

Negative Impact Induced by Foreign Workers: Evidence in Malaysian Construction Sector

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ABSTRACT

Though foreign workers served to overcome the labor shortage in the Malaysian construction market, over-dependence on foreign workers and the negative impacts induced have become a serious social problem. The aims of this research are to identify those negative impacts induced by foreign workers in the Malaysian construction market and to determine strategies in minimizing these negative impacts. Data were collected through a structured interview and survey. The questionnaires were delegated to professionals in construction projects who have direct contacts with foreign workers. Only respondents from those companies registered under the CIDB grade G7 were chosen for this survey. There were 117 sets of questionnaires completed and analyzed through the structured interviews. The three principal factors attracting foreign workers to the Malaysian construction market are “Preference of the employers”, “Lifestyle and working conditions”, and “Unattractiveness of the career pathway”. The main negative impacts induced by foreign workers are “Over-dependence on foreign workers”, “Increment in criminal activities or social problems”, and “Existence of illegal workers”. This research proposes that strategies such as “Attract local workers into the construction industry”, “Industrialized Building Systems”, “Eliminate illegal migration”, and “Improve governance structure” would be successful in minimizing negative impacts induced by foreign workers.

Keywords: foreign worker, illegal migration, negative impact, construction market, over-dependence on foreign works, imposed levy

Highlights

- We investigate the impact of foreign workers in the Malaysian construction industry.
- Strategies to reduce illegal workers are investigated.
- Industrialized Building Systems and Government Policies may play an important role.
- Both the government and the industry can influence factors that impact on illegal workers.

Introduction

The presence of foreign workers is one of the most critical issues facing the Malaysian construction market, as the increasingly popular ‘Wet Trade’ construction approach requires significant manpower. The Malaysian construction industry provides employment opportunities for 800,000 workers, representing 8% of the total workforce; 69% of these are foreign workers. The Malaysian government has relied on foreign workers since the 1980s, but there is not a comprehensive policy regarding recruitment and placement of foreign workers. However, legal employment of foreign workers started in 1981 and was followed by the signing of the 1984 Medan Agreement with the countries that were the primary sources of labor (Kassim, 2005). Malaysia is a multiethnic country due to significant in-migration (Castles and Miller, 1998; Dannecker, 2005). The perceptible economic growth of the country created many jobs for the 28 million Malaysians, creating an 11.61 million-strong workforce. Nearly 20% (2.2 million) of Malaysia’s workforce are foreign workers, excluding illegal workers. There is an additional 2.2 million illegal foreign workers (Amnesty International, 2010).

Strong recruitment of foreign workers in the Malaysian construction sector is not a new phenomenon. During the British colonial period in the early nineteenth century, Malaysia was a net receiver of foreign nationals, particularly from Indonesia, India and China, who came to work in the plantations, mines, and construction sectors (Lee and Sivananthiran, 1996; Kaur, 2010; Dannecker, 2005). The population at the end of the

twentieth century approximated 22 million and is ethnically diverse, consisting of 57 percent Malays and other indigenous peoples (collectively known as bumiputera), 24 percent Chinese, 7 percent Indians and the balance "others" (including a high proportion of non-citizen Asians, e.g., Indonesians, Bangladeshis, Filipinos) (Andaya and Andaya, 2001)... Now, Malaysia is both a source and destination for immigrants (Kaur, 2010). During the industrial transformations of the 1980s and the early 1990s, Malaysia shifted towards export-oriented industrialization. This was supported by a significant number of low-skilled foreign workers that were imported; Malaysia has become the Asian country with the most significant reliance on foreign workers (Pillai, 1999). Foreign construction workers (unskilled and semi-skilled migrant workers) in Malaysia were from adjacent regions; Indonesia is the leading source of labor, followed by Myanmar, Pakistan, India, and the Philippines. In the meantime, Malaysians have long migrated to work in countries and regions such as Australia, Brunei, Hong Kong, Japan, Canada, New Zealand, United States, United Kingdom, Singapore, Taiwan and the Middle East (Wells, 1996; Kassim, 2005; Kanapathy, 2008).

Nonetheless, the inflow is far more than the departures (Castles and Miller, 1998; Kaur, 2010), and the employment of foreign workers has been concentrated within the agriculture, construction, and manufacturing sectors. While Malaysia has depended on foreign workers to sustain its economic growth, the recent influx of immigrant workers had raised serious issues and has significant implications for the nation. The departure of local skilled workers in the construction industry has depleted the pool of expertise that fed the traditional apprenticeship system, which is common among the local Chinese causing Malaysia tend to depend on foreign workers (Narayanan and Lai, 2005).

Since the construction industry requires massive manpower, labor supplies are essential, and have become the most expensive resource deployed within the industry (Jurgens, 2010; Loosemore et al., 2003). Foreign workers started to work illegally in Malaysia since the early 1970s as there were no provisions for legal employment, where then the immigration law was applied to the expatriates until the 1980s. The legal

mechanisms were established to enable legal recruitment in response to of the significant inflow of foreign workers (Yong, 2006, Kaur, 2010; Kanapathy, 2008). Foreign workers were needed in the construction industry, and there was a shortage of local labors willing to work in the industry during the period of rapid economic growth (Han et al., 2008; Lee and Sivananthiran, 1996).

The number of foreign workers in Malaysia has increased from an estimated 0.5 million in 1984 to 0.63 million in 1997, 2.4 million in 1998, 1.9 million in 2006, and then 2.1 million in 2009. Most of the foreign workers arriving in Malaysia were unskilled, which has reduced the productivity and the quality control within the construction industry (Han et al., 2008). Apart from that, social problems associated with foreign workers have further aggravated the situation. The availability of the large number of foreign workers has caused local and new graduates to stay away from the construction industry because of the '3D' (dirty, difficult, and dangerous) image which has long been associated with the construction industry (Castles and Miller, 1998). The aims of this research are to identify those negative impacts induced by foreign workers in the Malaysian construction industry and to determine strategies in minimizing these negative impacts.

Foreign Labors Issues in Malaysia

The relationship between migration and development is complex. The factors that influence the flow of migrants from a source country and the factors that attract a flow of migrants to the destination and recipient country have resulted in the huge influx of foreign workers, particularly illegal foreign workers, to Malaysia. The construction industry has been experiencing an acute labor shortage since 1980s. In the meantime, the demand for labor has been constantly increasing in the construction industry because of the high rate of developments (Serneels, 2007). Wage rates in all categories of workers have increased, due to labor shortages, yet the supply of laborers has failed to increase adequately to match demand (Sambasivan and Yau, 2007). Foreign workers filled the gap. However, some employers chose to employ foreign workers in times of labor

shortage, rather than raising wages and improving working conditions to attract local workers (Narayanan and Lai, 2005). Such employers object to minimum wage levels for construction workers as this would reduce their competitiveness by increase their wage payments, and thereby increase overall construction costs. Hence, local workers lose out in the competition with foreign workers for jobs, and the wage rate for local workers have remained low (Shafii et al., 2009). As a result, local workers chose to emigrate to earn better wages. Foreign workers have substituted for these local workers within the construction sector.

The living standards and wage rates in the home country are the most influential factors influencing local workers to migrate to other developed countries in order to earn higher wages (Wells, 1996). This would lead to local workers emigrating, putting further pressure on the system and increasing reliance on foreign workers (Sunderhaus, 2007). Such a chain of events would hinder and frustrate efforts to attract local workers to the construction industry (Abdul, 2009; Azam et al., 2009). Locals can afford to reject working in the construction industry as there is available foreign workforce (Castles and Miller, 1998). Moreover, the participation of foreign workers in the construction industry is vital to offset the increasing construction costs as the wage rate of foreign workers is low (Lee and Sivananthiran, 1996). Over-dependence on foreign workers will result in an outflow of currency, decline in productivity performance, and disturb the social balance and the economy. Furthermore, the large number of foreign workers is seen as a security threat as it is associated with rising crime rate and contagious diseases (Kanapathy, 2008).

The construction industry is already unattractive due to the overwhelming number of lowly skilled and poorly educated foreign workers already engaged in the industry. Easy access to the supplies of cheap foreign workers indirectly reduces the wages of local workers. Moreover, the willingness of foreign workers to accept low wages and poor working conditions has aggravated the problem by further depressing the wages of local workers (Narayanan and Lai, 2005). This further made the local workers and graduates shy away from pursuing careers in the construction industry. When this happens, the industry then recruits more foreign workers to meet

the industry's labor requirement. Low labor costs have caused the construction industry to remain dependent on foreign workers for many years. The Malaysian Ministry of Human Resources (MOHR) instituted amnesty programs for repatriation of illegal foreign workers to their country of origin; these programs caused labor shortages amongst the small- and medium-sized enterprises (SME), construction, services, and plantation sectors of about 250,000-350,000 foreign workers (Human Resource, 2005). The Manpower Department (JTK) of the Malaysian Ministry of Human Resources (MOHR) noted that the unhealthy situation correlated to the over-dependence of Indonesian workers should be given attention and contingency plans should also be proposed to source workers from other countries to solve the labor shortage. New legislation has reduced dependence on any one nationality (Wong & Anwar, 2003).

Chew (2005) worried that the population of foreign workers is highly dependent on a single country, Indonesia, which is the leading source of labor and accounts for around 65% (Kanapathy, 2008; Kaur, 2010) or 62% (Department of Statistics Malaysia, 2010) of the total foreign workers. Sabah is heavily reliant on foreign workers as around 90% of the agricultural workers are of Indonesian origin (Kassim, 2005). Significant problems may arise if diplomatic relations between the two countries become strained and Indonesia calls on their nationals to return (Kassim, 2005), or if there are misunderstandings with source countries. If these situations occur, they may cause serious disruption in construction and adversely affect the economy (Narayanan and Lai, 2005).

The inflow of foreign workers into Malaysia has reduced labor shortage problems. Nonetheless, the present influx of foreign workers, especially from a single country, creates a number of major issues and has economic, social, and political implications on local communities. Therefore, it is useful to identify the needs, negative impacts, and determine the strategies to minimize the negative impacts of employing foreign workers in the Malaysian construction industry. During the economic growth and industrialization, foreign workers helped to alleviate severe labor market imbalances in the construction industry. Despite the positive short-term benefits

associated with recruiting foreign workers to work in the Malaysian construction industry, there are also long-term consequences that are typically viewed as detrimental to society.

Movement of Foreign Workers in International Construction Market

The rapid growth of the construction industry led to the increasing requirements for construction workers; therefore, it became one of the sectors that face severe labor shortages in both developed and developing countries (Yusof and Jamil, 2011). Foreign workers from less-developed countries have been sought as a solution to the problem (Han et al, 2008; Palanisamy, 2011). Kassim (2005) stated that the situation becomes worse when the offered jobs should not be occupied by foreign labors. Besides that, Malaysians have become very selective of the work that they undertake and they refuse to accept construction work which is reputed to be dirty, dangerous, and difficult. Abdul-Aziz (2001) highlighted that the construction sector is one of the sectors that relied heavily on foreign workers. The rise in foreign workers is driven by both supply-side and demand-side factors; but, the latter factors are of greater significance (Lee and Sivananthiran, 1996; Yusof and Jamil, 2011). Foreign workers have had both positive and negative impacts on the Malaysian construction industry. However, only the negative impacts are the focused of the present research. In 2004, there were 1,470,900 foreign workers; by 2009, after the government had pledged to reduce the inflow, the number had swollen to 2,100,000. International labor migration has become an increasingly important phenomenon and a very significant influence in most developing countries in the last three decades (Adi, 2003). Despite this, Wells (1996) asserted that the recruitment and employment of foreign workers in the international construction industry has received little scholarly attention. Population mobility increases with economic growth and globalization (Pillai, 1999). Migration may affect a country in term of social, economic, and political factors, and there are many fundamental tensions that underlie efforts to manage international migration in a globalizing world (Yap, 1999).

It is vital to approach labor migration from a historical perception. The migration of foreign workers in the construction industry has existed for a significant period and has been closely associated with colonialism. During the colonial period, there was estimated to be 15 million people that were transported from Africa as slaves to fulfill the demand for labor in the plantations in Caribbean and America (Stalker, 2004). When the slave trade was abolished, indentured labor replaced slavery. Indentured workers were recruited, and most of them were being controlled by the major colonial powers in China and India (Castles and Miller, 1998). Between 1834 and 1941, there were approximately 37 million workers recruited to work on plantations, mines, and construction projects in 40 countries (Potts, 1990; Appleyard, 1991).

During the industrial revolution in Europe between 1846 and 1924, an estimated 48 million people voluntarily left Europe (Massey, 1988). Most of this movement was provoked by the processes of industrialization which significantly changed urban life and agricultural areas. This created pools of surplus labor in the countryside and generated new demands in the cities which forced the migrants thrown off the land to migrate to the new world or to the colonies (particularly the Americas, Australia and New Zealand) in the search for accommodation and jobs (Castles and Miller, 1998).

In 19th century in Britain, Irish “navvies” (a slang term derived from navigator) formed a high proportion of workforce in the textile factories and building trades, digging canals and building railways. Irish immigrants were living and working under harsh conditions that were considered, at the time, a threat to the wage and living conditions of British workers (Castles and Miller, 1998). In other European countries, especially in France and Germany, foreign workers were used to fill the gaps in labor supply during the period of rapid industrial growth (Wells, 1996).

After the Second World War, the influx of migrant workers to Europe was repeated during the period of economic growth in the 20th century. According to Stalker (2004), net immigration into Western Europe

totaled nearly 10 million between 1950 and 1973. There is a long tradition in Western Europe of low-level jobs, especially those in the construction sector, being filled by immigrants. Since the middle of the 19th century, there has been a significant proportion of Irish in the British building trade. Between 1945 and 1959 a further 350,000 Irish migrants arrived in Britain and many found work in construction (Castles and Miller, 1998). There was also significant Irish emigration to the United States (Corcoran, 1991). Germany recruited unskilled and semi-skilled migrant workers from Turkey and Yugoslavia, and they workers found work in factories and on building sites which were channeled by the Federal Labor Institution. Restrictive work permit rules were used to keep them there as long as possible (Castles and Miller, 1998).

In the early 1970s, the French recruitment of foreign workers in the construction industry peaked; around 500,000 foreign workers (one-quarter of all foreign workers in France) were working in the building industry, comprising 30% of the total workforce. The rapid rise in oil prices in 1973 triggered a recession in Europe and was followed by a period of slower growth (Wells, 1996). Unemployment, rather than labor shortage, became the dominant problem in the labor market and all European countries applied strict immigration controls. Net immigration steadily declined, from 11 million in the 1950s to 9 million in the 1960s, 4 million in the 1970s, and 1.5 million between 1980 to 1985 (Livi-Bacci, 1993).

Despite the declining levels of immigration, according to OECD the building industry was still the leading employer of foreign workers in France in 1991 and the only sector where foreign workers were over-represented (OECD, 1993). Foreign workers were also heavily concentrated in the construction industry in Luxembourg, Belgium, Switzerland, and Austria. Construction jobs became known as ‘guest-worker jobs’ in these countries.

The growth in labor migration in the Middle East was sparked by the oil embargo of 1973 (Castles, 2000). Consequently, the rapid development in the oil market led to a dramatic acceleration in the rate of construction

and in the large scale investment in this region (Wells, 1996). A significant proportion of the Saudi Arabian rapidly expanding budget was expended on construction projects (Potts, 1990). The construction boom, coupled with the small population in the oil-rich countries in the Middle East, generated massive demand for foreign workers during the 1970s and early 1980s. Initially, foreign workers were recruited from other Middle Eastern states, but from the mid-1970s the labor catchment area was opened to migrants from Asia. There were many reasons for the replacement of Arab labor with Asian labor. One of the factors was the significant change in the size and distribution of construction contracts. In the early 1970s, most contracts were small and were won by local Arab firms, most of which were Egyptian. However, size of the contracts increased dramatically after 1973. During the 1980s, 70% of construction work was packaged in projects worth over US\$200 million. Most of these huge contracts were secured by firms from Europe and United States. These firms were instrumental in sourcing laborers from Asia. However, in the mid-1980s the level of construction activity in the Middle East dropped, in line with oil prices. In the late 1980s, construction output revived again, although the level of construction activity is unlikely to reach the peak of the late 1970s and early 1980s. New construction, together with the maintenance and repair of existing structures, continues to require the support of a substantial workforce (Wells, 1996).

In Asia, construction has expanded rapidly and it has become a major new destination for foreign workers due to the economic growth in many countries and the drop of birth rates since the mid-1980s. Meanwhile, labor shortages have occurred in Japan, Singapore, Hong Kong, Republic of Korea, Taiwan, and Brunei. In contrast, Thailand has lower labor movement rates than Malaysia (Castles and Miller, 1998).

Brunei was been central to immigration in Asia for during the last two decades due to the small population in and significant oil deposits. According to Stalker (2004), the population in Brunei was only around 0.3 million in 1990 of which over 50% were non-nationals, mostly from the neighboring region of Sarawak. Later, laborer immigration from Thailand and Indonesia increased significantly to Brunei (Hugo, 1993). In the 1990s, the

Middle East was overtaken by the Far East as the most important destination for migrant construction workers (Wells, 1996). The major growth in migration within Asian is from less developed countries with huge labor supply to newly-industrializing countries (Castles and Miller, 1998).

Foreign workers migrate within Southeast Asia in response to demographic differences and large disparities in the level of economic growth between countries in the region; job growth is more significant in countries with high gross domestic product (GDP) annual growth rate (Kaur, 2010). Southeast Asia can be broadly divided into 'labor-scarce' and 'labor surplus' regions, creating a symbiosis between the 'richer' labor destination countries and the 'poorer' labor source countries. After the financial crisis in 1998, Singapore, Malaysia, and Thailand recovered from the economic downturn and have continued to be attractive destinations, while Indonesia still struggles with economic dilemmas and the Philippines face political and security problems.

Foreign Workers in the Malaysian Construction Market

There are two categories of foreign workers in Malaysia: expatriates and foreign, non-expatriate, laborers. Foreign Laborers tend to be unskilled or semi-skilled; expatriates tend to be skilled labors and professional workers (Kassim, 2005; Kanapathy, 2008; Abubakar, 2002).

Foreign laborers are employed using temporary work passes, renewable every year up to maximum of five years and further extendable to a maximum of 10 years through accreditation as skilled worker. After the pass expires the laborers must return to their country of origin and stay there for at least three months before re-entry is allowed (Kanapathy, 2008; Kaur, 2010). They are also required to pay an annual employment levy. These unskilled or semi-skilled workers are more prone to recruitment and employment problems, due to their less educated mindset and the way that they are frequently cheated by illegal recruiters (Kassim, 2005; Abubakar, 2002).

In the 1970s and 1980s, foreign laborers were permitted to work in only three sectors: construction, plantation, and domestic services. However, they are now permitted to work in other sectors provided that local labor is not available (Kassim, 2005). Since 1993, foreign laborers have been involved in manufacturing and other sectors, but the type of jobs change over time and depend on the demand for labor. Foreign laborers in the construction industry usually find work as general laborers, masons, tillers, electricians, painters, carpenters, plasters, and bar benders (Abdul-Aziz, 2001). Employment of foreign laborers is a temporary measure as they can be employed only on a short-term contract (Kassim, 2005). While foreign laborers should have the same rights as local worker, their employment on fixed-term contracts means that their wages are decided by employers based on market forces and what the employer determines as a reasonable wage, regardless of the opinion of the laborers (Kassim, 1997). Now, foreign laborers are employed mainly in the manufacturing, plantation, construction and domestic services sectors (Table 1) and Indonesian workers are the most highly demanded (Kaur, 2010; Kassim, 2005) (Table 2).

Table 1: Distribution of foreign laborers (Department of Statistics Malaysia, 2010)

Sector	2006		2007		2008		2009		2010	
	No.	%	No.	%	No.	%	No.	%	No.	%
Manufacturing	628,576	33	766,451	37	737,523	35	355,710	29	539,579	36
Plantation	343,373	18	343,373	17	361,977	17	205,333	17	246,284	16
Construction	272,730	14	298,422	14	285,845	14	204,237	17	187,743	12
Services	201,203	11	201,203	10	215,149	10	133,597	11	144,631	10
Agriculture	162,338	8	162,338	8	220,528	11	116,324	9	150,823	10
Services	305,393	16	293,771	14	264,591	13	206,863	17	247,051	16
Total	1,913,613	100	2,065,558	100	2,085,613	100	1,222,064	100	1,516,111	100

Table 2: Foreign laborers in construction sector by country of origin (Department of Statistics Malaysia, 2010)

Sector	2006	2007	2008	2009	2010
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	No.	No.	No.	No.	No.
Indonesia	219,880	208,920	183,961	172,329	151,333
Bangladesh	11,447	47,379	61,569	2,638	3,036
Thailand	1,245	1,402	1,613	781	463
Philippines	1,757	1,828	2,135	671	3,335
Pakistan	4,131	4,475	5,638	7,089	6,217
Myanmar	14,428	14,491	14,007	11,691	12,221
Nepal	4,389	4,678	3,704	3,078	3,050
Vietnam	5,893	5,090	3,613	226	1,965
Other	9,560	10,159	9,605	5,734	6,123
Total	272,730	298,422	285,845	204,237	187,743

Research Design and Procedures

This research focused on contracting firms and relevant government organizations in the Klang Valley area, where there are stronger direct links to foreign workers than in other areas of Malaysia. Quantitative data were collected using structured interview surveys. Questionnaires were given to professionals in construction projects who have direct contact with foreign workers. Only companies registered under the Construction Industrial Development Board (CIDB) Malaysia class G7 were chosen for participation in this survey. In Malaysia, construction contractors are categorized from grade G1 to G7 by many KPIs including but not limited to the number of employees and a yearly turnover under construction industry development board (CIDB) registration, where G7 is the top grade. There are totally 819 G7 contractors in the Klang Valley, Malaysia. Klang Valley is an area in Malaysia comprising Kuala Lumpur and its suburbs, and adjoining cities and towns in the state of Selangor. An alternative reference to this would be Kuala Lumpur Metropolitan Area or Greater Kuala Lumpur. It is geographically delineated by Titiwangsa Mountains to the north and east and the Strait of Malacca to the west. The conurbation has a total population of over 6 million, and is the heartland of Malaysia's industry and commerce. Klang Valley is home to a large number of migrants from other states within Malaysia and foreign workers largely from Indonesia, India and Nepal. In this study, there were 117 sets of questionnaires completed through the face-to-face structured interviews, which held 14.3% among totally 819 G7 contractors in the Klang Valley, Malaysia. The interview survey was conducted in year 2011, and each interview session was scheduled to a period of 45 minutes to 2 hours. A structured interview (also known as a standardized interview or a researcher-administered survey) is a quantitative research method commonly employed in survey research. The aim of this approach is to ensure that each interview is presented with exactly the same questions in the same order. This ensures that answers can be reliably aggregated and that comparisons can be made with confidence between sample subgroups or between different survey periods. Structured interviews are a means of collecting data for a statistical survey. Interviewers read the questions exactly as they appear on the survey questionnaire. The choice of answers to the questions is often fixed (close-

ended) in advance, though open-ended questions can also be included within a structured interview. The questionnaire was structured in four parts including the background of respondents; an overview of foreign workers in the construction industry; personal views towards foreign workers; and negative impacts of employing foreign workers and strategies to minimize those negative impacts.

The questionnaire structure was based on three types of response techniques: rating-based, selection-based, and open-ended questions. The rating-based questions utilize a four-point Likert scale, showing measures of agreement in which the respondents are instructed to rate their level of agreement with a statement (from 1 to 4). A scale of four points was used to avoid uncertain or neutral answers, as responses tend to an average value when it is available. Selection-based questions require the respondents to choose from answers listed in the questionnaire. Open-ended questions allow respondents to provide their own answers, which in turn provide an opportunity for the respondents to express their thoughts; these questions tend to produce a variety of answers. The data obtained from the questionnaires were sorted and analyzed using the Statistical Package for Social Science (SPSS) Version 19.0.

The respondents' profiles are summarized in Table 3. More than half respondents (53%) are project managers, 18% are site supervisors, and 12% are quantity surveyors. More than 80% of respondents have at least 6 years working experience in the construction industry. Tenure in the industry appears to be common as 65% of respondents have over 11 years of experience. Table 3 shows that approximately 88% of companies involved in this study have operated for more than 10 years.

Table 3: Respondents' profiles

Job Position	Percent (%)	Working Experience	Percent (%)	Company Operation Years	Percent (%)
Project Manager	54	1-5	18	<3	6
Site Supervisor	17	6-10	12	3-10	6
Quantity Surveyor	12	11-15	41	>10	88
Contract Manager	6	16-20	23	Total	100
Engineer	6	>20	6		
Executive Director	6	Total	100		
Total	100				

Data Interpretation and Analysis

Overview of Foreign Worker in the Construction Industry

Table 4 shows that 35% of respondents prefer to hire foreign workers aged between 19 and 29, while 65% of respondents prefer to hire those aged between 30 and 39. Just under half of the respondents (47%) were satisfied with the quality of work completed by foreign workers while the remainder believed the work was of average quality. Most (82%) preferred long-term employment of foreign workers, with the remainder preferring temporary employment.

Table 4: Preference on foreign worker recruit in construction site

Preferred Age of Foreign Workers	Percent (%)	Quality of Foreign Workers' Work	Percent (%)	Preferred Type of Foreign Workers	Percent (%)

19-29	35	Good	47	Long term Basis	82
30-39	65	Average	53	Temporary Basis	18
Total	100	Total	100	Total	100

Table 5 shows whether the respondents would like to renew foreign worker permits. Most respondents (65%) were positive as new employees take considerable training to become familiar with the policies and regulations of their employers. More than half respondents (59%) agree that the work permits should be renewed annually, whereas others (29%) though it should be renewed every three years, and the remainder (12%) believed they should be renewed every five years.

Table 5: Whether or not renew work permit for foreign workers

Continue Recruit Same Group of Foreign Workers	Percent (%)	Preferred Renewal Duration of Work Permit	Percent (%)
yes, definitely	65	every year	59
maybe	29	every 3 years	29
never	6	every 5 years	12
Total	100	Total	100

Why foreign workers choose to work in Malaysian construction industry

Table 6 summarizes the reasons why foreign workers elect to work in the Malaysian construction industry. Most of the variables are identified to be significant at the 95% level, except for “Long term employment”, indicating that responses are inconsistent for this variable. The null hypothesis is accepted, indicating that long term employment is not preferred. The other variables, including “Being accepted by Malaysian workers despite poor image”; “Preference of the employers”; “Unattractiveness of the career pathway”; and “Lifestyle and working conditions” are all supported as significant factors. “Long term employment”, has a mean score of

2.47, while all other variables have mean scores ranging from 2.82 to 3.18. “Preference of the employers” and “Lifestyle and working conditions” are the most significant reasons, followed by “Unattractiveness of the career pathway” with a mean at 3.00, and “Being accepted by Malaysian workers despite poor image” with a mean at 2.82.

Table 7 shows the Pearson correlation matrix for reasons why foreign workers work in Malaysia. Only the variables “Being accepted by Malaysian workers despite poor image” and “Preference of the employers” are significantly correlated. This indicates that as “Being accepted by Malaysian workers despite poor image” increases, the preference of “Preference of the employers” also increases.

Table 6: One sample t-test on reasons why foreign workers work in Malaysia

Why foreign workers work in Malaysia	Test Value = 2.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Being accepted by Malaysian workers despite poor image	2.524	116	.023	.32353	.0518	.5953
Preference of the employers	5.277	116	.000	.67647	.4047	.9482
Unattractiveness of the career pathway	3.367	116	.004	.50000	.1851	.8149
Lifestyle and working conditions	4.386	116	.000	.67647	.3495	1.0034
Long term employment	-.194	116	.848	-.02941	-.3504	.2916

Note: One-tailed critical t-value = 1.746

Table 7: Pearson correlation matrix among reasons why foreign workers work in Malaysia

Why foreign workers work in Malaysia		Being accepted by Malaysian workers despite poor image	Preference of the employers	Unattractiveness of the career pathway	The lifestyle and working conditions of the construction site	Long term employment
Being accepted by Malaysian workers despite poor image	Pearson Correlation	1	.566*	.193	.098	-.301
	Sig. (2-tailed)		.018	.458	.707	.241
	N	117	117	117	117	117
Preference of the employers	Pearson Correlation	.566*	1	-.193	-.284	-.457
	Sig. (2-tailed)	.018		.458	.269	.065
	N	117	117	117	117	117
Unattractiveness of the career pathway	Pearson Correlation	.193	-.193	1	.481	.163
	Sig. (2-tailed)	.458	.458		.050	.531
	N	117	117	117	117	117
Lifestyle and working conditions	Pearson Correlation	.098	-.284	.481	1	-.222
	Sig. (2-tailed)	.707	.269	.050		.391
	N	117	117	117	117	117
Long term employment	Pearson Correlation	-.301	-.457	.163	-.222	1
	Sig. (2-tailed)	.241	.065	.531	.391	
	N	117	117	117	117	117

*. Correlation is significant at the 0.05 level (2-tailed).

Negative Impacts Induced by Foreign Workers

Table 8 summarizes the results of one sample t-test on the negative impacts induced by foreign workers in the Malaysian construction industry. With the confidence level predetermined at 95%, most of the variables are identified to be significant, except the variable “Bad workmanship”, which indicates that the respondents’ opinions regarding this variable are not consistent. It is not possible to conclude that “Bad workmanship” causes a negative impact. However, the other variables including “Economic factor”; “Over-dependence on foreign workers”; “Local labor become less interest to work in construction industry”; “Slow pace in technology advancement”; “Increment in criminal activity”; and “Existence of illegal workers” are considered negative impacts induced by foreign workers. Basically, all the variables obtained a mean higher than 2.5 ranging from 2.65 to 3.59. Nonetheless, “Bad workmanship” has the lowest mean at 2.65. Table 9 depicts the respondents’ general acceptance toward the negative impacts induced by foreign workers, which are ranked accordingly. “Over-dependence on foreign workers” as the top negative impact and has a mean of 3.59. “Increment in criminal activity” ranks the second with a mean at 3.53, while “Economic factor” and “Existence of illegal workers” rank the third with a mean at 3.35.

Table 10 shows the Pearson correlation matrix, showing the correlations between variables associated with negative impacts induced by foreign workers. Only the variables “Economic factor” and “Over-dependence on foreign workers” are significantly correlated. This can be interpreted that as economic strength increases, there becomes increasing over-dependence on the foreign workers in the construction industry. The literature suggests that as economic growth pushes up wages, firms will increase their competitiveness by using foreign workers in an attempt to reduce the labor costs; this relationship explains the correlation observed in the data. The general lack of significance amongst the remaining factors is interesting, particularly the lack of correlation between the interest of the local laborers in working within the construction industry. This is not negatively

correlated with other variables, such as illegal workers, criminal activities, or economic factors. One implication is that it should be possible to rouse interest amongst local laborers without significant structural changes or legislative changes.

Table 8: One sample t-test on negative impacts induced by foreign workers

Negative Impacts Induced by Foreign Workers	Test Value = 2.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Economic factor	5.800	116	.000	.85279	.5412	1.1647
Over-dependence on foreign workers	5.642	116	.000	1.08824	.6794	1.4971
Local labor become less interest to work in construction industry	5.570	116	.000	.79412	.4919	1.0964
Slow pace in technology advancement	2.263	116	.038	.38235	.0242	.7405
Increment in criminal activity	8.250	116	.000	1.02941	.7649	1.2939
Bad workmanship	1.231	116	.236	.14706	-.1062	.4003
Existence of illegal workers	7.139	116	.000	.85294	.5997	1.1062

Note: One-tailed critical t-value = 1.746

Table 9: Significance of negative impacts induced by foreign workers

Negative Impacts Induced by Foreign Workers	Ratings				Mean	Std. Deviation	Ranking
	Totally disagree	Disagree	Agree	Strongly agree			
Economic factor	.00%	5.88%	52.94%	41.18%	3.3517	.60634	4
Over-dependence on foreign worker	5.88%	.00%	23.53%	70.59%	3.5882	.79521	1
Local labor become less interest to work in construction industry	.00%	5.88%	58.82%	35.29%	3.2941	.58787	5
Slow pace in technology advancement	.00%	29.41%	52.94%	17.65%	2.8824	.69663	6
Increment in criminal activity	.00%	.00%	47.06%	52.94%	3.5294	.51450	2
Bad workmanship	.00%	35.29%	64.71%	.00%	2.6471	.49259	7
Existence of illegal workers	.00%	.00%	64.71%	35.29%	3.3529	.49259	3

Table 10: Pearson correlation matrix among negative impacts induced by foreign workers

Negative Impacts Induced by Foreign Workers		Economic factor	Over-dependence on foreign worker	Local labour become less interest to work in construction industry	Slow pace in technology advancement	Increment in criminal activity	Bad workmanship	Existence of illegal workers
Economic factor	Pearson Correlation	1	.579*	.217	.400	.365	-.185	.394
	Sig. (2-tailed)		.015	.404	.111	.149	.478	.118
	N	117	117	117	117	117	117	117
Over-dependence on foreign worker	Pearson Correlation	.579*	1	-.126	.358	.413	-.235	-.244
	Sig. (2-tailed)	.015		.630	.158	.099	.365	.345
	N	117	117	117	117	117	117	117
Local labor become less interest to work in construction industry	Pearson Correlation	.217	-.126	1	.395	.280	-.051	.482*
	Sig. (2-tailed)	.404	.630		.117	.277	.847	.050
	N	117	117	117	117	117	117	117
Slow pace in technology advancement	Pearson Correlation	.400	.358	.395	1	.533*	-.129	.129
	Sig. (2-tailed)	.111	.158	.117		.027	.623	.623
	N	117	117	117	117	117	117	117
Increment in criminal activity	Pearson Correlation	.365	.413	.280	.533*	1	.044	.203
	Sig. (2-tailed)	.149	.099	.277	.027		.868	.434
	N	117	117	117	117	117	117	117
Bad workmanship	Pearson Correlation	-.185	-.235	-.051	-.129	.044	1	-.227
	Sig. (2-tailed)	.478	.365	.847	.623	.868		.380
	N	117	117	117	117	117	117	117
Existence of illegal workers	Pearson Correlation	.394	-.244	.482*	.129	.203	-.227	1
	Sig. (2-tailed)	.118	.345	.050	.623	.434	.380	
	N	117	117	117	117	117	117	117

*. Correlation is significant at the 0.05 level (2-tailed).

Strategies in Minimizing Negative Impacts Induced by Foreign Workers

A set of proposed strategies to minimize the negative impacts induced by foreign workers were identified during the research. Table 11 summarizes the one sample t-test on the strategies that may be applied to the construction industry. Most strategies are significant at the 5% level, except “Diversify countries of employment”. This implies that respondents did not believe that sourcing workers from a range of countries, with less dependence on one or two source countries, would reduce negative impacts induced by foreign workers.

The other strategies including “Implement Industrialized Building System (IBS)”; “Imposed levy”; “Governance structure”; “Eliminate illegal migration”; “Attract local worker in construction industry”; and “Migration policy” are considered effective. These strategies have mean scores of agreement ranging from 3.12 to 3.59 and are ranked in Table 12. “Attract local worker in construction industry” is the most effective strategy to minimize the negative impacts induced by foreign workers (mean agreement of 3.59). This is followed by “Eliminate illegal migration”, “Improve governance structure”, and “Migration policy”. Of these strategies, government can clearly influence one directly, migration policy, while the other factors can be at least partly influenced by firms in the construction industry.

The Malaysian government is able to directly influence several strategies. They are able to determine and impose levies, or change migration policies in ways that may impact on the volume of foreign workers admitted, which may result in reduced negative impacts by these workers. While the government cannot solely influence the other strategies, they may be able to pass legislation, establish a workforce or taskforce, or encourage industry associations to develop solutions to enact the other strategies. A campaign to influence local workers to join the construction industry, providing special economic incentives to local workers to participate

in the industry, may attract local workers to the industry. It is also possible that increased awareness of the opportunities in the industry, driven by a government-led advertising campaign, may increase the attractiveness of the industry. It seems unlikely that the government could actively cause a cessation of all illegal workers without the active support of industrial partners and firms within the construction industry.

Firms and industry associations may be able to influence other strategies, by establishing industrialized building systems, implementing appropriate governance structures, and changing their recruitment policies to discourage employment of illegal immigrants which may reduce the attractiveness the sector and reduce illegal immigration. Associations spanning the industry and covering multiple firms may provide a suitable platform from which to launch such changes.

Only one pair of the strategies, “Implement Industrialized Building System” and “Diversify countries of employment”, are significantly correlated (Table 13). This indicates that respondents that strongly believed that if the strategy of “Implement Industrialized Building System” is increased, then the “Diversify countries of employment” strategy should also increase. We cannot determine any underlying causes for this correlation and future research may be required to understand this correlation.

Table 11: One sample t- test on strategies in minimizing negative impacts induced by foreign workers

Strategies in Minimizing Negative Impacts	Test Value = 2.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Implement Industrialized Building System (IBS)	5.277	116	.000	.67647	.4047	.9482
Imposed levy	5.250	116	.000	.61765	.3682	.8670
Improve governance structure	6.971	116	.000	.79412	.5526	1.0356
Eliminate illegal migration	6.080	116	.000	.91176	.5938	1.2297
Attract local worker in construction industry	8.845	116	.000	1.08824	.8274	1.3491
Migration policy	5.570	116	.000	.79412	.4919	1.0964
Diversify countries of employment	1.649	116	.119	.32353	-.0924	.7395

Table 12: Ranking strategies in minimizing negative impacts induced by foreign workers

Strategies in Minimizing Negative Impacts	Ratings				Mean	Std. Deviation	Ranking
	Totally disagree	Disagree	Agree	Strongly agree			
Implement Industrialized Building System (IBS)	.00%	5.88%	70.59%	23.53%	3.1765	.52859	5
Imposed levy	.00%	5.88%	76.47%	17.65%	3.1176	.48507	6
Improve governance structure	.00%	.00%	70.59%	29.41%	3.2937	.46967	4
Eliminate illegal migration	.00%	5.88%	47.06%	47.06%	3.4118	.61835	2
Attract local worker in construction industry	.00%	.00%	41.18%	58.82%	3.5882	.50730	1
Migration policy	.00%	5.88%	58.82%	35.29%	3.2941	.58787	3
Diversify countries of employment	5.88%	23.53%	52.94%	17.65%	2.8235	.80896	7

Table 13: Pearson correlation matrix among strategies

Strategies in Minimizing Negative Impacts		Implement Industrialized Building System (IBS)	Imposed levy	Governance structure	Eliminate illegal migration	Attract local worker in construction industry	Migration policy	Diversify countries of employment foreign worker
Implement Industrialized Building System (IBS)	Pearson Correlation	1	.158	.030	-.045	-.178	.024	.516*
	Sig. (2-tailed)		.545	.910	.864	.494	.928	.034
	N	117	117	117	117	117	117	117
Imposed levy	Pearson Correlation	.158	1	.387	.245	.209	.309	-.262
	Sig. (2-tailed)	.545		.125	.343	.420	.227	.309
	N	117	117	117	117	117	117	117
Improve governance structure	Pearson Correlation	.030	.387	1	.203	.015	.346	-.019
	Sig. (2-tailed)	.910	.125		.436	.953	.173	.941
	N	117	117	117	117	117	117	117
Eliminate illegal migration	Pearson Correlation	-.045	.245	.203	1	.176	.334	.154
	Sig. (2-tailed)	.864	.343	.436		.500	.190	.554
	N	117	117	117	117	117	117	117
Attract local workers in construction industry	Pearson Correlation	-.178	.209	.015	.176	1	.222	-.188
	Sig. (2-tailed)	.494	.420	.953	.500		.392	.470
	N	117	117	117	117	117	117	117
Migration policy	Pearson Correlation	.024	.309	.346	.334	.222	1	.247
	Sig. (2-tailed)	.928	.227	.173	.190	.392		.338
	N	117	117	117	117	117	117	117
Diversify countries of employment	Pearson Correlation	.516*	-.262	-.019	.154	-.188	.247	1
	Sig. (2-tailed)	.034	.309	.941	.554	.470	.338	
	N	117	117	117	117	117	117	117

*. Correlation is significant at the 0.05 level (2-tailed)

Reliability Tests

The Cronbach's Alpha Coefficient was used for reliability tests as shown in Table 14. The greater the value of Cronbach's Alpha, the greater the internal consistency and reliability of the construct is. Nunnally (1978) suggests that as a rule of thumb, 0.7 is a sufficient threshold indicating reliability in this type of research. We judge that the instruments used in this research are suitably reliable, based on the values exceeding this threshold (Table 14).

Table 14: Cronbach's Alpha result on reliability of this research

Set of Variables	Cronbach's Alpha
Negative impacts brought by foreign workers	0.806
Strategies to minimize the negative impacts	0.710

Discussion on Findings

The employment of foreign workers is undertaken to solve the labor shortages in the Malaysian construction industry. Significant efforts have been made by the Ministry of Human Resource and Construction Industrial Development Board (CIDB) to reduce the number of foreign workers and to attract or to increase the involvement of local people in the construction industry. The Immigration Department is responsible for issuing working permits to eligible foreign workers, and is responsible for ensuring that all foreign workers are legal workers. However, foreign workers have brought unavoidable negative impacts to the local society, yet 88% respondents agree that foreign workers are still needed in the Malaysian construction industry. Overall, the three major factors attracting foreign workers to the Malaysian construction market are "Preference of the employers", "Lifestyle and working conditions", and "Unattractiveness of the career pathway". The main negative impacts induced by foreign workers are "Over-dependence on foreign workers", "Increment in criminal activities or social problems", and "Existence of illegal workers". Malaysia is one of the countries which has become the focus of foreign workers and it has the highest ratio of illegal foreign workers in its workforce (Wong and Anwar, 2003). The International Organization for Migration estimates there are one

million illegal migrants in Malaysia (Garces-Mascarenas, 2010). Most of the illegal foreign workers are Indonesian and it is estimated that there are around 400,000 Indonesian workers. There is general agreement that economic factors are paramount in inducing persons to migrate illegally (Lee and Sivananthiran, 1996). Yong (2006) further asserts that illegal employment of foreign workers is increasing due to internationalization and the global integration of economies.

Respondents believe that strategies such as “Attract local workers into the construction industry”, “Eliminate illegal migration”, and “Improve governance structure” could minimize the negative impacts induced by foreign workers. The image of the construction industry is poor in the eyes of local workers; the lifestyle and working conditions on construction sites and the preference of employers to employ foreign workers are factors that lead less interest in the local community in being involved in construction industry. It is become worse when local people have higher education levels and aspirations. At the same time, the wages and working conditions offered do not materialize when labor demand increased during construction boom due to the involvement of immigrants who are willing to work for less (Narayanan and Lai, 2005). Due to the availability of foreign workers, especially those which are unskilled and willing to work for low wages, more highly skilled local workers become jobless. Additionally, they foreign workers further reduce the chances for disadvantaged groups of local workers by undercutting already low wages to secure employment (Goto, 1998). The widespread availability of inexpensive, low-skilled workers that depress wage rates will influence the local labors so that they are less interested in participating in the local construction industry, and will instead immigrate to countries like Singapore, Japan, or Taiwan, where higher wage rates prevail (Kanapathy, 2008). It was discovered that over-dependence on foreign workers in the construction sector was inevitable due to the preference of the employers; the wage rate of foreign workers is much lower than the local workers. However, employing foreign workers from neighboring countries is only a temporary solution to the labor shortage problem in the Malaysian construction market. Long term solutions require the support and commitment from all parties involved in the construction industry, particularly through intervention by government bodies or agencies that are able to influence policy.

Members of the construction industry are also able to influence the proportion of illegal workers in the industry by changing their business practices. A key platform that can be used to achieve this would be an industry-wide endeavor to introduce industrialized building systems. Such approaches would significantly reduce the negative perceptions associated with the industry. This would encourage greater proportions of local laborers to consider joining the industry, and prevent the flow of skilled laborers to other jurisdictions where wage levels are higher. Firms which implement such industrialized building systems may find other competitive advantages are associated with the approach, such as faster construction, or improved quality control. If firms or associations are unwilling to make an initial investment in such an IBS program, the government may be required to establish early efforts to encourage partners in the industry to participate.

Conclusion and Recommendations

It cannot be denied that foreign workers have been of great assistance in overcoming the labor shortage in the Malaysian construction market. However, with the cognizance of over-dependence on foreign workers and the negative impacts induced by foreign workers, enforcement strategies are proposed to reduce the country's dependence on foreign workers, such as to introduce industrialized building systems and to attract more local workers to the construction market. The government could also minimize these negative impacts by imposing levies, strengthening governance structures and migration policy, diversifying the sources of laborers, and eliminating illegal migration. Together, these strategies may be able to simultaneously influence more local workers to join the industry, which reducing the reliance of construction firms on lower-cost illegal workers.

A limitation of this research is the difficulty in making inferences about illegal workers without talking with them directly. Due to the difficulty in contacting and obtaining truthful responses from illegal migrants, industry representatives completed the surveys. Some of the discussions concerning the motives of laborers are based on inferences by these industry representatives. Future research may overcome this limitation by interviewing a cross-section of both legal and illegal laborers in the construction industry.

Further studies on how to attract local workers in the construction market and possible approaches to eliminate illegal migration are recommended. These may involve quantitative survey-based research methods and may be supplemented by economic modeling to understand the impact of different government policies. The correlation between strategies of implementation of industrialized building systems and the diversification of the source countries of labor remains unexplained in the present research and may be investigated in further, qualitative, studies. Such research may determine a series of effective strategies that can be rapidly implemented together without a large investment of resources.

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