

CONSTRUCTION WORKFORCE REQUIREMENT IN ISKANDAR MALAYSI

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A thesis submitted in fulfillment of the  
requirements for the award of the degree of  
Master of Science (Quantity Surveying)

Faculty of Built Environment  
Universiti Teknologi Malaysia

FEBRUARY 2012

## Abstract

Workforce is an important asset in any developing countries. The same situation applies to Malaysia particularly in the construction sector. Increased construction activities due to the simultaneous launching of the country's five economic regions has led to an increasing demand for construction workforce. This study aims to investigate the capability of the nation in providing adequate construction skilled workers to fulfill the demands placed upon the construction industry. The scope of this study is Iskandar Malaysia development region. The survey and interview techniques were adopted for data collection. In obtaining information on the demand and supply of workforce, interviews were carried out with the stakeholders of Iskandar Malaysia, contractors and administrators of the Public Training Institution (PTI). The survey seeks to identify the factors contributing to the gaps between the demand and supply of construction workforce. Respondents for the survey include trainees on construction related courses at the various Public Training Institution. Analysis of the data collected indicated that the supply of construction workforce in the state is 270 people per year. The analysis also demonstrated that the amount of workforce needed in completing 1m<sup>2</sup> of work is 0.0743 people, including both skilled and unskilled workforce. Hence, the amount of workforce needed in completing 3,045,107.730 m<sup>2</sup> of work for Nusajaya area in Iskandar Malaysia development is 226,252 people. Based on the current ratio between trained trade workers and general workers, the number of trained trade workers needed to complete the development of Nusajaya area in Iskandar Malaysia is 203, 627 people. This shows that there is a huge gap between the demand and supply of workforce in Johor. The enrolment of trainees in the construction related courses are inconsistent and has declined from year to year. The contributing factors to the demand and supply gap include the negative perceptions on the career prospect in construction, lack of information on construction related courses and lack of support from the industry in providing training facilities.

## Abstrak

Tenaga kerja merupakan asset yang penting bagi sesebuah negara yang sedang membangun termasuk Malaysia terutamanya di dalam sektor pembinaan. Peningkatan aktiviti pembinaan hasil daripada perlancaran serentak lima wilayah ekonomi negara telah menyebabkan permintaan terhadap tenaga kerja di dalam industri pembinaan meningkat secara mendadak. Kajian ini bermatlamat untuk mengenalpasti kemampuan negara menyediakan tenaga kerja mahir industri pembinaan di dalam memenuhi permintaan keatasnya. Sko kajian ini adalah Wilayah Pembangunan Iskandar Malaysia. Kaedah soal selidik dan temubual digunakan sebagai kaedah pengumpulan data. Temubual untuk mendapatkan maklumat berkaitan permintaan dan penawaran tenaga kerja telah diadakan bersama pemegang saham Iskandar Malaysia, kontraktor dan pentadbir Institut Latihan Kemahiran Awam. Soal selidik pula digunakan untuk mengenalpasti faktor-faktor penyebab kepada jurang di antara permintaan dan penawaran tenaga kerja pembinaan. Responden soal selidik ialah pelatih Institut Latihan Kemahiran Awam yang mengikuti kursus berkaitan pembinaan. Hasil analisis menunjukkan bahawa keupayaan semasa negeri Johor dalam menyediakan tenaga kerja adalah seramai 270 orang setiap tahun. Analisis juga menunjukkan jumlah tenaga kerja yang diperlukan untuk menyiapkan 1 m<sup>2</sup> kerja adalah 0.0743 orang iaitu merangkumi tenaga kerja mahir dan tidak mahir. Oleh itu, jumlah pekerja yang diperlukan untuk menyiapkan 3,045,107.730 m<sup>2</sup> kerja di Nusajaya, Iskandar Malaysia adalah 226,252 orang. Berdasarkan nisbah di antara pekerja mahir terlatih dan pekerja am, jumlah pekerja mahir terlatih yang diperlukan untuk menyiapkan kerja di Nusajaya, Iskandar Malaysia adalah 203, 627 orang. Ini menunjukkan terdapat jurang yang besar di antara permintaan dan penawaran tenaga kerja. Faktor yang mempengaruhi wujudnya jurang di antara permintaan dan penawaran tenaga kerja mahir termasuklah pandangan negatif terhadap prospek kerjaya di dalam bidang pembinaan, kurang pendedahan dan maklumat berkaitan kerjaya dan kursus pembinaan serta kurang sokongan daripada industri untuk menyediakan kemudahan latihan.

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**LIST OF ABBREVIATIONS**

ABM	-	Akademi Binaan Malaysia
CIDB	-	Construction Industry Development Board
ECER	-	East Coast Economic Region
FDI	-	Foreign Direct Investment
GDP	-	Gross Domestic Product
GFA	-	Gross Floor Area
IDR	-	Iskandar Development Region
KKBN	.-	Kolej Kemahiran Belia Negara
NCER	-	Northern Corridor Economic Region
NCS	-	National Certification Standard
NDP	-	National Development Policy
NDTS	-	National Dual Training System
NEM	-	New Economic Model
NEP	-	National Economic Policy
NOSS	-	National Occupational Skill Standard
NVP	-	National Vision Policy
PTI	-	Public Training Institute
SCORE	-	Sarawak Renewable Energy
SDC	-	Sabah Development Corridor
SDT	-	Skill Development and Training

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

Retracing Malaysia's development from 1970, Malaysia has grown up with the development strategy based on three long-term policies; the New Economic Policy (NEP), 1970-1990, the National Development Policy (NDP), 1990-2000, and the National Vision Policy (NVP), 2001-2010. The emphasis in these long-term development policies has always been on economic growth. Additionally, development of Malaysia intends to benefit all groups or communities in the society in an equitable manner. In line with the prominent objective, the main purpose of the establishment of these three long-term policies is to preserve national unity by eradicating poverty irrespective of race and restructuring Malaysian society to reduce the identification of race with economic function and geographical location (Yusof and Bhatassali, 2008).

In the early phase of Malaysia's industrialization, the adoption of open policies in trade and investment appeared more favourable for Malaysia. However, as the open policy became more common around the world, globalization led to more intense international competition. Malaysia was being trapped in the middle income category and was no longer able to compete with other low-cost producing countries. In this phase, the public operating expenses and capital investment for infrastructure development had been financed mostly by the wealth of natural resources. However, these resources are finite and would deplete. Being trapped in the middle income country had led Malaysia to the difficulty in starting businesses, enforcing contract, dealing with the construction permit, sluggish bureaucracy and so on. These difficulties are no longer fit the purpose in a fast-moving world. The historical advantage of exporting low value added electronics, drawing on the availability of low wage, unskilled labour had locked Malaysia into a low level vicious circle of competition based on cost alone. It is now slowing the Malaysian's progress up the value chain to more sustainable, higher value, more advanced technological levels of industrial production (The Prime Minister Office, 2010).

A report by Human Development Sectors (2007) stated that the Malaysian economy has recorded several remarkable progresses since the past two or three decades. Per capita income, economic growth and export have risen dramatically; poverty has been reduced, competitiveness has increased, and literacy rates and other millennium development goal indicators have all improved noticeably. Much of the growth and expansion of the export is fuelled by large Foreign Direct Investment (FDI) inflows. However, being similar to Mexico and Mauritius, the Malaysian growth model is in danger of slowly running out of steam. This is due to the reason that Malaysia has prospered during the last 20 years as an established country. Malaysia has a successful production-based economy in which competitiveness was based primarily on mass production, low cost manufacturing efficiency, relatively unskilled labour and low wages. Malaysia's global competitiveness rose significantly during this period as a result of this outward-oriented growth strategy. World Bank (1987) defined outward-oriented growth strategy as the one in which trade and industrial policies do not discriminate between production for domestic

market and exports nor between purchases of domestic good and foreign goods. This is due to the reason that it does not discourage international trade. This non-discriminatory strategy is often referred to as an export promotion strategy. Nevertheless, other countries with lower wages and greater FDI inflows, are entering the global economy. Due to the respective circumstance, it erodes Malaysia's former competitive advantage. Ironically, the development model used in the past managed to change the status of Malaysia, from low income country to middle income country. However, the use of the same model for future progress in achieving the Vision 2020 is no longer suitable.

In 1991, Malaysia expressed determination to achieve Vision 2020; which is to become a developed nation on its own by the year 2020. This is to be achieved by maintaining a growth rate at 7 percent a year and by making changes in the economic structure as well as in manufacturing. An important aspect in achieving Vision 2020 is the emphasis on the development of knowledge-based economy, which is the foundation to sustain rapid rate for economic growth and to improve international competitiveness. Achieving Vision 2020 also requires a continuous transformation that has been instituted since independence. The process involves the transformation of the agricultural-based to industrial-based economy. Besides that, it also involves changes in the technology, economic, social and cultural sectors. Society in a developed nation is a society whose members are well-equipped with skills and expertise of science and high technology. The country transformation from the agricultural-based economy to industrialization has created the environment for the development of the construction industry. The construction industry has played an important role in establishing the infrastructure required for socioeconomic development and contributing directly to economic growth. This will increase the demand for workforce in construction.

Currently, Malaysia is on the verge of implementing 10th Malaysia Plan that will set a phase for a major national structural transformation as a country with high-income economy. The high income economy will hinge on higher productivity and the engagement of the private sector participation which will be a primary driver of



growth and innovation (Shaziman, 2010). The global financial crisis has subsided in which the economy of Malaysia is now recovering, improving and getting firmer. Robust economic growth has been achieved with the growth of Gross Domestic Product (GDP) in the first quarter of 2010 with 10.1% which is the highest rate in 10 years. However, the challenge in achieving high-income economy status by the year 2020 is to sustain the momentum of vigorous growth. In order to achieve Vision 2020, the GDP growth of 6.0% per year is needed especially in 10th Malaysia Plan. RMK-10 is prepared by charting the course of development of the nation s achieving Vision 2020.

Economic development process requires many components including land, labour, capital and technology. Each component has its own importance and it could not be ignored. Hence, all components should be combined with prudence to produce a balanced and quality growth. In Malaysia's economic context, the importance of contribution of each growth factor has changed gradually in accordance with the level of development achieved. For example, the land factor becomes less important when Malaysia is experiencing transformation of economic structure from agriculture to industrial sector. However, factors of skilled labour availability, technology and innovation have become increasingly important to economic growth (Rahmah, 2000).

Okposin *et al.* (1999) pointed out that the growth of economy can be hampered by two major factors; the ability to increase the resources and the application of the appropriate technology. Resources in this context include labour, capital and natural resources. These production factors or resources can be improved in various ways. For example, appropriate education and training are essential to increase the desired number of skilled and semi-skilled workers. In addition to that, by applying the appropriate technology, the resources could be used more efficiently. Research and development (R&D) shows that, through past experience, the formation of an appropriate technology will increase the production efficiency. A rigorous educational planning and training program should be undertaken to develop a skilled and trained labour force. In the United Nation's 2010 Human Development

Index, Malaysia was classified as a country with high human development, ranking at 57<sup>th</sup> out of 169 countries (Asian Development Bank, 2010).

Human capital or workforce is very important to support and ensure the economic growth and development of a country. In order to enable a country to achieve this goal, there are two important issues that need attention. First, the need for adequate supply of workforce and the second one is the quality of the workforce to ensure the efficiency of its use (Ishak and Mohd Yusof, 2003). The importance of the quality human capital has been proven. History has shown that the strength of a country depends on the quality of its people. Industrial countries such as Japan, Switzerland and South Korea have brought transformation and achieved higher economic growth resulting from the quality of their human capital although the countries themselves do not have natural resources.

Considering the closed relationship between the quality of human resources and technology development, the effort the establishment of detailed manpower planning is vital. It can help in developing strategies to overcome the shortage or excess of manpower in certain areas. Human resource development strategy also needs to be improved since it will involve a set of planned manpower requirement, create programmes to promote formal education and training programmes to enhance employee training (Anuwar *et al.*, 2006).

Human capital development is an important issue that is often discussed, especially in the new millennium. The discussion does not only take place at the macro level but also at the micro level. This shows that most of the countries are aware and conform to the requirements and development of human capital in the era of globalization and there is no exception to the countries in Southeast Asia including Malaysia. Malaysia's progress and development of technology has changed the pattern of the current workforce. The ability to maintain the productivity and competitiveness in the international arena is the key factor for economic and industrial growth in Malaysia. The competitiveness and industrial

productivity will be positively affected by the highly motivated, skilled and educated workforce. Therefore, future generation should be exposed to sufficient information as to produce skilled and educated human resources as well as technology in order to achieve the goal of Vision 2020. In order to produce a skilled workforce, the training will be enhanced by increasing the number of public training institutions, adding further courses in technical fields, strengthening the system of standards and quality of technical education and encouraging private sector's participation in this exercise. Intake of technical trainees shall be twice increased through the implementation of the National Dual Training System (NDTS). This program was launched in July 2005 to ensure the provision of training is in line with the industry's needs. Technical curriculum is also enhanced through the cooperation and input from the industry (Zulkifly and Ishak Yussof, 2009).

Based on the Annual Report of Department of Skill Development (2009), development of occupational analysis had been evaluated. The objective of occupational analysis was to examine the skilled human resource competency that is a prerequisite for labour-related industries. Attention was given to ten (10) industrial sectors. These industrial sectors are Agriculture & Agro Based Industry, Health and Pharmaceutical Manufacturing / Support Services Sector, Material Manufacturing – Non Metal Sector, Building Construction Industry, Mining Industry, Tourism and Hospitality Sector, Production Industry, Welding Industry, Electrical and Electronic Industry and Mechatronic Industry. A total of 1051 job titles were identified among ten (10) fields in which 350 job titles were categorized as critical job titles and should be given priority in National Occupational Skills Standards (NOSS) development to meet the needs of the industry. Out of the 350 of the critical jobs, 54 of these jobs were derived from the construction industry.

Although there are many human capital development programmes undertaken by the government and certain private bodies, the labour shortage yet remains. To address this, Malaysia has to rely on foreign workers, particularly in areas such as agriculture, manufacturing and construction. Before independence, Malaysia had a population of just 7.4 million. The population has since grown

rapidly. By 2005, the country had approximately 26.8 million people and, on current estimation, will rise by 2011 to nearly 29 million, 28,728,607 people (the World Factbook). Apart from natural increase, population growth reflects a steady influx of immigrant labour, primarily from Indonesia, the Philippines, Bangladesh, and Nepal (Yusof and Bhattasali, 2008). According to the CIDB (2009), it is estimated that 2.11 million of foreign workers are employed in various sectors, representing 18.3% of the total workforce. In construction sectors, there are about 312,573 foreign workers. This number makes up 41.2% out of the total number of workforce in construction.

The employment of foreign workers in the construction industry is due to several factors. One of the factors is the inability of the local manpower to fill the demand. Chandranayagam (2009) observed that the inability of the local manpower is due to the reason which is they do not want to take up the *three \*D job* which means dirty, dangerous and difficult work. Additionally, the increasing need of workers and unreliability of some Malaysian workers in terms of punctuality or not turning up early for the job have contributed to the cause of the employment of foreign workers. CIDB (2009) also stated that the local citizens are not interested in involving themselves in construction sectors due to the unattractive payment structure and service terms that do not guarantee job security. However, the total employment of foreign labour in the construction sector decreased in line with government's objectives to reduce reliance on unskilled foreign workers. The number of the foreign workers in Malaysia's construction sectors in 2008 was approximately 312,900 and in 2009 the number decreased to 296,400 and subsequently, in 2010 the number went down to 288,000 (Department of Treasury, various years).

## 1.2 Background of Problems

Transformations in economic structures that contribute to the economy of this country contribute a great impact on the pattern of the country's development. From another point of view, the policy and socioeconomic development strategy have succeeded in raising the standard of living. Regional development which aims to bridge the economic disparity between regions plays an important role. Other than that, regional development will also improve the standard and quality of life in achieving social and economic development balance between regions and states. In regional development, efforts should be taken to reduce the gap in per capita and household income, poverty rates that are higher in less developed states and the gap in terms of infrastructure and utilities of the states in the peninsular and Sabah and Sarawak.

Based on the Economic Report 2010/2011 (2010), five growth corridors, namely Iskandar Malaysia, Northern Corridor Economic Region (NCER), Eastern economic region (ECER), Sabah Development Corridor (SDC) and Sarawak Corridor of Renewable Energy (SCORE) have been instituted in Nine Malaysia Plan (RMK-9). The five growth corridors work as a force in order to stimulate regional development as a balanced growth and they also narrow down the income gap. Besides that, the government has been investing in infrastructure, basic facilities, training and socio-economic projects. This is to ensure the success of the five areas of development and to facilitate private sector activities. From 181 projects that have been revised, 162 projects have been implemented, while 19 projects will be implemented. In 2010, RM 3.4 billion was allocated for the development of the five corridors. This is because strategic economic corridors are seen as new approaches by the government as these corridors offer the benefits of balanced economic development as well as to reduce pressure on areas with existing economic growth (Zulkifly and Ishak Yussof, 2009). Johor is chosen by the federal government to be the first of Malaysian state to launch one of the several new economic development corridors namely Iskandar Malaysia. This corridor foresees large area of Johor being

transformed into a giant business and industrial hub and eco tourism centre (World Bank, 2008).

Workforce is one of the most important assets in the construction industry other than machinery, capital, material and expertise. Manpower in the construction sector could be categorised into three main groups. They are general labour, semi-skilled labour and skilled labour. Despite of the fact that the needs for workforce are very important in the construction industry, the supply of local labour is limited. Thus, as stated before, Malaysia has to import foreign workers from neighbouring countries to meet the shortage of local workers. Nonetheless, the hired foreign workers are basically unskilled and they acquire their work knowledge while assisting the more experienced workers and this would not help to fulfil the industry's skill standards (CIDB, 2002). According to Third Industrial Master Plan 2006-2020 (IMP3), labour intensive industries will be encouraged to plan their human resource requirements to progressively reduce their dependence on low-skilled labour particularly the foreign worker.

According to the Deputy Prime Minister of Malaysia, Tan Sri Muhyiddin Yassin, it is estimated that 100,000 or 22% of Malaysian students choose to enter job market, after completing 11 years of schooling with only Sijil Pelajaran Malaysia (SPM) qualification, despite of the fact that various opportunities for adequate technical training and vocational skills are provided for them. He also pointed out that the percentage of skilled workers in Malaysia is only 25 per cent compared to 40 percent in Singapore and 33 percent in South Korea. Thus, to mend the state of affairs, society's negative impressions towards technical and vocational education should be amended. Hence, Malaysia would be able to produce human capital for the New Economic Model (NEM) (Berita Harian, 2010). This group of youngsters may tend to be more inclined as technical skill training which offers greater opportunities to improve their skills in technical field (The Prime Minister Office, 2010)

The importance of skilled labour could not be denied. Malaysia has to develop skill training institutions in order to meet the extensive demand for skilled labour. Therefore, Malaysia has developed the Master Plan for Training and Skills Development 2002-2020. The purpose of this plan is to produce approximately 5.45 million skilled workers by 2020. In order to achieve high income-based economy, competency and expertise should be increased so that knowledge and innovation can be nurtured. As a result, Malaysia would become a more competitive country, consequently producing a more conducive environment for successful economy. Human capital and skill development should be the focal point especially in the critical area of growth (Department of Skill Development, 2009).

One of the key thrusts of the RMK-9 is the emphasis on human resource development to produce a workforce that is skilled and knowledgeable, innovative, enriched with positive values, capable of facing global competition and being relevant of current needs of human resource. Accordingly, education and training systems must be strengthened in order to make it more responsive to meet the needs for economic development. The dynamic role of the agencies involved in the Skill Development and Training (SDT) is an important factor in producing a workforce that is skillful, knowledgeable and competitive. The most challenging task of the SDT is to produce a workforce that can meet the needs of the industry. Therefore, all parties involved such as relevant government agencies, training providers, industry associations, employers and the media should play their roles in bridging the mismatch between training providers and industry requirement (The Prime Minister Office, 2009).

Table 1.1 shows the total programmes according to the levels and industrial sectors which were approved by the Department of Skill Development in 2009 (Department of Skill Development, 2009). From the table, the number of vocational programmes approved under the building and construction sector is 228 programs. This shows that the respective sector is committed to develop skills by orchestrating various trainings in the sector of construction and other critical sectors.

**Table 1.1:** Total Programmes According to Level and Industrial Sectors.

No	Industrial Sectors	NCS	Level					Total
			1	2	3	4	5	
1.	Transportation	-	375	289	128	15	3	810
2.	Machinery & Manufacturing	-	259	305	174	37	14	789
3.	Electrical & electronic, telecommunication & broadcasting industries	-	317	265	123	16	3	724
4.	Hospitality & Tourism	-	200	204	84	6	0	464
5.	Medical & Pharmaceutical	-	163	192	55	0	0	494
6.	Mechanical & Electrical Service and Maintenance	-	135	88	43	5	0	282
7.	Textile & Apparel	-	140	108	25	2	0	275
8.	Information Technology & Communication (ICT)	6	0	109	93	38	6	252
9.	Building & Construction	-	107	81	39	1	0	228
10.	Agriculture & Agrobased	-	45	54	33	5	0	137
11.	Others	-	2	17	97	0	0	116
12.	Business Management	-	10	12	8	35	8	73
13.	Resource Based Industry	-	27	23	17	0	0	67
14.	Printing	-	25	22	6	1	0	54
15.	Educational & Training Services	-	0	0	49	0	0	49
16.	Educational & Training Services	-	0	0	49	0	0	49
17.	Packaging	-	6	6	4	0	0	16
18.	Souvenir & Small Enterprise	-	2	2	1	0	0	5
19.	Chemical	-	0	2	2	0	0	4
	Total	6	1813	1790	981	161	34	4785

- NCS = National Certification Standard

Source: Department of Skills Development (2009)



Meanwhile, Table 1.2 shows the estimated requirement of skilled human resource according to the sectors from 2006 until 2020 (Department of Skills Development, 2008). It could be seen that the need for the skilled human resources in construction and building sector are yearly increasing. This is the impact that is contributed by the planned development. However, the amounts stated in the table 1.2 are estimated roughly across the country and they don't differentiate between the skills, either trade skill, engineering and so on.

**Table 1.2:** Estimated requirement of skilled human resources in accordance with sectors.

No	Industrial Group	Estimated Supply / Demand for Human Capital				
		2006 – 2007	2008 – 2010	2011 – 2013	2014 – 2017	2018 - 2020
1.	Electrical and Electronic	30,000	45,000	67,500	87,750	105,300
2.	Packaging	-	1,000	10,000	25,000	62,500
3.	Landscape and environment	-	1,500	5,000	10,000	20,000
4.	Chemistry	-	1,000	5,000	15,000	30,000
5.	Banking, finance and insurance	270	3,240	4,860	12,150	24,300
6.	Machinery and Equipment	25,400	33,020	49,530	69,342	97,100
7.	Small Enterprise and Souvenirs	1,000	3,000	10,000	15,000	30,000
8.	Hospitality and Tourism	20,000	16,000	24,000	36,000	54,000
9.	Materials	2,000	9,000	22,500	38,250	60,000
10.	Mechanical and Electrical Service and Maintenance	20,000	26,000	33,800	47,320	61,500
11.	Communication and Information Technology	25,500	33,150	43,095	56,024	84,035
12.	Food Product and agro-based industry	-	5,000	20,000	60,000	90,000
13.	Biotechnology	-	5,000	15,000	30,000	55,000
14.	Textile and Apparel	10,000	20,000	30,000	35,000	50,000
15.	Design and interior decoration	-	10,000	20,000	30,000	45,000
16.	Printing	1,500	5,000	10,000	20,000	35,000
17.	Medical and Pharmaceutical	-	3,000	12,000	36,000	90,000
18.	Building and Construction	8,500	17,000	21,000	30,000	35,000
19.	Resource Based Industry	400	1,500	10,000	20,000	30,000
20.	Islamic Research	-	500	10,000	20,000	35,000
21.	Others	8,500	20,000	40,000	55,000	65,000
	Total	178,070	288,910	503,285	803,836	1,225,935
	Overall	3,000,036				

Source: Department of Skills Development (2008)

### 1.3 Problem Statement

The success of Iskandar Malaysia is depending on several factors. These factors are:

- i. The foreign investment
- ii. Crime and safety
- iii. Mega project property development
- iv. Government policy consistency
- v. Unequal treatment of foreign investor and local investor

Apart from the five factors mentioned above, other factors are also listed to ensure the success and excellent achievement in developing Iskandar Malaysia. Among them is the reduction of government and political intervention in the development processes and human resource development. Furthermore, there are many other factors that have been considered to ensure the plan development to succeed. However, it seems that the performance of the mega project has been put into a limelight, regardless the fact that human resource is highly needed in order to compete in the global economy (Pua, 2007).

Iskandar Malaysia is an important development programme since the government has invested a large amount of money in it. For this reason, a higher standard of living for citizens in terms of economic development, education and employment has been listed as an optimistic expectation. In order for the development of Iskandar Malaysia to succeed, participation and investment from foreign investors especially Singapore and China are greatly required. Thus, the government put efforts to attract foreign investors by drastically reducing crime, being more consistent in formulating and implementing policies, curb speculation in land prices, human capital development and retention. In addition, the government must draw their attention to the importance of human capital in economic growth and development of the country. In order to improve the quality of human resources,

serious consideration should be taken into account especially in creating a comprehensive and integrative plan. This respective plan which focuses on education development would be able to critically assess and examine the quality of Malaysian education institutions to achieve its objectives in Vision 2020.

The regional development plan has offered many job opportunities in various fields, especially in the construction industry. It has directly involved with the development of infrastructure in each region. Development undertaken should accomplish the prescribed standards and quality in line with the mission of Malaysia becoming a developed nation by the year 2020. This would lead to a high demand of workforce. Recruitment of foreign workers who are incompetent will affect the quality of the production of the planned development. Although at this time in the recruitment of foreign workers in the construction sector has decreased, the number of trained local workers entering the industry is limited. The increased number of projects will lead to high employment opportunities. This situation will allow the foreign workers to be employed in order to fill the demands of workforce in the industry. Consequently, due to this respective situation, the government's initiative to reduce the hiring of foreign workers would not be successful.

Therefore, it is important to develop a pool of skilled workers for the construction industry. An estimation of manpower needs in various sectors in Malaysia has been published in the Master Plan of Occupational Skill Development and Training Malaysia 2008 – 2020 (2008). However, the estimation does not differentiate between skilled manpower and professional manpower. Furthermore, the estimation only approximates the need for skilled workers throughout the country and did not distinguish between the corridors of development.

#### **1.4 Research Questions**

Based on the discussion of the background studies, three research questions are established as basic guides to the overall execution of the study. The research questions are as follow:

- a) What is the strength of Johor in providing skilled workers for Iskandar Malaysia?
- b) What is the estimated number of skilled workers that are required in the development of Iskandar Malaysia?
- c) Why does the gap between supply and demand of skilled manpower in Iskandar Malaysia exist?

#### **1.5 Research Objectives**

The aim of this research is to investigate whether Malaysia could provide enough skilled workers for construction industry consistently with the increasing number of the projects brought by the launching of the five economic regions simultaneously. In order to achieve this aim, the objectives for this research have been formulated. The objectives for this research are:

- a) To determine the strength of the state of Johor in providing construction skilled workers for Iskandar Malaysia.
- b) To identify the demand of skilled workforce for Iskandar Malaysia.
- c) To determine the cause of the existence of gap between demand and supply of skill workers.

## **1.6 Research Scope**

This respective research focuses on Iskandar Malaysia. In the duration given, it is impossible to address the whole spectrum of the development in Iskandar Malaysia. Therefore, this research would only concentrate on the number of workforce that would be required until 2015 in the area of Nusajaya and also the skill development programme in the Public Training Institute at Johor which focuses on the wet trade skill. Furthermore, this research would only cover the area of skilled workforce. There are several aspects that need to be considered in determining the demand of workforce in construction industry. However, this research only covers on the project size by using the gross floor area (GFA) and concentrating on the building type development.

Additionally, the scope of this study would focus on a few projects around Johor Bahru to determine the rate of workforce participation in the project. The information would be used as a catalyst in producing the total amount of workforces needed in the development of Iskandar Malaysia.

Skilled worker in this study denotes the most common trade worker categories which are bricklayer, plasterer, tile fixer, formwork fixer, bar bender, concreter, carpenter, scaffolding fixer, welder and so on. These trade workers obtain their skills through official training provided by the training institutes all around the country before entering the industry.

## **1.7 Significance of Study**

Workforce is an important asset in construction industry. Nurturing a quality workforce and promoting stable employment are often advocated as key components of the industrial strategy. This study will provide a clear indicator of the ability of the state of Johor in providing skilled construction workers to meet the increasing demand as the implication of development in the Iskandar region. This overview will also help the parties who are involved in the effort of producing skilled manpower in terms of reassessing their progress if it is necessary.

This study also provides an insight on the trainees who are being trained in the construction trade on the construction condition in few aspects. Besides, the factors that are influencing the trainee to be trained in construction trade will also be discussed.

Apart from that, the method used in this study could also be applied to the other economic regions to assess their ability in providing skilled manpower consistent with the increase in the number of projects.

## **1.8 Writing Organisation**

This thesis consists of five chapters and it is arranged in order of implementation of the study as follows:

Chapter 1: This chapter describes the introduction of the study, the background of problem, problem statement, research questions, research objectives, research significance, scope, methodology research and writing organizations.

Chapter 2: This chapter discusses the literature related to the study. It includes the development of skilled workforce, factors that influencing career choice among students and the scenarios in construction industry.

Chapter 3: This chapter describes the methodology of the study and the stages of the implementation in detail. The discussions in this chapter also include data sources, sampling, data collection instrument and analytical techniques used.

Chapter 4: This chapter discusses the findings of the study that were obtained from the questionnaires and structured interviews to discuss the three objectives of the study.

Chapter 5: This chapter discusses the findings and discussions on the study's objectives. Findings and discussion are presented in detail to ensure a successful implementation of the objectives of the study determined. This chapter also comprises proposal for further research and conclusion of the study.



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