace where employees have to face in completing their task such as heavy load, deadlines and extra working hours. When employees feel burden with all the job stressor and plus with the management itself, this will impact not only their performance but also the organization. This workload concept has been an issue in previous research to identify the main indicator of workload stress.

In employment environment, failure to handle workload will lead to stress. There are three conditions that can bring out an employee to workload stress such as;

i) Overload or quantitative workload, employee has more work to do compare to what they can accomplish.

ii) Qualitative workload, employee face difficulty to settle their work and

iii) Underload, works that cannot be done using the ability and skill of existing employees.

Robbins (1996) in his study, mentions workload as;

"Workload is also said to be the cause of mental stress for employees and stress is an active state of mind in which human being faces both an opportunity and constraint."

According to Hart & Staveland (1998) workload being described as;

"The perceived relationship between the amount of mental processing capability or resources and the amount required by the task."

Meanwhile, in term of stress by Larraz (2011), he defines stress as;

"… a state where a person perceives that the wellbeing is being endangered and therefore, energy must be directed towards protection."

This view was broadened by Weinberg & Sutherland (2010) in their study, which referred stress as;

> *"... a state of imbalance that is elicited by an actual or perceived disparity between environmental demands and the person's capacity to cope with these demands."*

High workload stress among architects-engineer occurs when there are numbers of tasks or projects with different difficulty need to be done in limited time frame. Thus, there are positive and negative workload stress effects on architects-engineers job performance and this can be seen when they presented or delivered their final tasks or project designs. Hence, it can be said that employee performance is a main factor that have relation with the company outcomes and success.

The above statement was supported by Jamal (2007) in his writing, as he mention;

> *"Individual's performance is low at a low level of workload, at medium level at a moderate workload, and highest at a high level of workload."*

While, on the other hand, some study agreed that there are negative relationship on workload and job performance. This statement was support by several author like Bhagat et al. (1985); Westman & Eden (1991); Vinokur-Kaplan, (1991); Long et al. (1992); Westman & Eden (1996) and Siu (2003); as they state that;

"Workload and a possibly resulting stress can be dysfunctional for the individual and the organization."

At moderate levels of stress and workload, performance may be improved due on how the employees perform their task effectively without distraction in the presence of perfect stimulation. Meanwhile, low level of stress might be too low to encourage high performance, and if the stress is in high level it also might be too high to encourage an effective performance.

2.3 Conceptual theory

A theory provides an explanation and prediction of phenomenon of framework. As for concept, it is relate on description and interpretation of data, including how we categorized the phenomena. There are few theories that concern only on question or topic with the same field but some theories also concern the whole field and bring along the paradigm status. However, the constitution of the research topic interest influenced depend on how the research theories and concept frame is conducted.

Thus, a theory will help researcher to understand what lie under the process and how to choose an effective course of action as mention by Stoner & Freeman (2000),

"… theory is coherent group of assumption put forth to explain the relationship between two or more observable facts."

A right theory will enables us to figure out the right expectation in certain conditions or situations. The level degree of principle clutch cannot be the measure on the basic and theories of any field and helps us to apply them to real cases. Role theory, stimulus-based, person-environment fit, interactional and role overload are some of the relevant theories that relate to job stress and job performance.

Eventually, the reviews of literature show that there is not much research in job stressor among professional in construction industry. Hence, this study focus on workload stress which has been identified as one of the work related stress factors and work stressor being define by World Health Organization's (2007) as;

> *"… the response people may have when presented with work demands and pressure that are not matched to their knowledge and abilities and which challenge their ability to cope."*

Previous research by Yang (2004) has identifies six variables which involved many elements such as daily workload, motivation, management, maintenance, education and training and stress and fatigue that affected employee job performance including workload. His hypothesis was strengthening by the empirical examination where workload has important effect on employee performance. This statement being proved by, Sutherland & Davidson (1989) in their study as they state;

> *"Work overloads, working long hours and role ambiguity are known to be leading causes of stress amongst professionals in construction projects."*

In addition, Cooper (1998) also summarized that some of the common factors as listed above lead to the increasing of job stress.

2.3.1 Workload stress and job performance

For the past decades, many researches have detected that stress also being affected by the positive and negative relation of workload stress and job performance. However, since workload is conceptually different from performance, so workload is always categorized by "being very busy" with no exact direction or target.

The previous studies of workload appeared in the 70s by Guillevic (1991). Ever since then, the issues related to workload has been discussing over time. Workload was referring as a specific requirement level of task given in constraint time and with consequences of the task being accomplished. In other words, workload is refers as the intensity of job task and as one of the factors of employee work stress.

Motowidlo, Borman & Schmidt (1977) in their study state that job performance as;

> *"… the overall expected value from employees' behaviours carried out over the course of a set period of time."*

The term of job performance is referring as an activity that an individual is able to complete successful the task or project given to him or her, subject to reasonable limited resources and common constraint. Performance is an important criterion for the outcomes successful of an organization and employees performance is a main factor since it goes consistently with the outcomes and successful of the organization itself.

Stress not only a factor which influences on job performance but workload and inadequate money benefits are the factors also, which influences the performance of the employees. As discussed by Campbell, McCloy, Oppler & Sager (1993) in their writing, 'A Theory of Performance', job performance being describe as;

"… an individual-level variable, or something a single person does."

The more higher the level of performance achieve by the architects-engineers, meaning that the greater his or her firm accomplished. On the other hand, Gloet (2006); Lewis (1999) and Mathis & Jackson (2011) said that job performance of employee is;

"… the capacity of a person to achieve his supervisors or achieving the organizational objectives led down by the upper management."

2.3.2 Relation of workload stress and job performance

In architectural-engineering profession, design quality is important in term of architecture and engineering works, where it was labelled as indicator for a company's performance by client. The term design quality was defined as fast and right where architects-engineers can present their final product with less or no correction. Since design is the driving force throughout the project and beyond where every design concept must achieve the client requirements and suitable to the requirement used so architects-engineers falls into stress conditions.

But, in the other hand, there is a complex relation between workload stress and job performance where even though the workload increase it doesn't mean that the performance will decrease Sometimes, in certain case, the performance will increase consistently with the increasing of the workload if the employee have a strategy in handling task demands as according to Nachreiner (1995) where he stated;

"… performance can be affected by workload being too high or too low."

Moreover, since workload is considered as the influencing factor of employee stress, thorough studies were required to find the solution on this issue. However, to sustain low workload might lead in loosing awareness, reduced alertness and also boredom.

2.3.3 Job performance and time pressure

The work demand and time pressures are also the main factor that influence work stress. For example, if an employee face a situation where he or she need to settle all their heavy workload within limited time, so he or she will feel stress to settle all the works and nevertheless it must be submit on time. Brunetti (2006) support this statement by saying,

"…. a major factor in workload stress is the problematic of time and time shortage."

In certain case, architects-engineers are given unrealistic deadlines to submit their final task or projects and this situations always create more stress and as a result incomplete task or project design are piled up every day. Under time stress, architects-engineers also tend to restrict their task or projects that they believed to be more important and also restrict the source of info that believed to be important. Locke & Latham (1990), refer deadlines as,

".. the time which some task is supposed to be completed."

Time stress is experienced when there is little or no time to meet the personal obligations or work deadlines. When the time pressure becomes extreme it leads to stress which can be also said as time pressure since time pressure at workplace cannot be avoiding with the demand of modern work environment nowadays.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter will discuss on the method used to carry out this study. It discusses the method for determining the research, population, sampling and sample, techniques to be used in sampling, research design, survey instruments and procedures for data collection and data analysis. The primary data was obtained from 15 respondents who work either as architect or engineer in Kota Bharu practicing consultancy services firm through interview.

3.2 Research paradigm

When researchers talk about a different approach to the investigation, they talk about a paradigm. A paradigm is a world view or a set of assumptions about how it works. Quantitative and qualitative research methods involve very different assumptions about how the investigation should be carried out and the role of researchers.

The term paradigm comes from the Greek word patterns and was used for the first time by Thomas Kuhn (1962) describe conceptual framework as shared by the scientist to provide simple model to identify problems and solutions. Paradigm also define by Kuhn as,

"… an integrated cluster of substantive concepts, variables and problems attached with corresponding methodological approaches and tools…"

And he also believes, this term refer to the cultural paradigm of assuming a set of beliefs and values in common in the research community about the behaviour and nature on how researchers conduct their research.

While Olsen, Lodwick & Dunlop (1992) define paradigm as,

"A paradigm implies a pattern, structure and framework or system of scientific and academic ideas, values and assumptions."

Research in the social sciences is primarily based on two main paradigms called positivism or systematic quantitative approach and construction or qualitative approach. Also present in the fall survey research paradigm positivism as ontology research approach is based on the acceptance of a single concept as knowledge. The approach is objective epistemology and methodology used deductive approach as it is called by the Terre Blanche & Durrheim (1999) as,

"The research process has three major dimensions: ontology, epistemology and methodology. A research paradigm is an all-encompassing system of interrelated practice and thinking that define the nature of enquiry along these three dimensions."

There are a number of paradigms given by the researchers such as positivism, interpretivism, realism, pragmatism, and other research proposals positivism. Research paradigm chosen by the researchers who is trying to find a positive outcome. Positivist researcher believes that everything can be researched and obtained through the research, therefore positivism also tend towards either quantitative or qualitative research.

Interview methods have been proposed to be used in this study. The objective of the research will be included in the questions to collect responses through interviews, stress-related workload. A semi-structured interview questions was set as guidance during the interview; fourteen questions were asked during the interview section and only few selected question used to be explain in the findings chapter.

3.3 Data

The process for gathering and preparation of data is one of the critical and essential in the whole research. The data was collected as a material fact will generally be adopted by the scientific community for research purposes of verification. Boston University Libraries define research data as,

> *"Research data is data that is collected, observed, or created, for purposes of analysis to produce original research results."*

Since there are various types of research, and these types may include quantitative data, qualitative data and mixed research methods which involves a combination of both quantitative and qualitative. Meaning that, the type of collected data and source will change depending on what is the type of research.

Under qualitative research, researcher can use different technique in collecting source of data either the primary or secondary data. The most common source in collecting data in qualitative research is observations, interviews and documents review. (Creswell (2009); Locke, Silverman & Spirduso (2010); and Marshall & Rossman (1999)).

3.3.1 Secondary data

Secondary data is data that has been collected by and available from any other source. Data that is cheaper and faster than the low data and may also be available when the main data cannot be obtained at all. Secondary data can be obtained through internal resources or external sources.

3.3.1.1 Secondary data and literature review

Data for these types of data can be obtained from the references that are related to the study. It is data that has been collected by another person's and are drawn from a variety of sources. Secondary data: It collects through literature, journals, and websites. This type of data can be refined in previous study resources. It is also referred to as data tables, which means that data can be obtained through studying existing references.

Blumberg et al. (2008) define secondary data as,

"… information or data already collected by other researchers or institutions, usually for different purposes."

He also added that,

"Secondary data enable the researcher to place the study in the context of existing knowledge as well broadens the researcher's understanding to the research topic."

3.3.2 Primary Data

The primary data is collected to provide a basis for analytical studies. The main method of collecting data is either through;

i) Measurement

ii) Interviews

iii) Questionnaires or

iv) Observation.

There are some advantages in using primary data where the researcher can collects specific data in considering the problem where there is no doubt about the date collected since it may be possible to obtain additional date during the review period.

According to Storey & William Kelleher (1999), in his writing guide for student, he refer primary data as,

"Primary sources originate in the time period that historians are studying. They vary a great deal. They may include personal memoirs, government documents, transcripts of legal proceedings, oral histories and traditions, archaeological and biological evidence, and visual sources like paintings and photographs."

3.3.2.1 Sources of data

The primary sources of data were collected through semi-structured interviews. Multiple techniques have been used to get data from the interviewees and the questions that used in this study including indoor and outdoor questions. Closed ended questions aimed at restricting the respondent's answers, by providing objective comparative analysis.

One of the main advantages of using research data the researchers were able in gathering information for specific purposes of the study. Basically, the researchers will create questions that can help them in getting the data or information that is appropriate according to their study on their own, using surveys, interviews and direct observation.

3.3.3 Sampling

Sampling is defined as a subset of the entire population-related research topics and participates in the on-going study. Sampling is also an important step as its involvement in most case since it not appropriate to examine all of the population.

In selecting sampling member, researcher need to base on two ways; probability sampling and non-probability sampling. A probability sampling method means any method of sampling used several forms of the random selection. In order to have random selection method, you need to set some of the processes or procedures to ensure that the different units in the population have the same probability to be selected

Meanwhile non-probability sampling is defined as sampling techniques which may be members selected for the sample that cannot be taken into account. It is contrary to probability sampling, where calculation on the odds of probability can be made.

Additionally, probability sampling also involved a random selection and the non-probability sampling does not depend on the subjective judgment of researchers.

According to Vander Stoep & Johnson (2008), they state that;

> *"In non-probability sampling, participants are selected based on possess or their availability to participate. Therefore, each population member is not equally likely to be selected to participate a non-probability does not use probabilistic aspect of selection."*

The distinction between probability and non-probability sampling is that the probability samplings do not involve random selection of and not the probability sampling. With a probability sample, whether it is likely to represent or not represent the population well and it often becomes difficult to know how far he has done research. In general, the researchers chose random sampling of probability or of people who non-probabilistic, and consider them to be more precise and tight.

Since this study is a qualitative research, non-probability sampling is fit, because as per the research question which describe the topic of the research and the availability to participate. The population of this study was architectural and engineering practising services firms that operate in Kota Bharu district. A complete list of the firm was obtained through 'e-Perolehan', a web site by Ministry of Finance Malaysia. The list of the company also registered either under Board of Architect Malaysia or Board of Engineer Malaysia or from the list, there are seven companies of architect and twenty five companies of engineering consultant. Final sample size is 15 architects-engineers that are working in those companies were successfully collected for analysis through interview.

3.3.4 Instruments of data collection

The instrument is a general term used to researchers measuring device such as surveys, tests, questionnaires, interview and others. Instruments help to distinguish between the tool and equipment by assuming that the instrument is an act of devices and equipment, the process of developing, testing, and using the device.

According to Parahoo (1997) research instruments is define as;

"A tool used to collect data. An instrument is a tool designed to measure knowledge attitude and skills."

For this study, the data collection technique is semi-structured interview. The information will increase since when we get data from different respondent that gain different experiences will avoid bias the information credibility. The collected data were analysed by using proposed method, through analysis of data, findings and thus, recommendation been made.

Interviews can be used as the main data collection methods to gather information from both individuals on their own practices, beliefs, or opinions. They can be used to collect information about the behaviour or past or present experience. The interview is a method to collect data that is made orally using a set of questions that have been designed before.

According to Shneiderman & Plaisant (2005),

"Interviews can be very productive since the interview can pursue specific issues of concern that may lead to focused and constructive suggestions."

From the result, the type of interview can be choosing either in structured, unstructured or semi-structured but depend on the research design and requirement. Job interview commonly known as a formal interview also categorized under structured interview. Structured interviews are mainly used in research studies because it is a quantitative research method. The main purpose of the interview is to ensure that every interview is presented with exactly the same questions in the same order in which a set of questions prepared in advance and the interviewer will not turn from the schedule interviews or investigations outside of responses received so that they are not flexible.

Instead, unstructured interview is more like a conservation missiles from tight structured interviews. Therefore, sometimes it called as informal interviews and is also referred to as' the interview findings. In an interview unstructured, an open question is used and some questions may be added or released during the progress of the interviews. Unstructured interviews are more versatile to be appropriate question and it can be changed based on responses expressed by the respondents.

In the meantime, semi-structured interviews often contain both types of structures and they can use either of closed and open questions and thus, it give positive result since both methods were used. To ensure that the questions posed are aligned and equally, the interviewer should have a set of core questions as a guidance during the interview and that the answer was graced by the respondents included in the scope of the study. While during the interview, the interviewer is still have a change to set another question to get more information that relates to the study.

This study used a semi-structured interview method, since the interview is a method of collecting data; it commonly involves a personal visit to respondent either at work or in their homes. In the course of the interview, the interviewer will ask you interview questions and jot down or take notes on the answers/feedback from the

respondents. Interview methods become very useful to obtain specific data in a short period of time and thus it can also serve as a basis for giving out the general overview of respondent's thinking.

As a precaution in the use of the above techniques for data collection, Busha & Harter (1980) stress that,

> *"The interviewer must be well-prepared before the beginning of the questioning process. The interviewer should not just know the questions to be asked, but also the sequence of the questions and the method of the recording the data."*

3.4 Relationship between primary and secondary data

The difference between primary and secondary research collection is a collection of data quality and research involved conduct research itself, or use data for the purpose it was meant for. On the other hand, secondary research data is the data that have been accepted for other purpose or from third parties.

3.5 Data analysis

Data analysis is an experiment by the researchers to summarize all the gathered data. Data analysis also means by to organize, for the purposes of preparation and structure to unearth as according to Polit et. Polit et al. (2001) he state;

> *"… qualitative data analysis is a process of active and interactive."*

Qualitative content analysis is a systematic description of objects or materials research. It involves detailed observation and description of the object, the thing or things that comprise the study object. This approach is more appropriate for this study because it is allowed in, feeling a detailed account of the changing circumstances, therefore qualitative methods are suitable for this study because this study was conducted in an environment where initiative implementation occurs.

Analysis of the data is started after conducting the first interview. Analysis has built from the analysis of information, bright and nuanced report that reflects what the interviewees say and answer the research questions.

3.5.1 Data transcription

Raw data gathered is usually in the form of voice recordings or video recordings should be translated into writing. Thus, under this part of the discussion will be distributed to area how raw data can be decoded data is translated using either, naturalized or denaturalize.

In naturalized, this type of transcription data, the raw data will be copied by the words recorded. In other words, every word that has been recorded will be copied into writing. Meanwhile, as for this denaturalized approach, transcription will be made to the important points related to the study and transcription will be made to the important phrases only and not all the words will be copied into writing.

3.5.2 Qualitative data analysis

Qualitative data analysis is the diversity of procedures and processes move from qualitative data that have been collected either in the form of understanding, interpretation or explanation of a person or situation that is being studied.

Qualitative data analysis commonly based on the philosophy of interpretation and is collected in the form of a non-numeric. Typical examples of such data are;

i) interview transcript

ii) field notes, notes taken in areas of interest

iii) video

iv) audio recordings

v) images and documents such as reports, minutes of meetings, e-mail.

Qualitative data analysis process mainly involves two things; both in writing and identifying themes and several types of qualitative data analysis form can be found in writing. On the other hand, several methods can be used as an example of a conversation analysis and discourse analysis that does not require the identification of themes but with a view of the theme is part of the majority qualitative data analysis conducted today

3.5.3 Data validation and verification

In examining a set of data, there are two stages involved which reflect the fact that there are two ways that things can go wrong. Both levels are known as data validation and data verification. Two words can cause its meaning depends on the context; they are sometimes understood to mean the same thing. However, there are differences in the biological record is very clear.

Verification or validation data is the process of comparing the data with a set of rules to determine whether a reasonable data. There are many types of authentication data such as format checks and verification of data.

Format checks also known as presence check, run check, and checks type. Some verification checks, such as making sure that the reference grid and the corresponding location or that it is a valid date, which was built for the software. In other cases the manual entry of data allows to connect the existing record, avoiding the need to type the reference grid each time, and eliminate the possibility of typing errors.

Hence, verification of data is where the checking process begins for the data entered exactly match the original source to see if the data is accurate. data validation methods including: Double entry enter data twice, proof reading data-check data entered in the original document and Echo-repeat system data is entered.

3.5.3.1 Qualitative research threats

The concept described by various terms of validity in qualitative research. This concept is not a single concept, fixed or universal. Despite the fact confirmed there are some qualitative researchers argue that the validity of terms that are not related to qualitative research, but at the same time, they recognize the need for eligibility checks and investigation measures.

Maxwell (1992) has classified five threats to validity in qualitative research such as;

i) descriptive validity

ii) interpretation valid

iii) researcher bias

iv) the validity of the theory and

v) reactivity

Descriptive validity means that the accuracy in reporting descriptive information such as events, behaviours, settings, time, place. For example, the investigator should describe the environment and take action on the video camera lens to ensure all the causes of what happened can be captured and examined.

In valid interpretation the level of understanding of the research participants' internal world that is the degree to which participants from the research point of view, thoughts, intentions are accurate and understood by researchers. The extent to which they are described in a research report based on participant feedback and citations.

For researcher bias, researchers will allow personal views and perspectives one's to influence the way research is conducted on selected observation or recording and interpreted data. For theory validity, the extent to which developed theoretical explanation of the study according to the data such as data collection in the field over a long period of time, the confidence that the pattern of behaviour or relationships are stable and have a greater understanding of good manners also predicting the pattern of the results and determine whether the decision real convenient predictable pattern.

The last one, reactivity, is being defined as a phenomenon that occurs when individuals change their behaviour because of the performance or the realization that they are being watched. These changes can be either negative or positive, but depend on the situation.

As a summary, validity is a matter of degree, rather than an absolute state, where social reality is multi-level and by the ease in which an explanation is impossible look out for the widespread and conclusions and theories that claim to explain everything. Results and conclusions reveal at their best only a few standpoints to some phenomena and they cannot explain the whole truth of all possible standpoints by researcher. Since qualitative and quantitative has both advantages and disadvantages. Their starting point, objectives, methodology and nature of the decision is different, the best solution is to complement each other.

This study is exploratory in nature and the sample size is relatively small with 15 respondents should be interpreted with caution in terms of generalizability. The respondent was selected based on that they have at least five years of working experience, assuming that they will have enough exposure to workload stress and will have an opinion about how they think this can be controlled by the control and support factors. This is a limitation, as the experience of stress and the ways in which people deal with their looks vary by age group (Aldwin et al., 1996).

3.5.3.2 Data validation

Due to the fact that the data collected for qualitative research is mainly based on personal opinions, experiences and opinions, it is very important that the data is being verified. Data validation serves as a method of verifying or ensuring the reliability of the information or data is received.

The following strategies can be used to strengthen the internal validity of qualitative research, as drawn from experience and literature, in particular by Guba & Lincoln (1981); Cannon (1988); and Patton (1991).

The first strategy is triangulation, under this method, the data received confirmation will be made by these respondents. In other words, the respondents shall verify the information received from other respondents. As according to Denzin (1970) and Mathison (1988) this methods means,

> *"… use of various researchers, various data sources, or a variety of methods to confirm the new findings appear."*

For example, if researchers heard about the phenomenon in an interview, seen it happen in observation, and read about it in the documents in question, he or she can be sure that the reality of the situation, because they think by their wit, which was presented as truth completely possible.

In the social sciences, the triangle's often used to show that two (or more) method used in this study to review the decision of one and the same subject. Rothbauer & Paulette (2008) cited that;

> *"The concept of triangulation is borrowed from navigational and land surveying techniques that determine a single point in space with the convergence of measurements taken from two other distinct points."*

The idea is that people can become more confident in the results if different methods lead to the same result. Triangulation is a strong technique that allows verification of data through cross verification from two or more sources. In particular, it refers to the combination and application of research methods study the same phenomenon. This method can be used in both studies either quantitative, validation, and qualitative, inquiry, and it is a strategy that is consistent with the qualitative analysis of credibility verification.

The combination of various methods, theories, observation and empirical materials, can help the researcher to various observers, theories, methods, and empirical materials, researchers can hope to address the weaknesses or intrinsic biases and issues that arise either from a single method, a single observer and a study-theory.

The main purpose of triangulation in qualitative research is to increase the credibility and validity of the research. According to Cohen & Manion (2000) they define triangulation as,

"an attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint."

In other context, triangulation was contending by Altrichter et. Al (2008) as.

"… gives a more detailed and balanced picture of the situation."

Meanwhile, O'Donoghue & Punch (2003) explain triangulation as,

"… method of cross-checking data from multiple sources to search for regularities in the research data."

And nevertheless, according to Erina Audrey (2013), she state that,

"Triangulation also crosschecks information to produce accurate results for certainty in data collection."

Secondly, member checking, for this method, the data received will be confirmed by people who have knowledge in the field. The person must be an expert in the area to enable them qualified for this process. Taking data collected from study participants,

and a tentative interpretation of this data, back to the people where they came from and ask if the interpretation is reasonable, if they ring true.

The last one is audit, will be called to verify the data received. For this section, third parties will be called to analyse and examine the procedures used in the collection of data to ensure that the processes being carried out correctly. Hence, Hubberman & Miles (1994) said that,

> *"Valid analysis is immensely aided by data displays that are focused enough to permit viewing of a full data set in one location and are systematically arranged to answer the research question at hand."*

Most authors agree that internal validity is the power of qualitative research. There is a bit of layers between researchers and the phenomenon under investigation. The strategies described above can help ensure that the interpretation of reality presented as true to the phenomenon as possible.

In this study, triangulation was suitable as the data validation method since triangulation use two or more in studying the same situation or phenomena. Contradictory evidence, often known as stray cases, must be found out, inspect, and taken into account in analysis concerned to ensure that bias does not interfere with the investigation or to change the perception of the data and any insights to deal. Through constant comparison method is intended piece of data, for example, interviews compared with past data and does not constitute by itself, and thus it allows researchers to treat the data as a whole. Continuous comparison also allows researchers to identify emerging themes/not expected in the research project.

3.6 Research application

Applications research is a process used to gather intelligence and data for decision-making purposes. This method is either include interviews, surveys, research issues and methods or techniques other research and publication of research, interviews, surveys and other research techniques, and includes both, whether historical or current information.

The validity of this study is meant the degree to which the results are a good picture of the phenomena they were intended to represent and reliability in reference to the reproducibility of study. Legitimately be evidenced by several methods, including using triangulation of contradictory a proof, the respondent confirmation, and continuous comparative.

CHAPTER 4

FINDINGS

4.1 Introduction

This chapter describes the analysis of the data collected for this study. It is considered as the answer chosen by the objectives of the study and a variety of research questions that have been stated at the beginning of research studies as well as some relevant variables considered in this study.

4.2 Respondent's background

Fifteen respondents were involved in this study and they are selected among architects-engineers who were working in practising consultancy services firm in Kota Bharu, Kelantan.

The age of the respondent in the sample was right across the age range between 25 and 34 age range to 45 and 55 age range. 14 of the respondent are male and only one respondent is female. This shown that, this field is monopolised by male although there's no gender discrimination in this field but since the working environment is quite dangerous so it is the un-attraction for female. The respondent working experience also varies from 5 years to 30 years.

It was seem to be more practical and simple to works with the entire respondent since I was familiar with most of them. However, since the study was not just looking at the workload stress effect on job performance, but also other factors so there are some considerations need to be taken while doing the interview session.

4.3 Findings

The finding is based on the given the context and elements of the theory states, issues around the actual pressure of workload, work performance, time pressure and others. On the one hand the objective was to determine whether the heavy workload can be consistently associated with high levels of job performance

4.3.1 Objective 1: To find out how workload stress impact job performance.

In this section, the question is design to directly find out the opinion of the architects-engineers regarding how workload create stress and affect their performance.

4.3.1.1 Workload

According to Bowers and Jentsch (2005), workload generally being conceptual as a different between the individual and the resources available for this task demands. Moreover, Bowers et al (1997) also state that,

> *"Central to the concept of workload is the recognition that performance is in direct proportion to the resources dedicated to accomplishing a task."*

This means that when the demand of task increased individually, it requires a greater level of input resources. But if the resource capacity is insufficient compared to the job demands and also the inadequate resources compared to the task demands.

i) Question 1: For the past years, how much workload do you have? Please indicate your total workload changes during last three years?

This question is creating to find out how many workloads being carried by the architects-engineers for the past three years along with the changes of the workload fluctuations.

According to Respondent 3, there are decreasing in the projects undertaken by his firm due to economy factor and his statement was supported by Respondent 8, where he also mentions that the workload is slightly lower than previous year with the same reason as Respondent 3.

However, for Respondent 1, he said that,

"I have to carry lots of projects at the same time and the workload also comes from previous projects that still on-going since most of them are under construction stage."

Thus, Respondent 9 also gave an answer,

"I was assigned a few numbers of government's projects and also private projects. Since most of the project is still on-going, I have to carry and proceed with the same task and responsibilities."

Moreover, Respondent 14 mention,

"My workload depends on the current projects taken by the company, but most of the time there are always lots of work need to be done by me."

But for Respondent 14, he said that,

"Even though there are some changes in the incoming projects, my workload does not change too much."

ii) Question 2: Currently, how many projects/tasks do you have and what types of projects do you have to handle?

Three of the respondent which is Respondent 3, Respondent 4 and Respondent 7 said that currently, they have to handle 3 projects and the types of projects are in different scope of work/design. For example, Respondent 3 currently needs to handle different types of projects at the same time, like designing a tyre workshop, ancillary structure and water treatment plant.

In the meantime for Respondent 4, saying that he is involved in the designing for fire station building, upgrading workshop building and also refurbishment and upgrading water treatment plant. Meanwhile, Respondent 7 was assigned with an infrastructure project, such as repairing national mosque, designing for 4 synthetic football fields and a new hospital like court building.

As for Respondent 1, he said that,

"For the time being, I was assigned with seven projects such as residential development, water treatment and breeder and hatchery. Although, the quantity of my project seem to be small but since the design requirement of the projects are different, I still feel burden and stress."

Meanwhile Respondent 13 give a statement that,

"I have been busy for the whole time since there are more than 20 projects needs either design, checking or supervise by myself. Most of the projects are still under construction with approximately three years period. The example of projects that handled by me is residential, commercial (shop lots, mall), industrial (factories), infrastructure (bridge, roads), and healthcare (hospitals). Thus, I felt really stress but since it is my job so I have to take the burden."

iii) Question 3: Are the projects or tasks are allocated to you in such a way that your workload don't not exceed from whatever is reasonably expected from you?

From the interview session, eight of the respondents, Respondent 1, Respondent 2, Respondent 5, Respondent 7, Respondent 8, Respondent 11 and Respondent 14, shared the same answer. They said that their workload was exceeding more than they expected to carry at one time.

But there are a few numbers of respondent, said that their workload are not exceeding from what they expected as Respondent 3 answer,

"For the time being, the task or projects hold by me not exceed from what I expected. I think this is because currently our country is facing economic slowdown."

Eventually, Respondent 4, Respondent 5, Respondent 6, Respondent 9, Respondent 10, Respondent 12 and Respondent 13 also agreed that their workload did not exceed with what they expected. As Respondent 4 said that,

"All project assigned to me do not exceed of what the company expected from me."

Thus, Respondent 9 supported his answer by saying that,

"… the task or projects are equally distribute among the group member."

iv) Question 4: How often you face stress situation in your job and most of your stress are related to? How do you handle you current workload stress situations?

Overall, from the interview, there is three different answer received from the respondent for this question, either often, sometimes or uncertainty. Four of the respondent (Respondent 2, Respondent 3, Respondent 4, and Respondent 6) state that they often felt stress during their working hours due to workload. With the project's

design need to completed and submit, they also have to solve other problems that arise during completing their design works such as, submission requirement's from different local authorities, clients demand or needed and they also need to keep follow-up with their previous projects.

For Respondent 5, Respondent 7, Respondent 8, Respondent 13, Respondent 14 and Respondent 15, they said that they face stress situation only sometimes and this situation happen in several factors. As mention by Respondent 8,

> *"Whenever I was in meeting or out station, I still need to entertain other parties like phone call from clients and also solving problems that occur in the office. This made me feel really stress because I cannot cope to only one situation at one time."*

A few respondents said that their stress is uncertainty, where sometimes for the whole month they are in stress conditions and sometimes they feel relief, free from stress. Respondent 9 support his statement by saying,

> *"When handling the less efficient group members since they will contribute to late submission and reduce the quality of projects."*

While for respondent 10 did he said,

> *"I feel depressed when I had to treat a variety of demand and requirements from clients who sometimes seem illogical and I also had to deal with bureaucratic issues among local authorities."*

4.3.1.2 Job performance

Job performance is the amount of output that can be given by the employee to the organization where he works and be recognition. It is the total sum of ability, opportunity and motivation, built the kind of relationship between job performance and work stress. The first is an inverse relationship between job stress and job performance in which an increase in the level of direct pressure will also reduce employee performance. The second is direct contact, where an increase in stress levels will increase work efficiency. Third, the level of the medium pressure will increase employee performance to peak at first and then bring workers into a difficult situation.

As according to Motowidlo, Borman & Schmidt, (1997), they cited that,

"Job performance has been defined as the overall expected value from employees' behaviours carried out over the course of a set period of time."

i) Question 1: How do you maintain the design quality (job performance) within stipulated time frame and how do you divide your time properly due to limited time in completing all tasks?

Design quality is very important in this field, because it reflects the organization and the architects-engineers itself. For architects-engineers, design quality define as fast and right, meaning that they can completed the project design in a short time and there are minor correction or no correction need to done with the final delivered.

From the interviews conducted, respondents gave a variety of different answers according to their own views and experience. Among of the respondent, a few of them (Respondent 2, Respondent 3, Respondent 4, Respondent 8, Respondent 11 and Respondent 12) stated that the time and work management is crucial to ensuring the design or job performance that are made are the best. Respondent 3 elaborate his answer as follow,

> *"If we want to maintain our work (design) was excellent no matter how busy we are. We must consider a few steps such as proper planning, using appropriate methods and we also must know what type of computer software orprograms that are suitable with the project design. These apparently, help reduce errors when making the design and also will helps use reduce stress."*

Thus, two of the respondent, which is Respondent 5 and Respondent 6, said that in order to maintain the design quality on job performance within stipulated time frame, we need to do brainstorming and proper planning.

Meanwhile, Respondent 10, Respondent 13 and Respondent 14 give a different answer, where they mention that, a wise job delegation will help keep the quality of work design in high stage. As cited by Respondent 13;

> *"Job delegation is important in any works. Mostly I will design the base and concept of the projects and all the detailing works will be completed by my assistant (technical assistant such as draught person) and all I have to do is just supervise their work from time to time. This will give me ample time to do other project designs."*

4.3.2 Objective 2: To identify if time pressures and deadlines also the main cause for workload stress

This question was design to find out, does time pressure or deadlines also contribute to workload stress among architects-engineers.

4.3.2.1 Time Pressure

Time pressure has become an increasingly prominent feature of the current working day. Both business newspaper and literary organizations have identified the famine, where people feel that work for a period of time, hours, in one day is not enough (Perlow, 1999). During the time pressure, people tend to do excessive work, and it can affect the precisely thinking that required a creative way.

i) Question 1: Did you find that you have unrealistic time pressure and you are so busy and hard to focus on the project/task in front of you? Why?

From the interview, seven of the respondent (Respondent 1, Respondent 2, Respondent 3, Respondent 7, Respondent 11, Respondent 12 and Respondent 15) highlighted that they always face unrealistic time in completing their task or projects. Most of the client, want them to present their final design in a short time and this will lead them to time pressure and work stress.

As for Respondent 12, he described the situation,

"Work stress occurs when we are faced with many tasks. They, the client set us a very tight deadline and we cannot deal with it. We are still working on previous and current work and at the same time we need to complete other work."

Another respondent, Respondent 2 expressed his feelings about time pressure by saying,

"Sometimes, they, the clients gave us a very important job, but we need to implement it in a short period."

But for other respondents (Respondent 4, Respondent 5, Respondent 6, Respondent 8, Respondent 9, Respondent 10, Respondent 13 and Respondent 14), they said that the time given for completing a task or project design are realistic. All we have to do is to manage time properly. This statement was support by Respondent 9, as he said,

“I did not face time pressure since I have an effective work schedule and good task management.”

Respondent 5 and Respondent 6 also said that.

"The time or period given by client is realistic, all we need is to have an effective work plan so we will be able to complete our task, project design, in the given time and we might be able to complete our entire task before the due date if we manage to organize our time wisely."

4.3.2.2 Deadlines

Prior research on the effects of performance has shown clearly that the pressure of time, where either the pressure of time as the subjective feel or the imposition of a deadline, improving the performance of individuals and groups and increase individual and group performance. Furthermore, in some cases, deadlines and workloads are combined to make work more stressful.

i) Question 1: Do you have unachievable deadlines and do you have to neglect some tasks because you have too much to do? What factors do you thinks that contribute to low productivity?

Based on the interviews conducted, almost all of the respondents stated that most of the time they failed to completes their work (project design) on a time basis. It is because they need coordinate, creating designs for multiple tasks or projects at one time and the deadlines are almost the same.

Respondents 1 give his answer in this statement,

"I also have a problem in completing task/projects in a given period. This is because there are a number of projects are beyond my current skills, and that I really need additional time to learn the new skills in designing the projects."

In the meantime, Respondent 3 gave the following answer,

"Failure to submit or complete the work (project design) is sometimes profits attributable to third parties where there is no coordination of the distribution of work, the problem cannot be solved and proper planning."

There is also another factor that seems to be the disturbing factor among the architects-engineers in focusing on their task or projects, which is social media. Respondent 5 and Respondent 6 mention that,

"The use of social media such as Facebook, Twitter path, Instagram and even instant messaging as WhatsApp has become a necessity for everyone. Nowadays, if there is a new project, a WhatsApp group will be create to coordinate communication between us, client and other parties that involved in the project. However, it also affects our work in which most of the agenda discussed in WhatsApp is not related to the work. In fact, social media such as Facebook is also the reason why we are not able to focus on our work and at the same time cause some work cannot be completed within the stipulated period. "

ii) Question 2: In your opinion, how much time do you exactly need in completing all the project or task designs (taking into account the design quality).? Please justify by the category of the projects (small/medium/large).

In the construction consultants sector, projects that need to be design is divided into several categories, whether small, medium and large. The scope of the design is also different; there are small projects that require specialized skills and high expertise that require considerable time to complete. In fact, there are also projects that are categorized as large-scale projects but the time needed for the design provides is short in view of the scope of the design is simple like low-rise residential projects.

From interviews conducted, six respondents (Respondent 2 Respondent 5, Respondent 6 Respondent 7 Respondents 9, and 14 respondents) gave an answer that is quite similar. In which they stated,

> *"Normally, for small-scale projects, the time required to complete the design work is for about one to two weeks. In contrast to medium scale projects in which the time required is quite long, between one to two months. As for large-scale projects, the time should be allocated for the completion of the entire project, including the work of the submission of plans to the related party is for two to four months."*

Moreover, according to Respondent 3 and Respondent 8, the time, period needed to complete all task or projects design are uncertainty, where it depends either on the type of projects, the problems that arise while designing the projects, methods and tools used during the designing process and how we handle others requirements or comments.

4.3.3 Objective 3: To determine other factors that influence to workload stress and effect job performance

Question has been formulated with the purpose to collect the data needed to determine other factors that might contribute to different workloads and workload pressures affect job performance.

i) Question 1: What challenges do you face in completing your task (design)? (eg. Deadlines, technical, technology breakdowns etc.)

Upon completion of a task or project, the architect-engineer will have to deal with some issues, especially those involving their design work and also slow down their work. Here are the views of the respondents to the challenges they have to face during the course of their work.

For the Respondent 1, Respondent 3, Respondent 4, Respondents 9 and Respondent 13, they said,

> *"The problem that arises in the setting up of work/projects is time constraints, the time allotted is too short and this creates stress among us. In the meantime, we are also difficult to coordinate the needs of the project due to lack of sufficient information, as well as diversity of opinion from various parties."*

Somehow, according to Respondent 8, Respondent 11, Respondent 14 and Respondent 15, they state that the common problems arise while completing their task, project design, are technical and technology issue.

According to Respondent 8, he said,

"In the process of completing the project design, I need to print out the drawing for final checking and at the same time, technical problems happened where printer was damaged or out of services. This cause delay in my work and consequently affected the submission date either to client or local authorities."

Thus, six of the respondent which are Respondent 2, Respondent 5, Respondent 6, Respondent 7, Respondent 10 and Respondent 12 have gave various answer for the question asked. The factors are, difficulty to retrieved the right data or information either from client or third parties or local authorities, lack of support from colleagues and the decision to determine which task or project need to complete first, priority list.

Respondent 10 said that.

"I face problems such as insufficient technical data/information, lack of support from other staff and have to allocate time for entertaining phone."

Meanwhile, Respondent 2 gives his answer in short,

"Difficulties to get required documents either from other consultant or third parties to complete the design process or local authorities submission approval."

CHAPTER 5

DISCUSSIONS, RECOMMENDATIONS AND CONCLUSSIONS

5.1 Introduction

This chapter summarizes the entire study, discuss on findings of the study, recommendations, direction for future research and the conclusion of the study.

5.2 Summary of findings

The concept of workload is not something new in the current context, it has become a subject of great interest for researchers and renewed concern for the organization. Addressing the cause of the workload may be a more appropriate strategy and will prevent repetitive stress is largely arising from work overload. The employer shall ensure that the appropriate workload per employee; this strategy has been shown to reduce and avoid stress.

The workloads borne by architects-engineers are different, either too much, too little or medium depend on the task/projects awarded or under taken by the company where they work. Thus, respondents stated that the current numbers of projects handled by his company are likely decline due to economy slowdown. However there are also respondents who indicated that despite of the economy slowdown but their workload has not reduced accordingly, they still need to handle the on-going project, which is still under construction, new projects, management task and sometimes task that are not related to their actual scope of work.

In most situations, architects-engineers must face and experience workload stress in their daily works. From the collected data, it can be explained that the workloads of the architect-engineer does not reduced even though in slowdown economy or the current projects undertaken by the company are in small numbers since they still have to spend some of their working hours in solving other arising problems from previous projects and the company itself.

Jaffe, Smith & Segal (2007), state that different context of professional also contributed to the existence of workplace stress among employees. By avoiding the fluctuations of extreme workload, occur from under-resourcing, can give good impression in the implementation of individual projects and the portfolio of firm's performance in terms of numbers projects can be completed by the firm, with a given amount of resources. In terms of projects, the findings from the data indicate that most respondent may continue to experience overload. When the architects-engineers handle fewer projects at the same time and manage complete them in short time, due to less rework, with less effort it also may led to the increasing number of uncompleted projects over time.

The study also further proved that the performance of an architect's-engineer will decline considerably over a maximum amount of workload. This could be because work overload causes a feeling of being burnt-out which in turn, can lead to stress (Chandrasekar, 2011). For an instance, task related stressor in project management can include task complexity, task completion pace, pressure to meet deadlines, and achieving high targets (Halkos, and Bousinakis, 2010).

In modern working environments todays, time pressure at work among architects-engineers cannot be avoiding. Working pressure is always exist in the process of completing the work in which they can keep workers alert, motivated them, the ability to learn and learning as well as to place reliance on existing resources as well as personal behavior. Therefore, when there is extreme pressure, it leads to a pressure called pressure.

From the data collected it can be stated that time pressure, different scale of projects, different requirement from client, procedure and standards that keep change in local authorities' side is the additional factor that contributes to workload stress among them. Accordingly, in certain time and situation they also need to make final decision on the spot at their own risk. This situation occurs especially when a variety of factors involved within the time of tasks or projects submission.

In some cases, the combination of work overload and deadlines make work more stressful. Although architects-engineers manage to meet their deadlines but sometimes with limited knowledge they successfully completed their task/project. Stress occurs when architects-engineers are pressured to complete projects prior to the deadline for completion. Most respondents strongly express that the pressure to meet deadlines was a cause of a stress. Pressure from the company to get the project completed on time and as well as pressure from clients constantly requesting information about progress. It can be concluded that most respondent indicated that the time given to complete task is quite limited since there are many scope needs to cover along the design process such as approval either from clients of local authorities.

Other factors also need to be considered as an important influence in work stress among architects-engineers such as technology. In practising consulting firms technology are often use by applying their basic architectural and engineering principles and technical skills in the firm to deliver a variety of projects. Often technology works under the direction of architect and engineers, but the technology is exceptional individuals can aspire to any level of responsibility in most architectural-engineering consulting firms.

Technology advances like-minded with the progress of work in which the interaction of work is to use e-mail as a whole, text and social media. Many can separate between work life and social life but also the pressure of this technology led to the architects-engineers found it extremely difficult for them to balance between work and social life. As well as one of the causes of failure to complete the work on time and create stress between them.

5.3 Discussion on research questions and research objectives

In term of the effect of workload stress to job performance, study has shown there are fluctuations in architects-engineers performance, where overload situation their performance are either increase or decrease depending on the complexity, scale and type of the task or projects that they undertake. There is also the belief that the working pressure comes from the stimulus, negative situations in the workplace. For example; working pressure is the workload experienced by workers. It may be because management, too many tasks, tasks that are not necessary, difficult to handle or do not have the support of teamwork.

The pressure of time and deadlines also has being discovered as the additional factor of work stress among architects-engineers. Study also discovered several factors that contribute to workload stress among architects-engineers such as technology, unexpected demand from clients and also the requirement of local authorities.

5.4 Contribution of the research

Workload pressure is part of life, therefore, further studies can be taken to formulate an effective program to reduce the pressure of work in which this study was inadequate. This study was limited to practising consultancy services firm in Kota Bharu only. Due to the time constraint to carry out this study, it is recommended that in the future, studies like this should be done with large coverage of respondent. For example, all practising consultancy services firm in Kelantan. However, studies could be carried out to give a useful pattern of stress among people who work in the construction industry.

According to the findings, the study reveals that there is a significant impact of stress on employee performance of the firm. It is also observed that most of the firms are there who are task oriented and try to accomplish the task on time but extensive stress can lead to dissatisfaction of employees towards achieving goals.

5.5 Recommendations

Nowadays workload stress has been identified as one of the challenges to be faced not only by employees but the firm itself need to play their role in responding to this problem. There are several steps can be taken in solving this workload stress faced by the architects-engineers such as;

5.5.1 Task management

Unmanageable workload was seen as a factor why architects-engineers do not have enough time to do their work well. In order to reduce workload stress, they need to organize their tasks or projects by prioritize the list of tasks or projects. Once the list was made, architects-engineers should accomplished the high-priority tasks or projects first and if there are something occur in between of the tasks or projects, they need to solve it first before continued.

Secondly, breaking the tasks or projects into small steps also a wise step in reduce workload pressure but if there are complicated large tasks or projects, a step-by-step plan need to be done which manage them a step at once than settled everything in the same time.

5.5.2 Time management

Overtime and the requirement to work over weekend also contribute to workload stress since the time given for completing a tasks or projects is limited. However, by creating a balance schedule, analyse the schedule and daily task can help them in organizing their time frame. Trying to do too many tasks or projects or back-to-back scheduling in one day also the factor why architects-engineers cannot manage their time wisely. So, they must avoid this situation and should understand how to differentiate between should and must by list out the unimportant tasks or just eliminate them.

5.5.3 Employer role

Sometimes, architects-engineers cannot reduce the workload stress by themselves, so employer should also play their role in reduce workload stress. First, employer must clearly define the scope of work of their architects-engineers. Architects-engineers should be given an opportunity to participate in decision making and actions that involved their scope of works. Improving the internal communications by social interaction also helps to reduce the workload stress where architects-engineer can directly address or discuss the root of their workload stress.

5.6 Conclusion

Relationship between workload and performance and time pressure is quite complex. In some cases, when workload increase, the performances also increases and supported by Nachreiner (1995), in his study where he state that performance can be affected by workload being too high or too low. Positively, workload is an opportunity for the architects-engineers in learning properly and quickly. For example, when the architects-engineers involved in new tasks or projects with new technology or software needed, at the same time they will gain more experiences. In addition, workload stress can also lead to high productivity when the tasks or projects were done by the architects-engineers who have the technical capabilities enjoy workload. Hence, employers also must take serious regarding this issue in develop the control ability among their employees in managing level of stress which consequently affect the job and firm performance.

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