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THE IMPACT OF SHORTAGE SKIILED WORKER ON CONTRACTOR IN MALAYSIA CONSTRUCTION INDUSTRY

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THE IMPACT OF SHORTAGE SKILLED WORKER ON CONTRACTOR IN MALAYSIA CONSTRUCTION INDUSTRY

TEE TING SHENG

A thesis submitted in
fulfillment of the requirement of the award of the
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Faculty of Technology Management and Business

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I hereby declare that the work in this study is my own except for quotations and summaries which have been duly acknowledged

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DEDICATION

With deepest gratitude and warmest affection, this thesis is dedicated to my family whose love, encourage and pray of days and nights make me able to get such success and honor.

This thesis is also dedicated to PROF. MADYA. GOH KAI CHEN, without his early inspiration, coaching and enthusiasm none of this would have happened.

Finally, this thesis is dedicated to those who believes in the richness of learning

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Thank You

ABSTRACT

The skill shortage among workers is not a new issue in construction industry. Skilled workers are commonly been employ in construction sites. Skilled worker are been classified in order to identify productivity worker in respectively. This paper aim's is identify the effect of shortage of skill workers when shortages happen in construction phase, and study ways to overcome shortage of skills workers in the construction phase. The effect of skill shortage workers are project delay, labor productivity, employee motivation, and safety and health. Alternatives such as organizing technical skill training class, communication tools, foreign workers, building information modelling software device in constructions are developed to encounter the skill shortage problem. This research involves several parties: the contractors, site supervisor, project manager and engineer. These respondents were chosen as they are the main parties who involved in the construction sites. Questionnaires delivered to contractors, site supervisors and project managers as well as engineers. The research is done quantitative by using sampling and population among the respondent in order to get data analysis in this research. The result shows there is some of using alternatives to solve skill shortage problem and there also some suggested by respondents which is given their personnel ideas or opinion to solve this problem. There are some effects of skill shortage problem, and also have several ways to resolve especially it affect workers productivity. In conclusion, both objectives of the research had been achieved.

ABSTRAK

Kekurangan kemahiran di kalangan pekerja bukan suatu isu baru dalam industri pembinaan. Pekerja mahir biasanya bekerja di tapak pembinaan. Pekerja mahir diklasifikasikan untuk mengenal pasti pekerja mencapai produktiviti masing-masing. Matlamat kertas ini adalah utnuk mengenal pasti kesan kekurangan pekerja kemahiran apabila kekurangan berlaku dalam fasa pembinaan, dan mempelajari cara untuk mengatasi kekurangan pekerja kemahiran dalam fasa pembinaan. Kesan pekerja kekurangan kemahiran adalah kelewatan projek, produktiviti buruh, motivasi pekerja, serta keselamatan dan kesihatan. Alternatif seperti menganjurkan kelas latihan kemahiran teknikal, alat komunikasi, pekerja asing, membina peranti perisian pemodelan maklumat dalam pembinaan supaya dibangunkan untuk menghadapi masalah kekurangan kemahiran. Penyelidikan ini melibatkan beberapa pihak, seperti kontraktor, penyelia tapak, pengurus projek dan jurutera. Responden ini dipilih kerana mereka adalah pihak utama yang terlibat dalam tapak pembinaan. Soal selidik dihantar kepada kontraktor, penyelia tapak dan pengurus projek serta jurutera. Kajian ini dilakukan secara kuantitatif dengan menggunakan sampel dan populasi di kalangan responden untuk mendapatkan analisis data dalam kajian ini. Hasilnya menunjukkan terdapat beberapa alternatif yang digunakan untuk menyelesaikan masalah kekurangan kemahiran dan ada juga yang disarankan oleh responden dengan memberi idea atau pendapat kakitangan mereka untuk menyelesaikan masalah ini. Terdapat beberapa kesan masalah kekurangan kemahiran, dan juga mempunyai beberapa cara untuk menyelesaikan terutamanya ia mempengaruhi produktiviti pekerja. Sebagai kesimpulan, kedua-dua objektif dalam penyelidikan telah dicapai.

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LIST OF SYMBOL & ABBREVIATION

SD	-	Standard Deviation
CIDB	-	Construction Industry Development Board
UTHM	-	University Tun Hussein Onn Malaysia
GDP	-	Gross Domestic Product
MBAM	-	Master Builders Association Malaysia
ILO	-	International labor organization
AACE	-	American Association of Cost Engineers
SKK	-	Skills Proficiency Certificate
ABM	-	Construction Academy of Malaysia
CAD	-	Computer Aided Design
BIM	-	Building Information Modelling
ISO	-	International Organization for Standardization
TQM	-	Total Quality Management
SPSS	-	Statistical Package for Social Science
OHSA	-	Occupational Safety and Health Administration
JKR	-	Malaysia Public Works Department or *Jabatan Kerja Raya Malaysia*

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CHAPTER 1

INTRODUCTION

1.1 Introduction

In Malaysia, construction industry was considered to be a major productive industry. For instance in 2014, this industry accounts around 3.9% of the Malaysia's aggregate Gross Domestic Product (GDP) (Malaysia Productivity Corporation, 2015). The aggregate estimation of development work done in the second quarter 2014 recorded a twofold digit development of 10.8% year-on-year to RM25.2 billion (Department of Statistics Malaysia, 2014). These improvements have conveyed critical effects to the Malaysia's economy and furthermore brought about different ramifications particularly to the earth and social part of the nation. This industry occupies the focal position in the economic development (Oseghale et al., 2015) and has created a lot of occupations opportunities to boost up the country’s economy. In order to carry out construction projects, labours are one among critical key component and critical elements in successive of production mission control. They are numerous of construction mission have been failed and unsuccessful due to the labour component. Windapo (2016) emphasizes where projects failures happen due to insufficient of skilful worker.

1.2 Background of Study

Nowadays, construction skilled shortage workers have become a worldwide issue. It also becomes the greatest challenge facing Malaysian construction industry. Besides that, participation by local workforce is not encouraged and there understood that skilled workers

are produced from vocational training were not meet industry needs. Some of them choose to left construction sector after training from construction training institutions. In addition, Malaysia construction has faced the problems to get the source of labour as well as retained skilled people and has to depend on the foreign worker in order to fulfill the high demand of skilled workers due to rapid development in Malaysia and poor participation from local people (Faizul Azli Mohd-Rahim et al, 2016). Malaysia healthy economic situation had provided job opportunity to foreign workers. According to Hamid & Singh (2011), 20% of the jobs are being occupied by foreign workers. As of May 2011, Malaysia has approximately 1.9 million foreign workers. Construction industry made up 19% of it. The construction industry also one of the most dangerous industry in Malaysia that have a high rate of the accident. The lack of labour in this industry needs to be taken seriously because it can affect the productivity of the construction projects (Hamid & Singh, 2011b).

A productive economy needs skilled workers to produce quality services. According to the past research by Faizul Azli Mohd-Rahim et al (2016), state that the construction industry environment is influenced by the availability and sustainability of skilled and productive workers because it is a labour-intensive industry that relies heavily on human capital. Thus, every person employed in the construction process makes a direct contribution not only to the community but also to the nation at large. The shortage of workers in the construction industry will give negative impact towards the country development.

1.3 Problem Statement

Skilled labour shortage happened worldwide including United States, United Kingdom, Canada, India, Bahamas and Malaysia. Secretary General of Master Builders Association Malaysia (MBAM) Ir. Yap Yoke Keong (2009) said that Malaysia starting to face shortage of quality people in construction especially when 9th Malaysia Plan was introduced in 2006, there are many development projects poured in the construction market but skilled workers are not enough to fill the vacancies in the industry. This shortage problem continued until now. Construction boom happened worldwide especially in Singapore and Middle East which they offer better packages encourage people to work overseas. Besides that, government and business organisation of Canada recommended immigration of skilled worker as a strategy to deal with shortage issue. One of the research by SBA Zaki, SF Mohamed, ZM Yusof (2012), showed that it may solve shortage problem in a short time, but it still does not solve the

problem. Meanwhile, in Alaska Business Monthly mentioned that the biggest challenge was when they need to replace retiring workers. In 2008, they need around 1,000 replacements but recruiting source is limited.

According to Bank Negara Malaysia Annual Report, Malaysian construction sector grew by 5.2 percent in 2010. The country was suffers from shortage of skilled workers, weak productivity growth, lack of creativity and innovation in the workforce as well as over-reliance on unskilled and low-wage migrant workers. In 2010, total registered foreign workers in Malaysia are 1.8 million workers. Foreign workers accounted for 15.5 percent of employment in Malaysia in 2010 and were mainly employed in the manufacturing, construction and agriculture sectors. A report from Secretariat of Ministry of Home Affairs in 2011 says that in 2011 until July, there were 6,233 foreign workers registered to work in the construction industry, which is about 2.2 percent of total foreign workers in the country.

Besides that, they are several factors that may contribute to the shortage of local skilled worker are low assuredness of salary, poor career path, poor image of the industry and working environment as well as education level.

According to Construction Industry Development Board (CIDB), indicates that a smaller labour force of the contractor does not necessarily mean that the performance would be badly affected. Neither does the diversity of the labour force in terms of cultural background, tribe or business objectives tend to result in poor performance of a contractor. This research aims to discover the effect of the shortage of skill during the construction phase and how to resolve the problem.

1.4 Research Question

a. What are the effects of the shortage of skilled workers when shortages happen in construction phase?
b. What are the ways to deal with shortages of skilled workers in the construction phase?

1.5 Research Objective

a. To determined the effects of shortage of skilled workers during the construction phase.

b. To identify the ways to overcome shortage of skilled workers in the construction phase.

1.6 Research Scope

The location for this research is in the state of Johor Bahru, Johor Malaysia. Johor was chosen because Johor consists of many contractors. Johor is a city with wide a range of public transport which provided it easier for transportation from one place to another place. According to Construction Industry Development Board (CIDB), there is total of 260 G7 contractors registered under building construction in Johor state. For example in a report produced by CIDB shows that on July 2013, there are 23 new construction projects located in Batu Pahat. Respondents for the survey are registered engineer, site manager, project manager, and contractor. It is also based on the availability and cooperation given by the respondents. The research will focus on the shortage of skilled workers in construction industry only.

1.7 Methodology

The methods of data collection used are:

a. Questionnaire forms

   Question forms are a set of questions that contain open ended(opinions) and close ended questions(yes or no questions), the purpose of question forms used are to standardize the questions used to ask all of the respondents.

Methods of interpretation of data used are:

a. Quantitative analysis

   Data are analysed quantitatively by distributed the questionnaire to all respondent and data collection will interpret into graphical or figure and some past research and other resources such as labour workforce policy.

1.8 Expected Results

This study is important to alert contractors about the shortage skilled worker problem in construction sites. Although this problem had occurred long time ago but contractors does not take any effort to resolve the problem. Through this research, contractors can understand how shortage skilled worker are more crucial in construction site process. Thus, contractors can

come out with solutions to solve the shortage skilled worker problem in construction sites such as having a skilled worker it improve the productivity and reduced accident at construction sites. A few of cause, impact and alternative way will be identified throughout this study.

Besides that, have identified the effects of delays due to lack of skills on the project and the outcomes of the factors caused by the shortage skills in a construction project, the study will further consider purposes and various alternative to overcome lack of skills on construction projects during the construction phase. This study further reviews the organizational behaviour concept in this study. These include perception, leadership, culture, communication and motivation.

1.9 Thesis Layout

There are five chapters included in this thesis. The content of each chapter are as followed:

a) Chapter 1 gives an introduction and overview of the research conducted. It explains about the research background, problem statement, research objectives, the scope of the study, research methodology and expected results.

b) Chapter 2 is literature review made by studying various available materials about the title for research. It consists of information from the previous study made which explain about the cause, impact of shortage skill during the construction phase and how to resolve the problem in construction industry. This chapter further reviews the organizational behavioural concept linked to this study. These include leadership, culture, communication and motivation.

c) Chapter 3 explains the methodology of research on methods to implement the study began from the early stages until the end of the study. This chapter included the methods used to analyze the data obtained from respondents.

d) Chapter 4 is the section for data analysis and displays the results of the analysis. In this chapter explain and discuss issues about the effect of skill shortage worker during the construction phase and how to resolve the problem.

e) Chapter 5 explains the conclusions established based on the analysis data. It shows whether the objectives of the research are been achieved or not. In addition, the limitations of the study and recommendations are also discussed in this chapter.

1.10 Conclusion

Skilled worker as one of the most important workforce labour in construction sites has been overlooked by many parties. Through the preparation work before this research started, the information or resource that can get from various sources like Google Scholar, UTHM's library websites and much more are very limited. This proven that the issues have been neglected by most of the researchers and contractors themselves.

For conclusion, this chapter is basically set up the objectives and to clarify the problem statement for this research. The process of the whole research also been planned. Though this research hopefully can let most of the parties involved in construction activities can have deeper understand about this problem and finding a better solution.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The construction industry is an important player in the economy of Malaysia. According to construction industry development board in 2017, the construction sector is expected to grow by eight percent to RM170 billion due to the numerous project such as Refinery and Petrochemical Integrated Development project in Johor, Mass Rapid Transit Two in the Klang Valley and the Pan Borneo Highway connecting Sabah and Sarawak would continue demand in this sector.

On the other hand, the construction industry development board (CIDB) chief executive Datuk Ahmad Asri Abdul Hamid has mentioned construction industry achieved an astounding average growth of 11 percent during the 10th Malaysia Plan, while surpassing the performance of other economic sectors in the country. It is also estimated that only 29.1 percent or RM48.5 million of the projects in 2016 were by the public sector, while 70.9 percent or RM117.9 billion came from the private sector.

Besides that in terms of construction volume, the value increased from RM140 billion involving 7455 projects in 2015 to RM166.4 billion for 6305 projects in 2016.In order to understand how skilled worker can help in the construction industry, empirical studies have been conducted to explain the several strategies that exist a long time ago in the construction industry which has yet to be solved. Lastly there will be an explanation about the result of the impacts of shortage of skilled workers and the alternatives to solve the problems.

2.2 Definition of skill

A skill as defined the ability that carries out the task within the given amount of time, energy or both. Besides that, the skills often been divided into general and specific skills. For example, some general skills would include time management, teamwork and leadership, self-motivation and others, whereas specific skills would be useful for a certain job. Usually skill are required for certain environmental to stimuli and other situations in order to assess the level of skill being practice and used (Chell, 2013) . Skills are not the same as abilities. The exercise of skill will produces proficiency at tasks, whereas abilities are more tend to general traits.

However, it is clearer to separate the two things such that ability refers to an aptitude that influences a person whereas skill acquisition to perform a particular task, for example musical aptitude or ability to manipulate numbers, while skill refers to proficiency in performance and may be enhanced by practice and training. Therefore, the awareness and the skill should be conquered first in other to promote in further of development of skills (Rothwell, 2015).

2.3 Theoretical perspective on worker skill in construction industry

According to a research by Hamid & Singh (2011), perspective on worker skill can be divided into three phases which in skill, semi-skilled, and unskilled. The construction sector in the future will require a lot of supply in worker skill to support its economic growth. A slow process of mechanization and reluctance local to work in construction due to the working condition and low pay promises that lead to the shortage of worker skill in construction. It undoubtedly will affect productivity and progress of construction project(Kadir, Lee, Jaafar, Sapuan, & Ali, 2005). Furthermore, the effect of recruiting and employing foreign labours skill will result in the outflow by local currency, the skills and knowledge the foreign workers obtain while working in the construction industry will be brought home to their country, the unemployment of the locals will increase and the socials ills caused by the foreign workers(Kumar, 2012). Besides that, the employees of may require higher education and professional training in keeping with strategic change in the value of construction activity.

2.4 Classification of worker skill

Research from Cheng & Wu (2013), it stated worker skill, accident rate, safety and health management have a close relationship to each other that mostly occur in the construction site. According to CIDB (Construction Industry Development Board of Malaysia), classification of worker skill can be divided into four phases which in terms of unskilled, semi-skill, and skilled worker. A skill is an ability to perform an activity in a competent manner. According to ("Three Types of Skills Classification," 2012), skills can be classified into three main types which are Transferable, Personal Traits, and Knowledge-based. In Malaysia construction industry, site supervisor will monitor or evaluate the worker skill based on their performance on the job.

2.4.1 Unskilled worker

According to research by (Linde & Barry, 2011), an unskilled employee is one who does operations that involve the performance of simple duties, which require the experience of little of no independent judgment or previous experience although familiarity with the occupational environment is necessary. He or she works may require in addition to physical exertion familiarity with a variety of articles or goods. This stage of unskilled labour is generally characterized by a lower educational attainment, such as a high school diploma, lack of general educational development and typically results in smaller wages.

Therefore, in construction work for no specific education level or specialized experience is often available to the unskilled labour force. Hence, the unskilled workers also can benefit from the changes in the demand for skills if they receive additional training, because unskilled workers may lack the skills necessary for more knowledge on intensive jobs. Moreover, the unskilled workers may able to improve their employability through further investment in the human capital (De Grip& Zwick,2005)