MANAGING IMMIGRANT CONSTRUCTION WORKERS IN PENINSULAR MALAYSIA: THE ECONOMIC PERSPECTIVE

by

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ABSTRACT

The function of the construction industry in an economy has proven to be beneficial, especially during the economic downturn. The nature of the products of the construction industry makes it possible for the government to utilise the industry as a means to accelerate and multiply the economy by utilising the fiscal budget to build infrastructures. By so doing, the economy will be multiplied as the construction industry is an industry that produces investment goods. However, due to the nature of the Malaysian construction sector, the expenses required to stimulate the economy could not be made to the maximum extent, as the industry relies heavily on immigrant construction workers to address its labour supply problem. Immigrant construction workers are known for their high tendency to remit their salary to their country of their origin. This scenario disturbs the economic cycle within the Malaysian economy and hence, dampens the function of the construction industry as the multiplier-accelerator provider. This research was undertaken to better manage the cash flow economic cycle leakage by adopting some economic measures coupled with improvised management of immigrant construction workers exercised through legislation.

The adopted research methodology used transformative mixed-methods to balance the limitations of a single research approach. A literature review of the economic models and tools were conducted in a search for the most suitable measures, while attempting to understand the nature of construction industry by highlighting the structure and the problems associated with the industry. Special attention was also given to investigate the motivation behind the human migration to justify and support the research. Other than issues involving the use of immigrant workers, special attention was given to issues of remittances and its impacts on the global economy. The findings underpinned by literature and the research findings were used to develop the conceptual framework to manage the economic cycle leakage that is entrenched in the construction industry's economic cycle. The integrated framework consists of economic, management and legislation and was developed to address the issues highlighted. The use of economic tools can only be materialised through better management and the execution of legislation. The framework was encapsulated in a combination of process protocol and a maturity framework to allow time for the policy makers to implement it. Considerations have been made to develop the framework to ensure the smooth transition its implementation. The framework was self-validated through formative evaluations where data were attained from several parties to reduce any bias perspective. In addition, most of the measures suggested were derived from interviews conducted among the respondents. Several benefits of the framework were identified.

It is concluded that the impact of immigrant construction workers' employment can be managed by considering the appropriate tools in the form of economic, managerial and legislation measures. This research has developed an integrated process protocol maturity framework that addresses the three aforementioned aspects. The framework is simple and easily understandable with detailed activity zones that entail specific tasks that must implemented by different parties. The developed framework is expected to aid the authorities in managing immigrant construction in Malaysia and to effectively manage these workers. The framework also allows time for its implementation through the maturity stages suggested.

Keywords: *Economic Cycle Leakage, Immigrant Construction Workers, Multiplier-Accelerator Effect, Remittance*

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Chapter 1 Introduction

This chapter provides an introduction to the research reported in this thesis. It begins by explaining the background and rationale behind the research. The aim and objectives of the research are also highlighted, followed by an overview of the research methodology, the work performed and the limitations raised during the research. Additionally, this chapter established the significance of the contribution to knowledge and what has been achieved through this work. Lastly, a guide to the thesis is presented by describing the contents of each chapter and a flow chart of the structure of the thesis.

1.1 Background and Study Rationale

The construction industry which is important to the economy, acts as an investment industry and contributes significantly due to the nature of its output, which is large and expensive, requires several inputs from other economic sectors and has a close link to the government (Levy, 2010; Mustapa and Pasquire, 2008; CIDB Malaysia, 2007; Hillerbrandt, 2000; Ive and Gruneberg, 2000; Seeley, 1998 and Ofori, 1990). Furthermore, the industry's output is used by other sectors in the economy as economics' factors of production (Ive and Gruneberg, 2000; Ofori, 1990;).

The industry's factors of production require inputs from other economic sectors to produce its outputs (Hillerbrandt, 2000; Ofori, 1990). The construction industry acts as an economic activity hub and also one of the biggest source for employment (CIDB Malaysia, 2009; CIDB Malaysia, 2007; Lewis 2005), demonstrating the importance of the industry in stimulating the economy through the building of construction projects.

Hence, the industry has the most number of companies that have led to fragmentation (Latham, 1994). In Malaysia, 64,895 contractors are registered with the Construction Industry Development Board (CIDB) and 52% of these are Grade 1 contractors (i.e. the ones with the least paid-up capital) (CIDB, 2009). Although on average the industry contributes around 3% of Malaysia's GDP, the special character of the industry makes it an important sector for manipulating the economy (Finance Department, 2008). The importance of the industry is also supported by the findings of Hosein and Lewis (2005) in their paper on the relationship of value added produced by the construction industry to the aggregate GDP in Trinidad and Tobago.

The aforementioned character of the construction industry gives the industry an economic advantage in which the industry acts as an economic multiplier and accelerator (Mustapa and Pasquire, 2008; CIDB Malaysia, 2007; Ive and Grunberg, 2000; Ofori, 1990) or also known as the catalyst that stimulates the movement of other economic sectors (CIDB Malaysia, 2009).

The multiplier effect occurs when a change in the level of investment in income and employment increases the value of the aggregate demand to greater than the amount of the original investment (Samuelson, 2010; Mandel, 2009; Welch and Welch, 2007; Sloman, 2006; Sloman and Norris, 2005; Case and Fair, 2004; Ive and Gruneberg, 2000; Harvey, 1988; Bronfenbrenner et al., 1987; Vosper, 1986). That is, during an economic downturn, the government would increase its expenditure on construction, creating demand that will later revive economic activity through the multiplier effect (Mustapa and Pasquire, 2008; Mustapa and Pasquire, 2007; Ive, 2000; Stone, 1983).

This concept is supported by Abdullah (2004) who, citing the work of Henriod (1984), shows that the construction industry grows faster than the economy during a phase of rapid economic development, reflecting the cumulative interaction of the multiplier and accelerator effects of construction demand that results from changes in economy as whole.

The construction industry is also famous as a labour-intensive industry (Abdul Rahman, et.al, 2012; Ive, 2000), where it continuously requires the direct intake workers. This gives the industry a control over the level of demand and output and, subsequently, the employment level in an economy (Ive and Gruneberg 2000). For example, the Malaysian construction industry as a whole employs around 800,000 people (Abdul Rahman, et.al, 2012). Although there are attempts to reduce the use of labour-based technology with capital-intensive technology in most countries, it is found that there is a need to use both concurrently to achieve the highest profit for a nation's economy and the construction industry itself (Hillebrandt, 2000).

What is described above is the ideal function of the construction industry in terms of its contribution to the economy. However, the industry suffers from such acute labour shortages due to its being a '3-D' job (difficult, dirty and dangerous) (Abdul Rahman, et.al, 2012; Manning, 2001) that construction workers must be imported from another country (CIDB, 2007; Spillane, 2005; Dainty et al., 2005; Mohd Yusof, 2005; Narayanan and Lai, 2005 and Dainty et al., 2004.

In Malaysia, 69% of the total workforce is made up of immigrant construction workers (Abdul Rahman, 2012). In another study conducted by Narayanan and Lai, (2005), the number of immigrant workers accounted for 49.8% of the workforce, and their

involvement in the industry has resulted in a significant reduction in the labour supply problem (Abdul Rahman et.al, 2012; Anderson and Ruth, 2009; Asia Pasific Migration Research Network; Narayan and Lai, 2005).

The presence of immigrant workers in the construction industry reflects the preferences employers have for them over locals. This is due to the fact that immigrant workers are vulnerable, cheap and more willing to work in unfavourable environments than locals (Anderson and Ruth, 2009). This demonstrates how immigrant workers are exposed to poor working conditions and cheaper wages due to their lower status in foreign countries. Additionally, these immigrant workers are prone to recruitment and employment problems due to their lower education levels (Abdul Rahman, 2012).

Coupled with the benefits of engaging immigrant workers in the industry are drawbacks such as the overcrowding of unskilled immigrant workers in various sectors and poor-quality buildings and infrastructure due to the heavy use of unskilled workers and there have been extra social and political costs (Asia Pacific Migration Research Network, 2006; Abdul-Aziz, 2001; Narayanan and Lai, 2005). Social problems such as increases in crime and a high percentage of remittances (Narayanan and Lai, 2005) also occur due to the inflow of these immigrants. It is claimed that the legislative actions to control these problems are not effective (Mughal and Padilla, 2005; Manning, 2001) and thus cannot be relied upon solely to control immigrant workers.

There are attempts to reduce the usage of labour-based technology with capital-intensive technology, namely the IBS (Industrialised Building System). However, these attempts still fail to remove the existing problem (Dainty et. al, 2005). Moreover, there is a need to use both concurrently to achieve the highest profit to nation’s economy and the construction industry itself (Hillebrandt, 2000).

1.2 Research Justification

Having explained the function of the construction industry in relation to the economy, it is important to examine the effect of engaging immigrant construction workers in the industry. Recent reports indicated that 20% (2.2 million) of Malaysia's workforce are immigrant workers, a further 2.2 million are illegal foreign workers (Baruah, 2013; Bernama, 2008). In 2010, it was reported that there were 288,722 legal immigrant construction workers in the country, which represented 28% of the total workforce (Baruah, 2013). This was a slight reduction from 2007, when it was reported that there were 293,509 legal immigrant construction workers in Malaysia (Immigration Department, 2008; CIDB, 2007). In Abdul Rahman et al. (2012) research on the negative impact of foreign workers in Malaysia, it was estimated that immigrant workers made up 69% of the construction industry workforce in Malaysia.

The high engagement of immigrant construction workers, particularly at the operational level, has been the norm in the Malaysian construction industry since 1970s (Abdul Rahman, et.al, 2012; ILO, 2004; Mohd Yusof, 2005). The industry has been suffering from a labour shortage at the operational level due to the unattractive nature of the work coupled with low wages (Mohd Yusof, 2005; Abdul Rahman, et.al, 2012). Their presence in the country has without doubt dampened the acute labour shortage problem. Immigrant workers, who are mostly from low-income backgrounds, find the opportunity to work in neighbouring countries highly attractive, especially when wage rates and living standards are far better than in their home country (Wells, 1996).

Due to several push factors, namely poverty and famine in their country of origin, the immigrant workers tend to accept almost any work that is available in host countries (Wickramasekera, 2006; ILO, 2004). This is mainly due to the fact that their migration

plays a vital role in financing their dependents' shift from familial to commercial production in their home countries (Rozelle Scott, 1999). It is not surprising to find a number of immigrant workers on most construction sites in Malaysia; as their wages are low, their presence in the country is an important method of off setting rising construction costs (Abdul Rahman, et.al, 2012). Although they receive low wages, provision for labour still typically accounts for 30–50% of construction costs (Peurifoy and Oberlander, 2002). Hence, their presence ensures the timely completion of construction projects, as they are well-known as hard-working employers with high motivation (Pulai, 2010).

The employment of immigrant construction workers has had both a positive and negative impact on the Malaysian construction industry. For instance, immigrant construction workers are exposed to several problems during their stay in Malaysia (Kasssim, 2004). Due to nature of the business, there is no guarantee that construction companies will be continuously awarded projects. Hence, employers have tried their best to minimise costs by making the immigrant construction workers stay on-site in temporary accommodation known as 'kongsi' (Abdul-Aziz, 2001).

The condition of the 'kongsi' is generally poor and there are no proper amenities. In addition to the lack of new work, the nature of the business is that projects are short-lived. This means that once they have completed a project, construction workers may disembark for another. This contributes to their transient work conditions, which has repercussions on other areas of their life (Mustapa and Pasquire, 2008). There is also no provision for medical benefits given by their employers (Kasssim, 2004), and this clearly demonstrates immigrant construction workers feel little benefit during their stay in a host country.

Due to the social contracts immigrant construction workers hold with family members in their home countries, one of the noticeable drawbacks of employing them is the destination of their wages (ILO, 2004; McKenzie, 2005; Thieme and Wyss, 2005). In 2007, MYR18.25 billion was remitted from Malaysia to other countries (Hernandez-Coss et al., 2009), with MYR1.5 million reported to be leaving the country every month (Utusan Malaysia, 2006). In 2008, this figure was approximately MYR9 billion (Syafaat, 2008). In 2011, Bangladesh was the sixth most popular destination for remittance (MYR35.6 billion), while Indonesia ranked in 17th place (MYR22.7 billion)(ILO, 2011). This trend exposes the Malaysian construction industry to an economic effect peculiar to the multiplier-accelerator model: economic leakage.

This scenario affects the level of employment created by the industry and its ability to promote and multiply the nation's economy, especially as most of the employees were immigrant construction workers who were willing to work at low wages and in 3 'D' work environment. This phenomenon of sending money to outside the country may have a severely adverse effect on an economy, especially during the current banking crises. The need to effectively manage economic leakage will increase as the multiplier-accelerator effect is brought into play in an attempt to reduce the recessionary effect of the crisis. In addition to this, there is also the need to improve the well-being of the immigrant construction workers, so as to ensure that both parties benefit economically and socially.

There are two types of economic leakage, namely, positive and negative. A positive leakage occurs when any income put aside as a saving was kept in a proper channel, namely, a bank (Samuelson, 2010; Sloman, 2006; Harvey, 1988). In contrast, a negative leakage occurs when any income not spent in an economy was kept in an

inappropriate channel or, even worse, exported to another country. Although it seems that remittance may benefit labour-sending countries, the presence of the immigrant workers in the host country contributes to its economic growth too (ILO, 2006).

Figure 1.1 illustrates the circular flow within the financial markets, governments and foreign markets and the leakages in the forms of savings and injections that occur through investments in an economy.

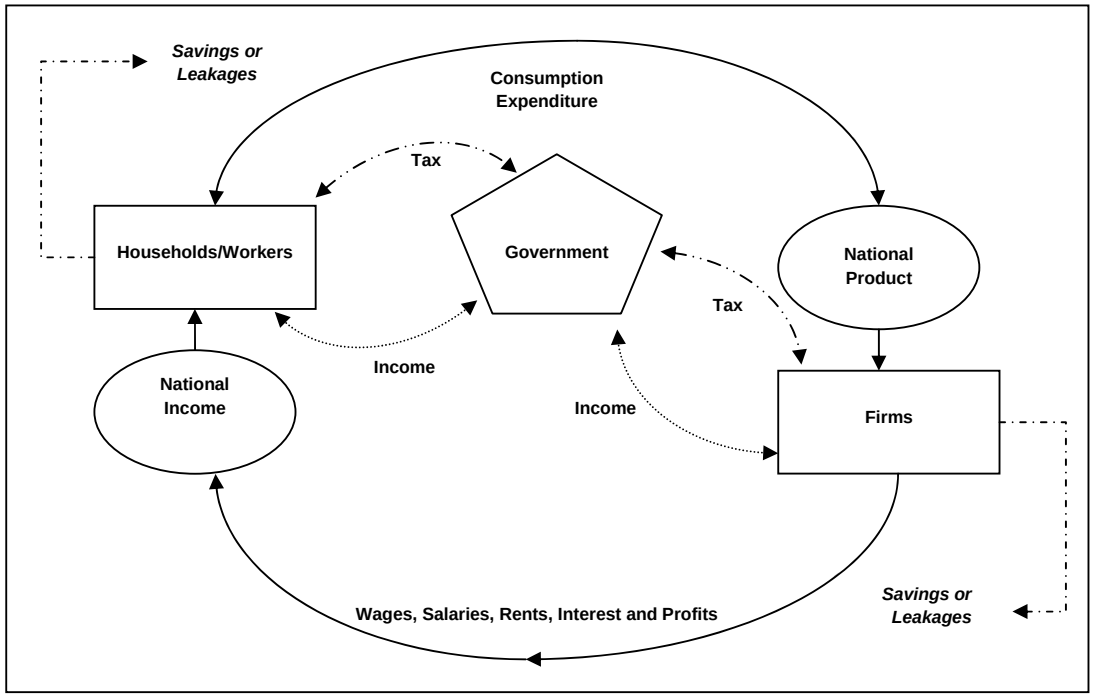


Figure 1.1 Circle Flow within the Financial Markets and Governments (Compiled from Case et al, 2004; Bronfenbrenner et al, 1987; Harvey, J, 1988; Samuelson, 2010; Sloman, 2006)

Hence, it can be observed that an over reliance on immigrant construction workers may leaves some negative impact that affects the function of the construction industry as a catalyst for economic expansion. An improvement in the management of the leakages can be achieved by integrating macroeconomic modelling and microeconomic modelling (Thieme and Wyss, 2005), especially of the hybrid of

consumption function of the immigrants and the existing measures, particularly the rules and regulations used by the Malaysian government. A balanced approach should be considered in order to harmonise both parties, so that better management of immigrant construction workers' remittance can be made.

Macroeconomic and microeconomic modelling are central to this management as they facilitates a form of control in the leakages by the immigrants through the wages received by imposing certain policies, such as taxes and interest rates (Case and Fair, 2004). In attempts to control the leakages, government influence and interference can be used to manipulate firms and consumer spending habits (Friedman, 1975). One of the measures is achieved by increasing the country's bank interest rate to encourage households and businesses to save money. Thus, because more money is put into the bank, the bank is able to loan the money to firms that seek to expand their business.

The aforementioned economic measures, in conjunction with the imposition of certain levels of taxation and setting minimum wage requirements, enables the government to manipulate the spending patterns of consumers (Case and Fair, 2004; El-Mokadem, 1973), which can be addressed by incorporating economic theory at the macro and micro levels and through the management of immigrant workers, as explained above.

In addition, social policies, such as the minimum wage, overtime legislation, safety and regulations, welfare reform, payroll taxes, insurance, immigration policies and anti-discrimination laws, are some of the most common methods of comprehending employment and wage effects (Ehrenberg and Smith, 2003). It is hoped that the negative impact of remittance on the host country could be reduced by incorporating some form of lifestyle and well-being improvements for the immigrant construction

workers, so as to encourage them to spend their wages there. This will help to strengthen the relationship between the labour-sending and host countries, as both countries would benefit from this proposal. In this respect, there is a significant need to change the current system used to manage immigrant construction workers from both a social and economic aspect. Taylor's theory on organisational techniques (Peaucelle, 2000) has been adopted and is seen as suitable for promoting change, especially in terms of improving the economic efficiency of immigrant construction management.

1.3 Aim and Objectives of the Research

This research is shaped by the recognition that remittances made by immigrant construction workers could affect the host country's multiplier-accelerator model. The poor management of immigrant construction workers has contributed to this issue. As such, this research was designed to aid the policymakers responsible for managing immigrant construction workers in Peninsular Malaysia, particularly those concerned with managing the economic cycle leakage within the construction industry caused by the high amount of remittances made by these workers. At the same time, it was hoped that incorporating better social management would improve their well-being during their employment in the country.

It is proposed that managing economic leakage via the appropriate economic measures specifically for immigrant construction workers will sustain the function of the construction industry as an economic multiplier-accelerator provider and improve the socio-economy of the immigrant construction workers. Moreover, high remittances made should not be blamed solely on immigrant construction workers. To develop an unbiased solution and approach, the root of the problems should be studied,

particularly those related to the immigrant construction workers' lifestyle and preferred economic policies for setting out future policies relating to management of immigrant construction workers. Additionally, the management of immigrant construction workers in Malaysia was studied to generate an in-depth and balanced understanding of the problem.

1.3.1 Aim

This research aims to promote a better understanding of immigrant construction workers by defining the most appropriate economic measures regarding both their motivation to migrate and the constraints of the host country. It also aims to develop a framework for policymakers in the Malaysian construction industry, so that they can manage the high levels of remittance from these workers.

1.3.2 Objectives

To achieve the aims of this research, the following objectives were established:

1. provide a detailed review on the management of economic leakage in general and within the construction industry to understand appropriate economic measures to manage leakage within the economic cycle.
2. investigate the relevance and potential of integrating economic tools to improve the management of economic leakage in the Malaysian construction industry.
3. identify inefficiency and ineffectiveness in existing management systems of immigrant construction workers in Peninsular Malaysia to determine any potential for improvement.
4. investigate the immigrant construction workers' spending and remittance patterns to understand their socio-economic background, and thus select the appropriate economic measures.

5. develop and evaluate a framework that assists policymakers in efficiently managing remittance among immigrant workers in the Malaysian construction industry.

1.4 Overview of the Research Methodology

The methodology applied throughout this research was based on the research aims and objectives. A review of the research methodology in terms of its philosophy and the different approaches and factors to be considered upon selecting the most appropriate method has indicates that a transformative mixed-method approach is most appropriate. This is due to the exploratory nature of the research objectives to develop a better understanding of the issues and processes that surround the immigrant construction workers in Peninsular Malaysia.

Some quantitative data on immigrant construction workers, namely the local demographic, personal background, such as their nationalities, education and skill levels, were used to set the context for the study. Semi-structured interviews were conducted with a purposive sample of interviewees with widely varying remits and roles from both the immigrant construction immigrant workers as well as the parties attached to the authorities.

The research methods adopted for the data collection were interviews based on the research scope and the appropriateness of the tools. By surveying the respondents' household disposal income, an informed understanding and the determination of solutions to the problems was realised. Adopting a quantitative approach has enabled this research to study the 'why' and 'how' aspects of the identified problem. Hence, the degree of economic leakage can be tested via the appropriate research tools.

From the qualitative perspective, selecting the immigrant construction workers as the main respondents is ideal for understanding the central phenomenon of the problem, as the data are collected from the respondents themselves (Creswell, 2009; Holiday, 2002)

Although regulations and mechanisms have been developed and implemented to control the immigrant workers in Malaysia, there is still room for malpractices, either by the immigrants themselves, the employers or the recruiting agencies. Of all the regulations and mechanisms applied currently, there is no one regulation that was designed to control the economic leakage. Although the foreign worker must apply for a work permit and pay for a visa and levy, these fees are still considered a small amount compared to the amount of money being sent to the worker-exporting countries.

1.5 Research Scope and Limitations

The research scope in this research focus encompasses the area of economic tools, construction industry and immigrant construction workers. The demographic research scope concentrates only in Peninsular Malaysia.

1.5.1 The Scope of Construction Economics

This study examines closely the leakage in the national income model in the form of remittances by the construction immigrant workers in Malaysia. The construction industry in general and the immigrant construction workers specifically have been selected as the main contributors to the problem. Due to the special nature of the industry, the economy is supported by sustaining the construction industry, especially in a recession. The construction industry is known for its investment demand.

Additionally, other types of demand change more proportionately every year compared to consumption demand. In other words, industries producing consumption goods and services face less instability of demand than investment in goods industries, thus making the construction and other engineering industries an important branch of the economy. Hence, the scope of this research within the construction economics context covers the macroeconomic cash flow cycle to the microeconomics through the study of the household income of the immigrant construction workers to determine the most appropriate economic measures to be applied to balance the cash flow leakage within the Peninsular Malaysia construction industry.

1.5.2 Construction Players

Because the construction industry employs one of the highest percentages of workers, this research concentrates only on immigrant construction workers and the individuals responsible for managing the immigrant construction workers. Due to high number of immigrant construction workers employed in Malaysia, the survey was conducted via a series of interviews by distributing questionnaires to expedite the process of interviewing.

1.5.3 Demographics

Due to some differences in the practice of managing immigrant construction workers, the Sabah and Sarawak State, formerly known as West Malaysia, has been excluded in the demographic scope of this study because of several differences in policies set for immigrant workers. Hence, this study concentrates only on 13 states of Peninsular Malaysia which are Perlis, Kedah, Pulau Pinang, Perak, Selangor, Wilayah Persekutuan, Negeri Sembilan, Melaka, Johor, Terengganu and Kelantan. These states are further divided into four categories, namely the Northern Region, Central

Region, Southern Region and East Region. The numbers of immigrant construction workers currently working in the region were determined, and a small percentage was taken to represent the entire population.

1.6 Contribution to Knowledge and an Overview of the Completed Research

Most of the research that is directly involved with the issue of immigrant construction workers in Malaysia highlighted the issue of poor quality construction, safety and cultural issues that mostly encircle the differences in values and the high number of accident rates on sites. Some of the research that highlighted the impacts of engaging immigrant construction workers notes the costs of managing the immigrants in terms of the issues with illegal immigrant construction workers.

In most research, the cost of the expenditures of the host countries during the employment of immigrant construction workers, namely the cost of importing, housing and in extreme cases the costs of detaining and deporting the immigrant construction workers, is highlighted. Not many studies delve into the problems associated with the economic impacts that the immigrant construction workers have on the cash flow cycle. Hence, this research has managed to portray the issue of managing the economics of immigrant construction workers from the economic point of view by studying the disposable income of the immigrant construction workers to justify the monthly remittances made.

This research also highlighted the issue of poor working conditions that surround immigrant construction workers, especially in the case of poor temporary on-site accommodation. Due to the near inexistence of concern over their well-being, this

research has highlighted this issue, especially because it is important to recognise basic human needs. It is hoped that this research has managed to balance the management of immigrant construction workers in Peninsular Malaysia from both perspectives, namely those of the Malaysian government and the immigrant construction workers.

1.7 Structure of the Thesis

The thesis comprises several chapters. A brief summary of the contents of each chapter is presented below.

1.7.1 Chapter 1

This chapter presents the research background by highlighting the research aim and objectives, the research methodology adopted, the work performed and the contribution to knowledge and begin with an explanation of the thesis structure.

1.7.2 Chapter 2

This chapter reviewed the economic theories and highlighted how certain models could be manipulated and used as economic tools. The function of the government in the economy and the execution of the economic models are also explained.

1.7.3 Chapter 3

This chapter describes the special characteristics of the construction industry generally, before considering in detail the specific character of the industry from the Malaysian perspective. This is done by incorporating several issues, such as the poor management of immigrant construction workers in terms of wage exploitation and their pitiful on-site accommodation.

1.7.4 Chapter 4

This chapter present the theoretical background surrounding the immigrant construction workers. It begins by introducing the characteristics of the immigrant construction workers as well as highlighting the fact that human migration is an international issue before considering in detail the issues that exist in Malaysia. It also highlighted the measures practiced by the Malaysian government through its appointed authorities to manage and regulate the regulations.

1.7.5 Chapter 5

Chapter 5 explains the research methodology adopted by highlighting the research philosophy, the research approach and the methods used to collect and analyse the data.

1.7.6 Chapter 6

This chapter highlighted the findings obtained from data collections and analysis on immigrant construction workers' disposable income and also opinions from both the immigrant construction workers and authorities in charge in managing immigrant construction workers on their most preferable economic, management and legislation measures to be exercised towards immigrant construction workers in Peninsular Malaysia. The data are presented in profile analysis and descriptive analysis.

1.7.7 Chapter 7

This chapter summarises the research issues as derived from the literature review from chapters 3, 4 and 5 and highlight the research gaps. In order to determine the most favorable economic measures among the immigrant construction workers, the research interview adopted the appropriate tools needed for managing the economy.

The current situation in immigrant construction management, especially with regards to the parties involved, was identified via respondents in the data collection. This was to determine the constraints in employing certain rules and regulations pertaining to the management of immigrant construction workers, as well as to decide upon the tools needed to efficiently manage remittance. This chapter also presents the aims of the research by formulating the conceptual framework used to overcome the problems by formulating certain policy.

1.7.8 Chapter 8

This chapter is related to the previous chapter's analysis and the theoretical framework development on the most suitable economic tools needed to manage remittance. These were supported from both economic and social aspects by immigrant construction workers and the parties involved in managing them.

It highlighted a few suitable frameworks to address the research problem and to explain the process of developing the framework that is relevant to the research problems and results. This chapter continues by presenting the framework proposed and how it is validated through formative evaluations from data collections and literature reviews.

1.7.9 Chapter 9

This chapter gives the general conclusions of the research by summarising each chapter and highlighting the research aim and objectives, the findings and the suggested framework that could be used to overcome the problems. It proposed some suggestions for future research and provides advice, should another researcher decided to investigate similar research problems.

1.8 Conclusions

This research were driven mostly by the need to balance aspects of management, legislation and economics related to immigrant construction workers to balance the leakage in cash flow within the Peninsular construction industry. It focuses on sustaining and enhancing the function of the construction industry.

Several issues were found that dampen the execution of holistic management that stemmed mostly from the character of the construction industry and some issues from the immigrant construction workers. It is observed that tackling issues at the micro level could help improve conditions at the macro level. This is very similar to the economic model in which the aggregate demand is able to shift the directions of the supply in a similar way.

The above discussion has enabled the researcher to form aims and objectives by constructing a framework that comprises both improvements in the economic measures as well as the managerial and legislation aspects that affect the governing of immigrant construction workers.

Chapter 2 Economic Overview

This chapter provides an introduction to the economic theory and its function in managing the economy at both the micro and macro levels. This chapter begins by explaining the economic components and elaborates on the economic theory, models and policy. The relationships between each economic component are also introduced and emphasised in terms of the macroeconomic components and their impact on the nation's economy. The function of government in managing the economy through several economic policies is also emphasised to demonstrate the importance of applying economic measures to balance the economy. Elaboration of economic policies that relate to consumer spending was also emphasised to show the importance and impacts of certain policies in influencing workers' household income disposal.

2.1 Introduction to Economics

Many definitions have been given for economics. Economics has been given many definitions. The word 'economics' derives from a Greek word meaning 'household management' (Harvey, 1988). This is very similar to the definition of economics in the *Oxford Dictionary of Economics* that defines economics as a study of how scarce resources are or should be allocated (Black, 2002). On similar note, Case and Fair (2004) define economics as 'the study of how individuals and societies choose to use the scarce resources that nature and previous generations have provided. Economics is a behavioural, or social, science. In large measure, it is the study of how people make choices. The choices that people make, when added up, translate into societal choices'.

Economics refers to the study of the interactions between societies in using scarce resources to produce and redistribute valuable goods and services (Mandel, 2009) (O'Sullivan & Sheffrin, 2005). Similarly but more elaborately, economics is the study of how individuals, businesses and governments make decisions and trade-offs in the face of scarce resources (Mandel, 2009) to satisfy unlimited wants and needs (Welch and Welch, 2007).

Much of the literature involving economics focuses on either the problems economists address or the methods that economists use to address these problems (Bronfenbrenner et.al, 1987). Thus, the study of economics is the study of human behaviour when making choices with limited resources. Many great economists have studied economics scientifically in the pursuit of benefits for mankind (Harvey, 1988).

There are three aspects faced by economists in solving economic problems (Harvey, 1988). The first aspect addresses the formulation of laws describing the changes that occur in a given set of circumstances that cannot be applied to the economy. The main reason for this is the degree of complexity among human beings compared with other areas, such as chemistry and physics.

The second type of difficulty is the restrictions of propositions made by economists. These propositions must be combined with findings from other sciences (Harvey, 1988). Put simply, economists cannot make statements about problems without relating them to other branches of science. That is, any economics equation intended to explain a situation must be based on assumptions that certain variables are constant. It is difficult to measure satisfaction because it is subjective and cannot be measured objectively. Hence, economists simplify matters by limiting immersion goods exchanged on money (Harvey, 1988).

2.2 Economic Components

There are two major divisions (also known as branches or components) of economics: microeconomics and macroeconomics (Black, 2002; Samuelson, 2010; Welch and Welch, 2007; Sloman and Norris, 2005; Bronfenbrenner et.al, 1987;). The former deals with the behaviour of decision makers in individual businesses and households regarding specific products in the economy. In another word, it examines how production and consumption are organised (Welch and Welch, 2007; Perloff, 2007; Black, 2002; Bronfenbrenner et. al, 1987). Macroeconomics on the other hand concentrates on aggregate economic activity and the interactions of major groups (i.e. households, businesses, governments and foreign sectors) in the economy (Black, 2002; Welch and Welch, 2007; Perloff, 2007; Bronfenbrenner et. al, 1987). Both divisions must be understood and considered carefully because these divisions complement one another.

Microeconomics represents decisions by individuals, including firms, on what, how and by whom to produce. In contrast, macroeconomics addresses inflation levels and employment rates (Perloff, 2007; Himmelweit, Simonetti and Trigg, 2001; Bronfenbrenner et. al, 1987). Put simply, any changes made to either microeconomic or macroeconomic policies or modelling could lead to changes in both areas. Demand by decision makers at the microeconomic level, particularly households or firms, may have a significant impact on aggregate demand and supply at the macro level. Microeconomics involves three main categories of choices that must be made in any society; the types of goods and services to be produced; the way these goods are produced; and, for whom these goods are produced (Sloman and Norris, 2005).

Macroeconomics focuses on the economy as a whole on a large scale (Stanlake, 1984). It looks at aspects of economic systems such as the measurement and determination of national income, economic equilibrium, employment levels and capital, price levels, the effects of the public sector on the economy and the consequences of foreign trade on the domestic economy (Campagna, 1974). In addition, macroeconomics concerns for inflation, balance of trade, recession and level of unemployment (Sloman and Norris, 2005). In other words, in order to make changes in one sector, investigation and consideration regarding problems emerging from the other components needs to be carried out. Hence, it can be concluded that changes in either microeconomics level would stir both components respectively.

2.3 Economic theories, models and policy

The next section explains the economic in different aspects namely the economic theories, models and policy. Each of the section correlates with each other in terms of explaining their function in managing economy as a whole.

2.3.1 Economic Theories

Economic theories are propositions that attempt to explain economic behaviour in terms of cause and effect (Stanlake, 1984). Similarly Case and Fair (2004) define economic theories as a statement or a set of related statements regarding cause and effect or action and reaction. A theory does not have to be based on numerical data. Another definition of economic theory describes it as a formal explanation of the relationship between economic variables (Welch and Welch, 2007). An explanation in economic theory is a statement about the relationship between magnitudes. For instance, one way of describing macroeconomic theory is as a statement of a

relationship of the magnitude of the aggregate. Constructing a theory is a demanding task that requires the analysis and determination of which factors are necessary and which may be safely discarded from the model (Kogiku, 1968).

To propose a good theory, the theory must be tested by facts. A theory is applied to control and manipulate the economy via policy implementation. Usually, a closer connection between theory and data provides greater confidence about its practicality and viability (Campagna, 1974). Hence, new policy should be based on theory through a series of necessary statistical and mathematical techniques by selecting data related to the issue.

Figure 2.1 depicts an economic theory and how a theoretical model is explored and contextualised.

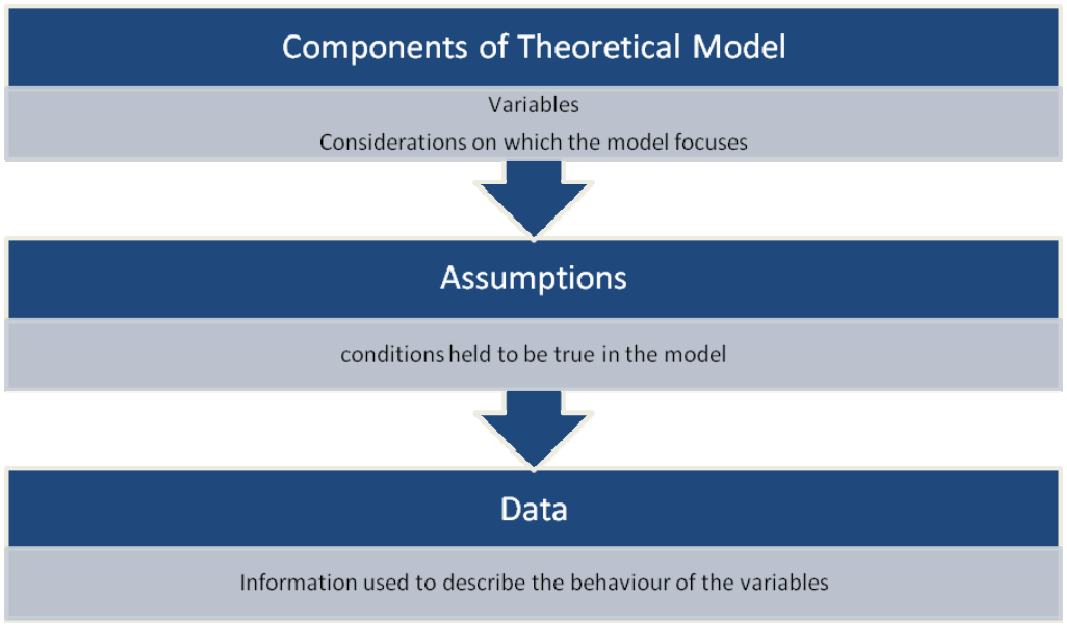


Figure 2.1 Economic Theory and Models.
Adapted from Welch and Welch (2007)

2.3.2 Economic Model

An economic model explains a statement of theory, usually presented as a mathematical equation of a presumed relationship between two or more variables (Case and Fair, 2004). A model is a setting within which an economic theory is presented (Welch and Welch, 2007). Economic modelling was developed by economists to study the behaviour of economic units by examining how an economy produces exchanges and consumes goods.

There are different types of economic modelling depending on the economic unit in question. These models are uniquely designed to achieve their objectives by considering particular variables (Kogiku, 1968). Some economic goals include economic growth, economic stability and full employment (Samuelson, 2010).

2.3.3 Economic Policy

Economic policy refers to a guide for a course of action (Welch and Welch, 2007). Policy is created to address problems relating to economics or changes in economic conditions. An economic policy is likely to result from a decision by policymakers, such as businessmen, voters or the president or prime minister. Developing economic policy is challenging because it requires consideration of the consequences of actions (Welch and Welch, 2007). There are three requirements concerning the formation of an economic policy, namely: the statement of the objectives; a theory or model of how the economic system works; and, finally a statement of the policy measures. The policy must be based upon adequate knowledge about the actual state of the economy (Stanlake, 1984).

2.4 The Function of Economic Modelling

An economic model can aid the government in planning, monitoring and making changes to its economy in accordance with its economic goals (Harvey, 1988; Case and Fair, 2004), especially when the main function of the government is to excel in economic properties (Glazer, 2001) and to provide infrastructures and services to the public to win support from voters for the next elections. Economists utilises the economic model to forecast how a change in one variable will affect another (Perloff, 2007).

2.4.1 Types of Economic Modelling within the Macroeconomic Model

There are two types of macroeconomic models: the national economy model, which can be further divided into national income models and input-output models; and, the international economy model. The national income model has two categories, models of income determination, as explained earlier via income and expenditure flow, and models of capital accumulation and growth. The former type of macroeconomic model concentrates on a single economy, whereas the latter deals with several national economies (Kogiku, 1968). This research concentrates only on the national economy model.

As described earlier, a model is a combination of theory and the mathematical relationships between two or more variables. Thus, an economic model can be used to project the future effect of changes made in the present based on economic theories. A model can be presented in many ways, including words, graphs and equations (Welch and Welch, 2007; Case and Fair, 2004).

The most common method for representing a quantitative relationship between two variables is graphing the relationship on a two-dimensional plane (Case and Fair, 2004). No matter how economic statements are presented, they should be based on a relationship of cause and effect.

2.5 Macroeconomic Components

Macroeconomics focuses on four sectors; households, firms (which includes the private sector), governments and the rest of the world. These sectors interact in a variety of ways, primarily in terms of the receipt of payment of income. One way of understanding the economic interactions between the four sectors is depicted in Figure 2.2. Tracing the income flow, expenditure and products in these sectors provides insight into the functions of a macroeconomic system.

Explanations of each component of macroeconomics are as follows:

1) the household sector - includes persons and institutions in their function as consumers of goods and services and suppliers of the production of labour
2) the producing sector (also known as firms) - includes persons and institutions in their function as producers of goods and services
3) the government sector - includes government at all levels that provides public infrastructure and services and distributes various transfers of payments (Kogiku, 1968)
4) the international sector - includes the rest of the world (Case and Fair, 2004).

Disturbances in the flow will result in disequilibrium in the economy. Any attempts to control this disturbance, known as leakage, are beneficial.

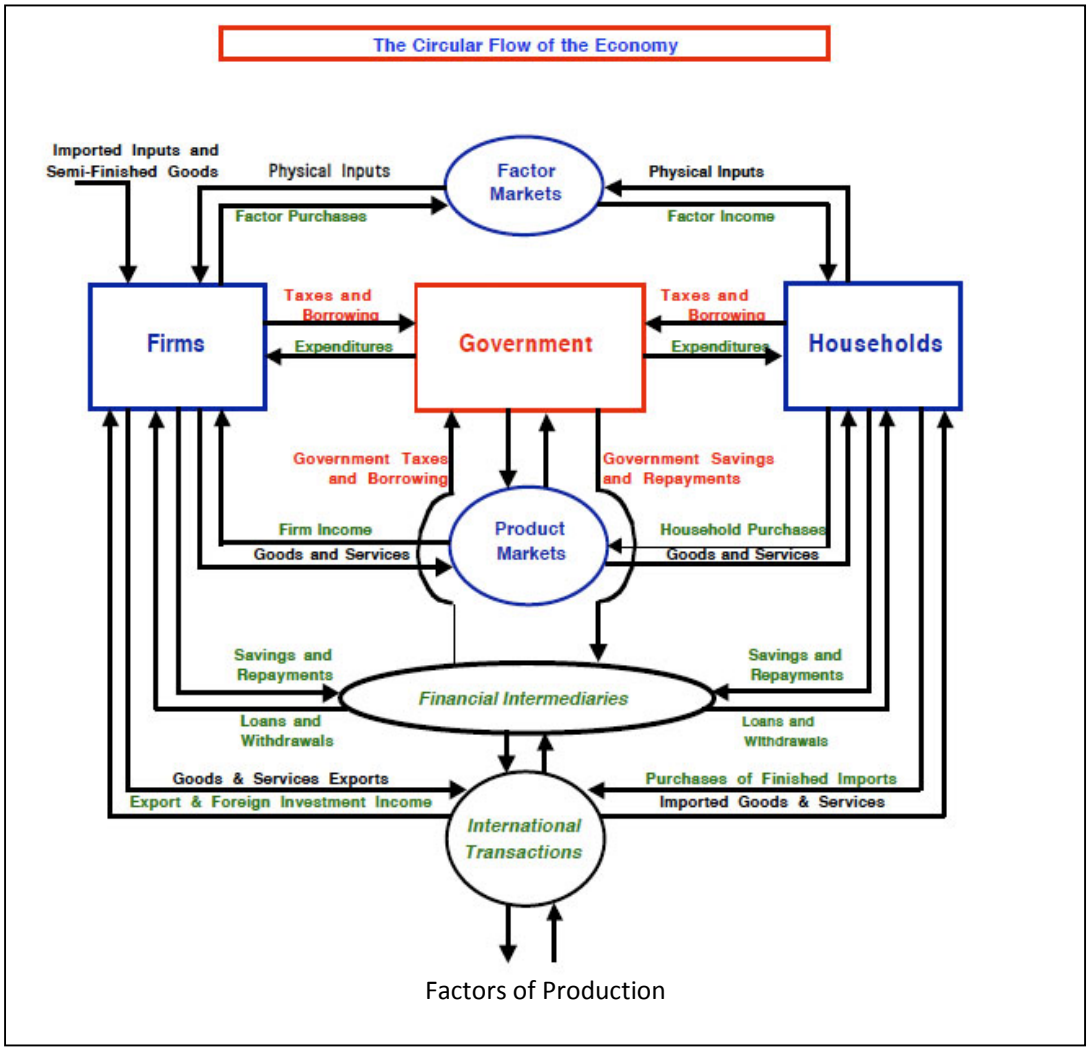


Figure 2.2 Macroeconomic Circular Flow in Economy (adapted from Montclair State University School of Business, Department of Economics and Finance, 2009)

2.6 Equilibrium in Macroeconomic Modelling

As previously mentioned, it is the aim and concern of economists to achieve equilibrium in the economy. Case and Fair (2004) define equilibrium as follows:

"equilibrium occurs when planned aggregate expenditure and aggregate output are equal. Planned aggregate expenditure is the sum of consumption spending and planned in investment spending"

This definition suggests that equilibrium occurs when the expected output of an economy, usually in the form of economic growth, intersects with the planned expenditures using a macroeconomic model.

Equilibrium in microeconomic modelling is not the same as in macroeconomic modelling. Similar to the goal of macroeconomics, equilibrium in microeconomics materialises in a particular market at a clearing price (Case and Fair, 2004). The market clearing price is when the price offered by a firm has been accepted by households.

Equilibrium in aggregate output can be expressed as in the following equation:

planned aggregate expenditure = consumption + planned investment

$$AE = C + I$$

Y = AE or

Y = C + I, where

Y = aggregate output

AE = C + I

= planned aggregate output

This equilibrium is based on two assumptions. The first assumption is that the output and incomes are equal. The second assumption is that savings is the balance of income after household consumption. The second assumption in the equilibrium is not certain because saving is regarded as a leakage in the spending stream, also known as a circular income flow (Welch and Welch, 2007; Bronfenbrenner et. al, 1987).

Fortunately, this type of leakage can be adjusted by imposing injection in the circular flow (Welch and Welch, 2007; Bronfenbrenner et. al, 1987), known as an adjustment to equilibrium. Changes made to planned investments will result in a massive change in output. This is in accordance with the multiplier theory, which has been designed to generate economic growth.

2.7 The Multiplier Effect

The multiplier effect refers to a change in total output and income as a result of a change in non-income-determined spending that is larger than or a multiple of the amount spent (Welch and Welch, 2007). A multiplier model reflects government expenditure by injecting a certain amount to build capital in the form of infrastructures and public buildings. By offering tenders to construction firms, construction projects are created that require human capital, thus creating job opportunities (Case and Fair, 2004; Benjamin and Friedman, 1975).

The multiplier effect is a macroeconomic model used by a government to maintain equilibrium in the circular flow of income and government spending and taxation (Harvey, 1988). The multiplier model can also be used to manipulate the employment level in an economy. By creating employment, this effect triggers the microeconomic sector by providing job opportunities for workers and construction projects for construction firms. Employment rewards a household with purchasing power. The household can spend its income and capital to meet its everyday needs. This multiplies to other economic sectors to fulfil their demands for commodities and building materials (Hillerbrandt, 2000). In other words, a small change in one sector of an economy may result in a great change in the national income and product (Bronfenbrenner et. al, 1987).

There are two types of multiplier effects; multipliers caused by an increase in government purchases; and, multipliers caused by an increment of tax. The incremental effect due to government expenditure usually exceeds the contractionary effect of the increase in tax receipts. This is partly true when the expenditure for government purchases, such as infrastructures and public buildings, requires a huge investment, which leads to income expansion (Sirkin, 1970).

The multiplier equation is as follows:

$$\text{multiplier} = \frac{1}{1 - \text{MPC}}$$

Where MPC = marginal propensity to consume

Thus, the multiplier model can be used to manipulate both firm and household savings and spending patterns by investing in goods such as buildings and infrastructure.

2.8 The Accelerator Effect

In addition to the multiplier effect, the accelerator effect occurs as a consequence of a multiplier in which any increase in the output or consumption of goods due to an increase in demand for commodities is likely to result in an incremental demand for investment goods (Case and Fair, 2004; Hillerbrandt, 2000; Harvey, 1988), such as the production of machinery.

The accelerator effect as defined by Case and Fair (2004) as follows:

"the tendency for investment to increase when aggregate output increases and decreases when aggregate output decreases, accelerating the growth of decline output"

The accelerator effect depicts the relationship between the demand for consumer goods and services and the demand for the built environment. Relationships occur when a small increase in demand for consumer goods and services affects the production function of those goods and services. Put simply, an increase in the demand for households' goods and services is likely to force governments and firms to increase their goods and services (Ive and Gruneberg, 2000).

2.9 Leakages and Injection in the National Income Model

Leakages occur when there is a disturbance in the income and expenditure circular flow model. This may be in the form of saving, net taxes, import expenditure (Case and Fair, 2004; Bronfenbrenner et. al, 1987; Harvey, 1988; Stanlake, 1984), business saving, household taxes, business taxes or import expenditures (Welch and Welch, 2007). When leakages occur, they affect the equilibrium of the circular flow, as explained earlier. Hence, to maintain equilibrium, all leakages should be balanced by injections. Injections occur in any expenditure for currently produced goods and services minus the domestic consumption.

Some examples of injections are government purchases and exports (Welch and Welch, 2007; Bronfenbrenner et. al, 1987; Stanlake, 1984), household spending from borrowing, household spending from transfer payments, business investment spending and export expenditures (Welch and Welch, 2007). As mentioned earlier, equilibrium exists in any circular flow when planned injections are equal to planned leakages. In other words, equilibrium occurs when the leakages made by a household via direct domestic consumption purchases intersect with the amount of funding by the government, investors and foreigners into national products via expenditures for goods and services in the economy (Bronfenbrenner et. al, 1987).

Thus, leakages occur when either savings, net taxes or import expenditures by households, investors or governments do not match mathematically. Figure 2.3 shows an overview of the relationship between the government, firms, households and leakages in a circular money flow.

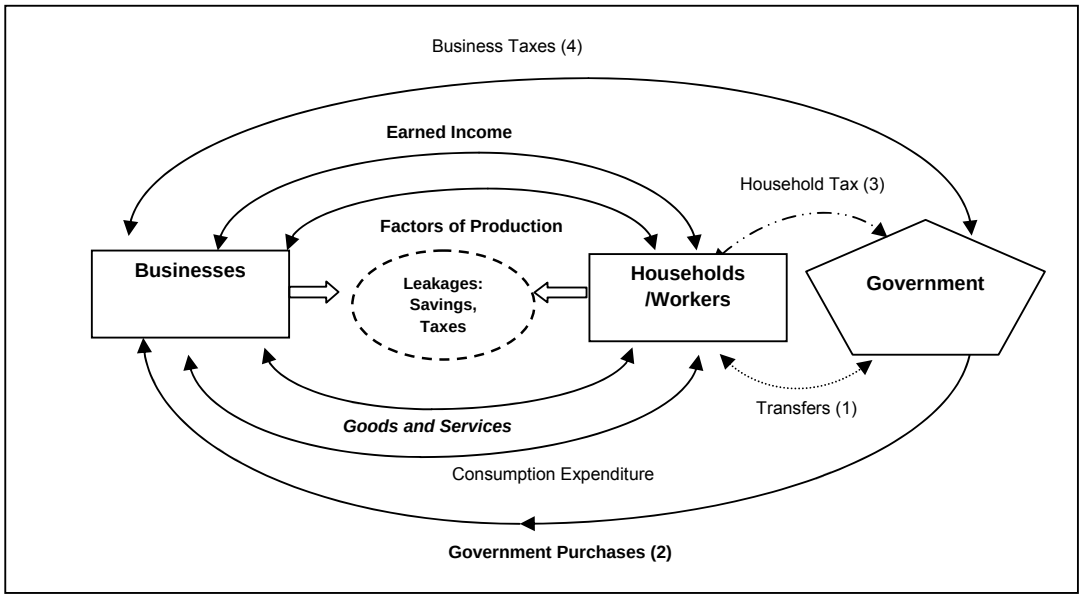


Figure: 2.3 The Circular Flow within the Financial Markets, Governments and Foreign Markets and the leakages in an economy. Sources: Compiled from Case et al, (2004), Stanlake,(1984), Harvey, J (1988) and (Welch & Welch, 2007).

An improvement in managing leakages can be achieved by integrating macroeconomic modelling and microeconomic modelling (Thieme and Wyss, 2005), especially in the hybrid of the consumption function of immigrants and existing measures, particularly the rules and regulations used by the Malaysian government.

Macroeconomic and microeconomic modelling is central to this management because it facilitates a form of control over the leakages by immigrants through the wages they receive by imposing certain policies, such as taxes and interest rates (Case and Fair,

2004). To understand the cause of leakages, it is important to study households' consumption function from a microeconomic point of view, which provides insight into the relationship between income and consumption patterns.

Hypotheses by Keynes (Case and Fair, 2004), Friedman (1975) and El-Mokadem (1973) agree that there is a correlation between income and consumer expenditure, known as the consumption function. There is also a correlation between wages received and spending.

However, not all income is spent. Households and firms usually set aside some of their income to prepare for contingencies and investments. These two factors are a source of economic leakage. An economic leakage that occurs in a proper channel, such as bank savings, stimulates the economy by providing the bank with the ability to loan to firms for capital investment, as explained in the equilibrium adjustment equation.

2.10 Government and Its Function in an Economy

There are three main economic functions of government in a market economy: increasing efficiency by promoting competition; curbing externalities (such as pollution); and, providing public goods. Another function of government is to promote equity through taxes and expenditure to redistribute income among certain groups. The government must also foster macroeconomic stability and growth by reducing unemployment and inflation and encouraging economic growth (Samuelson, 2010).

The Keynesian theory of expansionary fiscal policies supports the idea that government can stimulate the national economy and can weather economic downturns through government consumption and gross investment in infrastructure and public

buildings. Significant capital is required to build buildings and infrastructure (Case and Fair, 2004; Hillerbrandt, 2000). Thus, the government generates further investment from other sectors, including the manufacturing and mining sectors, among others.

This is true when government has the following aim in managing the economy, as stated by Hillebrandt and cited by Ofori (1990):

"balance the domestic national budget, achieving a healthy balance of payments, controlling inflation and ensuring a reasonable level of employment".

A reflective action can be taken by the government during a recession to increase demand in the construction industry (Hillerbrandt, 2000). This support for the production function of the construction industry will also drive, multiply and accelerate other industries. Thus, in nearly all countries, the influence of the government over the construction industry is particularly high (Hillerbrandt, 2000).

In general, the government has five aims with regards to economic policy. These are as follows:

a) full employment - the main objective of government policy is to maintain enough demand for labour. But this does not necessarily mean that everyone who is willing to work will be employed.
b) stable prices - the government will be anxious to eliminate or reduce any kind of fluctuation in the general level of prices.
c) a satisfactory balance of payments equilibrium - the government should have adequate foreign currency reserves and be able to borrow from other countries. This is known as deficits necessary to stimulate economic growth. However, in

the long term, a country's export earnings must balance its payments to other countries.

d) an acceptable rate of economic growth - the government should be able to promote steady economic growth for a nation's economy.

e) a redistribution of income and wealth - the government should be able to redistribute the income and wealth of those with higher income together with government spending on a wide range of social services, which later provides important supplements to the real incomes of the lower-income society through systematic taxation (Stanlake, 1984).

2.11 The Mechanism Used by Government to Control the Economy via Policy Implementation

There are several mechanisms used by a government to control its economy. Three major tools used by governments to influence private economic activity are: taxes on incomes and goods and services; expenditures on certain goods and services; and, regulations or control over people that prevent them from performing certain economic activities (Samuelson, 2010).

The tools used can be further categorised under different economic policies, including fiscal policy, monetary policy and growth or supply-side policies (Samuelson, 2010; Case and Fair, 2004). Regardless of the course of action, these policies have considerable impacts on the economy. According to Sirkin (1970), a good policy is one that can be relied upon to make appropriate changes in demand in the right direction. There are several criteria for evaluating economic outcomes, including efficiency, equity, growth and stability (Case and Fair, 2004). For instance, an efficient economic policy is one that produces what people want at the least possible cost.

In terms of equity, a good economic policy should be fair and should increase the total output of an economy. Finally, a good economic policy should produce steady growth with low inflation and full employment of resources (Case and Fair, 2004).

However, it is very difficult to establish an economic policy that includes all four criteria. If the function of economic theory is to help us understand how the world works, the function of economic policy is to maintain growth and tax revenues. There are two types of economic policies; fiscal policies; and, monetary policies. Both policies can be further divided into different types and different objectives.

2.11.1 Fiscal Policies

A fiscal policy is intended to smooth out the fluctuations in the economy within the business cycle (Sloman and Norris, 2005). Fiscal policy influences the levels of aggregate output and employment or prices through changes in government purchases, transfer of payments and/or government taxes (Welch and Welch, 2007; Stanlake, 1984). Fiscal policies can be divided into three different categories: government purchases of current products; tax policy; and, transfer payments.

- ***Government purchases of current products***

Government purchases of current products explain changes in aggregate demand due to changes in government expenditure (Welch and Welch, 2007; Sirkin, 1970). However, this approach has limitations. The additional purchases made by government should either produce services that are its sole responsibility or should produce no services at all. Spending should be used as an anti recession tool. This is especially true when the extra spending would trigger the multiplier effect (Sirkin, 1970).

A government's massive expenditure should yield a marginal utility to the community that is at least equivalent to an equal increase in private consumer purchases. Not all types of government purchases are appropriate to avoid economic fluctuations. As explained by Sirkin (1970), military purchases, unlike expenditures for public works, such as roads, dams or public buildings, has little impact on the economy. However, investments in public works employ the resources of the construction industry. This is important when the industry is likely to suffer from under employment during an economic downturn. This situation indicates the extent of the construction industry's role in weathering an economic downturn, especially when there are lags between the time of deciding on a construction project and its actual construction.

- ***Tax policy***

Changes in imposed taxes are usually made with the aim of controlling aggregate demand through consumption or investment demand (Welch and Welch, 2007; Sirkin, 1970). Tax can be charged to either personal income, sales or excise. Any taxes imposed will have a direct impact on disposable income and consumption (Sirkin, 1970). Taxes will have a relative effect, especially on the marginal propensity to consume among the groups to whom taxes are charged. Taxes are imposed predominantly for several purposes. Firstly, they are one of the means for the government to raise money for government spending (Perloff, 2007; Vosper, 1986). They also help to discourage people from certain types of expenditure by making the items a lot more expensive. Thirdly, taxes are used to redistribute wealth from the rich to those less fortunate. Finally, taxes help to regulate the economy by imposing taxes on goods to overcome demand-pull inflation, and to overcome high unemployment by reducing taxes to promote spending and stimulate the economy (Vosper, 1986).

This policy has an advantage in terms of flexibility and timing, especially when the decision to spend is left to consumers, which requires a small lag between the decision and execution. According to Sirkin (1970), however, there is a disadvantage to this policy, especially when its impacts occur in the economic sector that needs the least correction. In addition to impacts on consumption, tax policy may have an effect on investment demand.

Taxes imposed on business income will cause companies to reduce their intention to undertake business risks, such as new investments or loans. This situation causes the economy to shrink as the private sector reduces its production factors. Another effect on companies is an influence on their business savings because firms' investment decisions are affected by their supplies of internal funding. However, little effect has been found as a result of this policy control (Sirkin, 1970).

There are several types of tax exercised by governments. The main taxes are the direct taxes on income and on capital (Vosper, 1986; Stanlake, 1984). In the United Kingdom, two types of direct tax are imposed, namely income tax and capital tax (Vosper, 1986). Direct taxes are progressive in nature (Office for National Statistics UK, 2009; Vosper, 1986). These two types of tax are further divided into several different taxes such as personal income tax, corporation tax and petroleum revenue tax. Direct taxes on capital also consist of two types of tax, namely capital transfer tax (CTT) and capital gains tax.

Indirect taxes are regressive in nature, which means they take a higher proportion of income from households in the lower part of the income distribution (Office for National Statistics UK, 2009). In another words, they take a smaller percentage of income as

income rises (Vosper, 1986). Examples of indirect taxes practised in the UK are value added tax (VAT), customs duty and excise duty (Vosper, 1986). Examples of both direct and indirect taxes can be referred to in Table 2.1.

Table 2.1 Types of taxes (Vosper, 1986)

Direct taxes	Personal income tax	Imposed on individuals with earnings that can be in the form of a wage, salary, commission on goods sold or even tips received.
		Personal income tax should be paid in a lump sum at the end of the financial year.
		People with regular employment will pay their income tax each time they receive their monthly payment under the Pay As You Earn scheme (PAYE).
		Personal income is collected according to the individual taxable income.
	Corporation tax	Companies are liable to pay tax over their profit each year.
	Petroleum revenue tax (PRT)	This is additional tax imposed by the UK government on companies involved in extracting oil and gas.
	Capital transfer tax (CTT)	This type of tax is also known as the 'gift tax', which includes tax over a transfer of an asset or quite large sums to the inheritors. This is a progressive type of tax.
	Capital gains tax	Should anyone be lucky enough to purchase an antique at a jumble sale for a very small amount of money and later manage to sell it and make a tremendous profit, the profit made is liable for capital gains tax.
Indirect taxes	Value added tax (VAT)	This tax is imposed each time a raw material gains value added, in the course of production.
	Customs duty	Imported goods from abroad will be taxed. The amount of the tax depends on the imported items, such as tobacco, liquor and perfumes.
	Excise duty	Certain goods made within the UK such as refined petrol, whisky and beer will be taxed.

- ***Transfer payments***

This type of economic stabilisation is similar to the use of tax policy to change disposable income. Transfer payments stabilise the economy by collecting only small

amounts of tax revenue, limiting their scope for tax reductions. The main difference between the tax transfer policies is that the transfer policy allows a greater increase in disposable income at the low end of the income scale than that permitted by tax-rate changes (Sirkin, 1970). The main drawback of this method is that it produces controversial social policy issues that distract from the immediate objective of stabilisation.

- ***The public debt***

This approach is usually taken to stabilise the economy at times when the government does not have sufficient funds to improve the economy via spending on public works. Hence, the government borrows money to pay for its investments in public works. This approach, however, is not favourable among the public, especially when the public fears that these debts will make the country poorer (Sirkin, 1970). According to Sirkin (1970), this is partly true because if the national debt becomes sufficiently large relative to the national income, it will produce a real burden on the economy via the tax effect.

2.11.2 Monetary policy

Monetary policy is a deliberate attempt by a reserve bank to influence the supply of money and the levels of interest rates (Sloman and Norris, 2005; Stanlake, 1984).

- ***General monetary controls***

This type of policy controls the quantity of money in circulation. As explained by Sirkin (1970):

"the administration of these controls is ordinarily the function of a central bank equipped with such tools as open-market operations, central bank credit to commercial banks and the regulation of commercial bank reserve requirements".

Similar to other types of economic stabilisers, this type of control suffers from uncertainty about its effectiveness. Two types of uncertainty are derived from this policy. The first is the uncertainty about the specific extent of the monetary authorities' ability to be impervious to or loosen credit conditions via general monetary controls. The second is the uncertainty of the effect of imperviousness or loosening of credit on aggregate demand.

This policy has a higher degree of uncertainty, especially in the effort to increase demand during a recession, than restraining demand during economic booms. Principally, there is no upper limit on the terms of credit. Control over reductions to aggregate demand can be made either by increasing interest rates or via credit rationing. However, in practice, there is a need to consider the political impact of the extent of a tight money policy (Sirkin, 1970).

This type of policy has direct effects on private investment, one sector of the economy that is very unstable. This policy provides rapid stabilisation to fluctuating demand with less dislocation of factors or production than policies that must rely on the roundabout approach of affecting the more stable consumer sector (Sirkin, 1970). Another advantage of utilising this policy is that it is more flexible than other policies.

2.11.3 Selective Credit Controls

The demand for certain types of products can be increased or decreased by controlling the terms of credit applied specifically to these products. Examples of this type of economic control include consumer credit and housing loans. This type of control requires the government to assume an allocation function. Selective credit controls can be applied by making presumptions in the market about serious shortcomings in the functions of the credit market needed to supplanting any level of selective control (Sirkin, 1970). Unfortunately, this approach has drawbacks because it is selective in nature, leaving other markets virtually untouched. Furthermore, certain types of credit may be affected by wide swings, which may be inspired by speculative motives that have a destabilising effect on the economy (Sirkin, 1970).

It is said that the supply of credit behaves in a way that favours consumer over investment borrowing during periods of tight money. For instance, a high return rate on consumer loans attracts sufficient funds to satisfy demand in the area. This means that any restrictions made to credit due to tighter rationing will result in a decrease in business borrowing. One reason for considering the selective credit control policy on special occasions is that it has a direct impact on the misbehaving sector (Sirkin, 1970).

2.11.4 Management of the Public Debt

The public debt, according to Sirkin (1970), is the meeting point of fiscal policy and monetary policy. The scale of the public debt is chosen by fiscal policy. The composition of the debt is usually based on the length of time to maturity and securities issued by the fiscal authorities upon returning the debt or seeking additional

debt. The debt management to income analysis is based on three relationships between debt composition and aggregate demand. They are as follows:

a) shortening the maturity of debt - an increase in the public sector's liabilities does not have effect on the public demand, unlike the private sector. That is, shortening the debt will increase the aggregate demand, and vice versa if the debt is lengthened.
b) changing the period of debt - changing the debt from long term to short term will make the short-term interest lower and the long-term period higher. This may have a selective impact on credit.
c) increasing the quantity of close substitutes due to shortening of debt - this explains the tendency of money holders to opt for short-term public debt rather than a small increase in interest rates (Sirkin, 1970). Therefore, debt management must consider eliminating unnecessary 'slack'. In particular, the maintenance of a debt should not weaken the monetary policy that has been identified as the chief contribution of economic stabilisation.

2.12 Consumer Theory

It is important to understand the economy at the microeconomic level by understanding consumer behaviour. This begins with examining consumer preferences (Perloff, 2007). This is essential as the most obvious limitation on consumption is the level of income. It is very important to analyse a macroeconomic model by looking at the relationship between changes in income and the related changes in consumption and savings (Harvey, 1988; Stanlake, 1984).

The basic formula to measure the relationship is by looking at the marginal propensity to consume (MPC) (Perloff, 2007; Stanlake, 1984).

$$MPC = \frac{\Delta C}{\Delta Y}$$

where C = planned or intended consumption in real terms

Y = income

Consumption function was drawn on the assumption that 'other things remain equal'. it shows the relationship between C and Y in terms of income distribution. That is different income gropus will have different propensities to consume (Stanlake, 1984).

Decisions to spend are influenced by several factors as follows (Harvey, 1988):

a) size of income - a small income limits savings. This is where spending will be on only the basic needs.
b) the time lag in adjusting the spending habit - as income increases, it increases the desire to save. This is due to the time taken by people to adjust to their standard of living.
c) changes in disposable income - increased income increases the direct taxes, thus reducing disposable income.
d) government policy - through its fiscal policy, the government could affect the proportion of income consumed. For instance, a high level of VAT may discourage people from spending for the time being.
e) the distribution of wealth in the community - because of this, there is a tendency to increase total consumption.

f) invention of new consumer goods - the production of the latest gadgets, family cars and the like has induced spending.

g) hire purchase and other credit facilities - increases in repayment period extensions and decreases in initial deposits have also encouraged spending.

h) anticipated changes in the value of money - uncertainty over the value of money in the future as well as inflation will encourage people to spend.

i) the age distribution of the population - it has been noted that people over 35 years of age save more, thus an ageing population will tend to reduce the propensity to consume of the community as a whole.

Apart from the decision to spend explained earlier, the marginal propensity to consume is also affected by Maslow's hierarchy of needs (Williams, 2008; Robbins & Coulter, 2003; Curtis and Curtis, 1997). At the lowest point of the hierarchy of needs, Maslow indicated physiological needs, which consist of the needs for breathing, food, water, sex, homeostasis and excretion. These are considered as the basic needs for every human being. Humans will move to the next level of needs once they have managed to fulfil 75 per cent of the needs in that level (Curtis and Curtis, 1997). The lowest level is always associated with the minimum income received by any household and thus greatly influences the level of household disposable income.

2.13 Malaysian tax system

The Malaysian government has its own measures to control the economy. Similar to the economic theory on mechanisms to manage the economy, the Malaysian government has adopted a similar approach. Through its fiscal policy, the Malaysian government exercises control over the tax and expenditure on certain products and

services. One of the taxes imposed on Malaysian citizens is personal income tax. Meanwhile, through its monetary policy, the government, via the central bank, the Bank Negara Malaysia, exercises control over interest rates and selective credit control. The Malaysian government also introduced selective credit control by imposing a higher tax on certain products based on tobacco. This is to discourage the nation from spending on such items (Bank Negara Malaysia, 2013).

The government, through the Inland Revenue Board of Malaysia, imposes taxes only on those who earn an annual income of MYR26,501 (after EPF deductions). This type of tax is only applicable to Malaysian citizens who receive their income within the Malaysian boundary. Generally, a taxpayer is required to pay tax on all kinds of earnings, including income from their business or profession, employment, dividends, interest, discounts, rent, royalties, premiums, pensions, annuities and others (Inland Revenue Board of Malaysia, 2012).

The Malaysian government also promotes the implementation of income deductions through the Employees Provident Fund (EPF). This is a retirement plan for the private and public sectors in Malaysia enacted by the Employees Provident Fund Act of 1991. The scheme aims to help employees save a proportion of their salary for their retirement, and in case of disability, sickness or unemployment. Income will be automatically deducted from an earner's income if the person has been registered under the scheme by their employer.

As of 2007, employees are required to contribute at least 11% of their salary, with their employers contributing at least an additional 12%. The savings can then be used by the EPF for a wide variety of investments, and the participating employees are repaid

through reinvested dividends. Employees may withdraw 30% of their accumulated EPF savings at the age of 50, and 100% at 55. Once again, this type of fund contribution is only applicable to Malaysian citizens. The deducted income will be invested by the Employees Provident Fund to generate interest for the depositors. The organisation guarantees a 2.5% return on the employees' investments (Employees Provident Fund, 2013).

2.14 Conclusions on Appropriate Government Actions and Policies for Controlling Economic Leakage

Three broad approaches have been identified in discussing stabilisation policies (Brown, 1996). In an attempt to control leakages, governmental influence and interference can be used to manipulate firms' and consumers' spending habits (Friedman, 1975).

One of the measures is to increase banks' interest rates to encourage both households and firms to save money. This measure is based on general monetary control policies. Putting more money in banks, triggers banks' business by enabling them to loan money to firms that seek to expand their business. Another example derived from monetary policy is selective credit controls. These controls are performed by imposing certain percentages of taxation and establishing minimum wage levels that enable the government to manipulate consumers' spending patterns (Case and Fair, 2004; El-Mokadem, 1973).

Based on the equilibrium model, controlling and maintaining equilibrium also maintains and induces more spending by governments due to fiscal policies, particularly in terms of government purchases of current product policies, investors, foreigners and households. In addition to encouraging more expenditure in investments,

governmental domestic purchases and exports, this policy also increases government taxes derived from fiscal policy, particularly tax policies. Imposing taxes under the fiscal policy can also manipulate the household's spending pattern (Vosper, 1986; Stanlake, 1984). An increment in taxes will dampen household purchasing power and limit households' spending budgets.

Hence, it can be concluded that several economic tools and measures are used by the government to control the economy. Each of these measures has its own economic objectives and limitations. Governments should take advantage of their function in the economy to carefully manage and stabilise growth and expansion by utilising several economic models in pursuit of economic benefits for the nation.

2.15 Concluding Remarks

The government can exercise its power to use specific economic tools to solve certain types of economic problems by considering its target group. With the advent of economic modelling, the government can monitor and control employment levels as well as economic equilibrium to fulfil its role. Government can spend on public infrastructures and buildings to help stimulate the economy via the fiscal budget. Although this tool cannot be used frequently, it may be useful in maintaining the economic cycle. Another useful tool to manipulate the economy is the transfer of payments via tax control. The government can increase the income tax to dampen households' and firms' purchasing power during times of inflation, and it can do the opposite to induce spending. In contrast, to encourage people to spend and stimulate the economy, actions such as increasing incomes and reducing taxes are among the means that can be implemented. Overall, economic modelling via fiscal and monetary policies can be a useful means of solving economic problems.

Chapter 3 Construction Industry

3.1 Introduction

This chapter will provide an overall understanding of the general perspective of the construction industry and then explain special characteristics of the industry generally and later concentrates within the context of Peninsular Malaysia. This perspective is important to understanding the special structure of both the construction industry and individual construction projects and to understanding how the industry works internally and in conjunction with other economic sectors that are directly or indirectly involved.

This chapter begins with some definitions of the construction industry, its components and its relationships before proceeding with explanations of the unique characteristics of the construction industry, particularly the activities involved and the products it produces. This chapter also emphasises the function of the construction industry in an economy and explains how the economics of construction projects and the construction industry's economic sector play an important role in shaping the structure of the industry. It also highlights the circular flow of economy within the industry. It further proceeds by explaining the issues within the industry that further shape its special characteristics.

3.2 Definition of the Construction Industry

There are many definitions of the construction industry. However, the description from The International Standard Industrial Classification of all Economic Activities cited by Ofori (1990) defines construction in a statistical sense as follows:

"….constructing, altering, repairing and demolishing buildings; constructing, altering and repairing highways and streets and bridges, viaducts culverts, sewer and water, gas and electricity mains, railway roadbeds, sub-ways and harbor and water ways, piers, airports and parking areas, dams, drainage, irrigation, flood control and water power projects and hydroelectric plants, pipe lines, water wells, athletic fields, golf courses, swimming pools and tennis courts, communication systems such as telephone and telegraph lines, marine construction, such as dredging and under water rock removal, pile riving, land draining and reclamation, and other type of heavy construction…mining services such as preparing and constructing mining sites and drilling crude oil and natural gas wells".

"...the assembly and installation on site of prefabricated, integral parts into bridges, water tanks, storage and warehouse facilities, railroad and elevated right-of-way, lift and escalator, plumbing, sprinkler, central heating, ventilating and air conditioning, lighting and electrical wiring, systems of buildings and all kinds of structures… departments or other units of the manufacturers of the prefabricated parts and equipment which specialize in this work and which it is feasible to treat as separate establishments, as well as businesses primarily engaged in the activities, are classified in this group".

The following is a summary definition of the construction industry as outlined by Ofori (1990) after reviewing several definitions by various parties:

"...a sector of the economy which plans, designs, constructs, alters, maintains, repairs and eventually demolishes buildings of all kinds, civil engineering works, mechanical and electrical engineering structures and other similar works".

Thus the industry includes:

i) persons, enterprises and agencies, both public and private, involved in physical construction; both those whose main activity is construction and the relevant parts of entities engaged in other fields of activity who retain some construction capacity (such as the maintenance unit of a university or a manufacturing enterprise); and

ii) those providing all kinds of planning, design, supervisory and managerial services relating to construction.

Similarly, Malaysia has also generated its own definition of the construction industry, as indicated by the Malaysia Industrial Classification (1972) and cited by Abdullah (2004). The definition is as follows:

"the assembly and installation on site of prefabricated, integral parts into bridges, water tanks, storage and warehouse facilities, railroad and elevated right-of-way, lift and escalator, plumbing, sprinkler, central heating, ventilating and air-conditioning, lighting and electrical wiring, systems of buildings and all kinds of structures… departments or other units of the manufacturers of the prefabricated parts and equipment which specialise in this work and which it is feasible to treat as separate establishments, as well as businesses primarily engaged in the activity are classified in this group".

Hence, from this list of definitions, it can be concluded that the activities categorised under "construction" include not only the activities that take place but also the parties responsible for the implementation of each product.

An overview of construction industry, including its activities, economic aspects and management is provided in Figure 3.1.

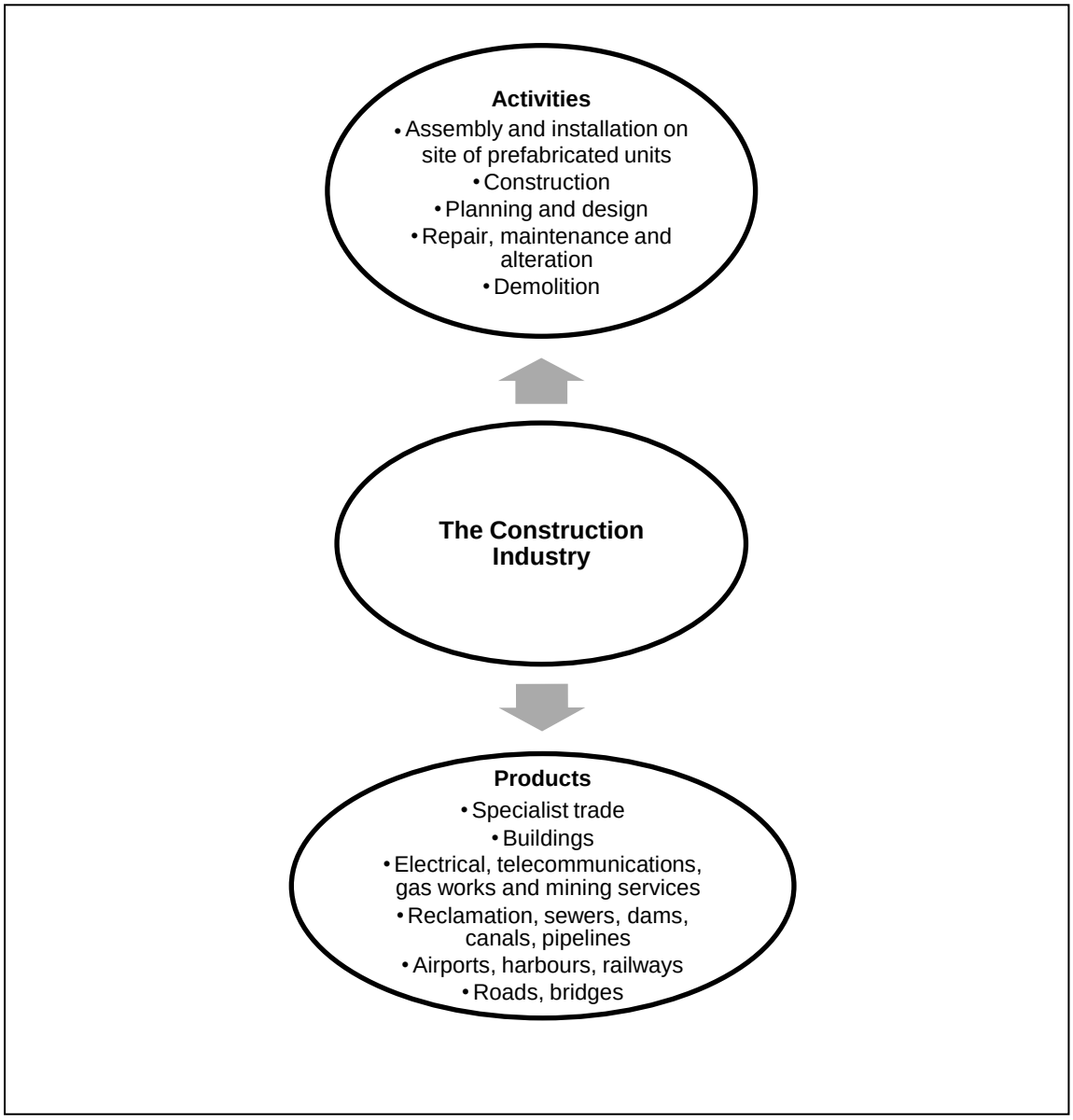


Figure 3.1 The Construction Industry. Adapted from Ofori, (1990)

Both the definition and the figure show that the construction industry creates many products from several different activities. This is supported by Ashworth (2004) and by (Ahmad, 2001) in his definition of the construction industry as an industry that includes building, civil engineering and process plant engineering. The industry is also concerned with planning, regulation, design, manufacture, installation and maintenance of buildings and other structures.

Hence, the industry has the advantage of being able to create and manipulate the economic performance of a nation from many perspectives, which means that the construction industry plays an important role regardless of the country's level of economic development. This signifies the economic cycle flow from one point to another and the multiplier effects it creates.

3.3 An Overview of the Construction Industry

The construction industry possesses a unique character that distinguishes it from other sectors (Ashworth, 2004). The products of the industry are mainly large in size (Hillerbrandt, 2000), dependent largely on the government as a client, require large capital investment, are of a unique nature, employ a variety of construction technologies, require unique project organisation, require a long time periods involving a time lags and have a special structure (Ofori, 1990).

An end product is usually discussed not in terms of its design but in the way it is constructed in accordance with the location of the site due to its size, costs and mass. An additional unique characteristic of an end product is its high dependence on labour (Zaki et al., 2012; Abdul-Aziz, 2001; Hillerbrandt, 2000; Egan, 1998), which is greater than many other industries, especially manufacturing. This characteristic makes construction a sector that influences demand and supply levels, and particularly the employment rate, in the general economy (Hillerbrandt, 2000).

The construction industry also plays an important role in the development process (Abdullah, 2004) and it is known to be the pillars of the domestic economy (Egan, 1998) because demand for construction work increases during economic growth due to increased demand for buildings and improved prospects in the industry (Seeley, 1998).

The output of the construction industry is referred to as growth-initiating and growth-dependent output (Abdullah, 2004) as the industry is by far the most important aspect in creating new value for the societies (Winch, 2002).

3.4 The Characteristics of the Industry

In many ways, the industry is different from many other economic sectors, particularly in terms of its activities and end products (Ashworth, 2004; Ofori, 1990). To some extent, each of construction projects is unique (Ofori, 1990) and discrete (Ive and Gruneberg, 2000); there will be no identical jobs, despite the existence of similar designs (Sears et. al, 2008).

Several authors in the construction economics field have attempted to describe the main features of the industry. For instance, according to Turin (1980), the primary features of construction projects are that they are immobile, unique, heavy, bulky, complex, expensive and very durable and that they require long periods of time to complete. The industry is also known to be heterogeneous (Ive and Gruneberg, 2000; Sear et. al, 2008) and enormously complex (Sears et. al, 2008; Stone, 1983). After having reviewed works from several other authors on special characteristics of the construction industry, Ofori (1990) lists the following characteristics.

3.4.1 Size

Construction outputs are mainly large in size, immobile (Ashworth, 2004; Ofori, 1990), heavy and expensive (Hillerbrandt, 2000). Hence, it is necessary to plan investments before execution to ensure a return (Ofori, 1990).

3.4.2 The Government as a Client

The industry has close links with the government. This is particularly true when one of the main clients of the industry is the government because of the large capital investment required to build buildings and infrastructure (Ofori, 1990). Approximately 30 per cent of government spending is allocated to construction output (Seeley, 1996). Moreover, the government is responsible for providing buildings, infrastructure and services because the public is the responsibility and duty of the government (Ofori, 1990).

3.4.3 High Cost

The output of the industry requires huge amounts of investment. It is then necessary to conduct feasibility studies on a project's viability to ensure return on the investments made by clients. Although some clients might want to occupy the products themselves, this option is still considered to be risky.

3.4.4 Nature of Demand

Project installation requires different resources at different stages of the construction process. Hence, it is difficult for contractors and firms to plan continuous work for their employees. In addition, the product is fixed to the ground, distinguishing it from other products in the economy (Ofori, 1990).

3.4.5 Durability

Construction products are very durable compared to other types of products (Seeley, 1998; Ofori, 1990). This durability is necessary to meet the design constraints and regulatory requirements and to ensure safe occupancy. Hence, construction products

should be made of durable materials and components. As a consequence, the product cannot be altered easily, and considerable cost is required to make changes. The products of the construction industry often symbolise a society's successes as well as its failures (Ofori, 1990).

3.4.6 Nature of Work

The nature of construction work can be described by the '3Ds': dirty, difficult and dangerous (Mustapa and Pasquire, 2008; CIDB Malaysia, 2007; International Labour Organization, 2001). Construction work is heavily labour-intensive (Hillerbrandt, 2000; Ofori, 1990). Its outdoor nature exposes workers to extreme weather conditions. The site is usually dirty, hazardous and untidy. The placement of building materials, construction plants and machines exposes the workers to hazards. The fatality rate in the construction industry is relatively high compared to other sectors (Omran et. al, 2008; Ofori, 1990).

3.4.7 Technology

The construction industry uses a much broader array of technologies than does the manufacturing industry (Ofori, 1990). This is mainly due to the fact that many of its projects are one-off designs (Ashworth, 2004). However, the pace of technological change in the construction industry has not proceeded at the pace enjoyed by the manufacturing sector (Levy, 2010). Unlike other technologies that tend to become obsolete over time, new technologies in the construction industry tend to be adapted from old technologies. In other words, the construction industry improves on the old technology instead of changing it completely. This tendency shows that the industry is adaptable to technological change (Ofori, 1990).

3.4.8 Organisation

As previously stated, the process of the construction industry can be regarded as temporary. That is, temporary organisations are set up for a particular project. The temporary organisation consists of professional teams and contractors. These teams will be disbanded at the end of the construction period (Ashworth, 2004; Ive and Gruneberg, 2000; Ofori, 1990) and will move on to different construction projects (Ive and Gruneberg, 2000).

Similarly, workers do not stay permanently at the construction site. They will move to another construction location for new work. This constant change causes communication between team members to be restricted as new people are introduced in new construction projects (Ofori, 1990).

3.4.9 Time Lag

The industry is notorious for delays in completion time (Sambasiva and Yau, 2007; Wan Abdullah and Ramly, 2006). These delays result from the nature of the construction components and the process itself. The site might be delayed for several reasons, namely unpredictable weather, labour shortages, delays in building materials supply, changes in construction drawing and many others.

In Sambasiva and Yau's (2007) research on causes and effects of delays, they find the ten most important causes such as, contractors' improper planning, contractors' poor site management; inadequate contractor experience; inadequate client finance and payments for completed work; problems with subcontractors; shortage of material; labour supply; equipment availability and failure; lack of communication between parties; and, mistakes during the construction stage.

Hence, the production of the output needs to be planned properly by taking these considerations into account (Ofori, 1990).

3.4.10 Structure

The industry's structure reflects the nature of demand for its products, the diversity of project types and the ease of entry into the industry for businesses. The easy entrance might result from outsourcing capacities, technology or other factors. The industry itself consists of high number of construction firms and building material suppliers. Most construction firms are categorised as small- or medium-sized companies (Hillerbrandt, 2000) and specialise to some extent in at least several classes of work (Stone, 1983). However, according to Hillebrandt (2000), all of the companies play an equal role in the industry. It is best to focus on individual components of the construction industry to understand its nature and special characteristics. Ofori has managed to provide an overview of the components of the construction industry, as depicted in Figure 3.2.

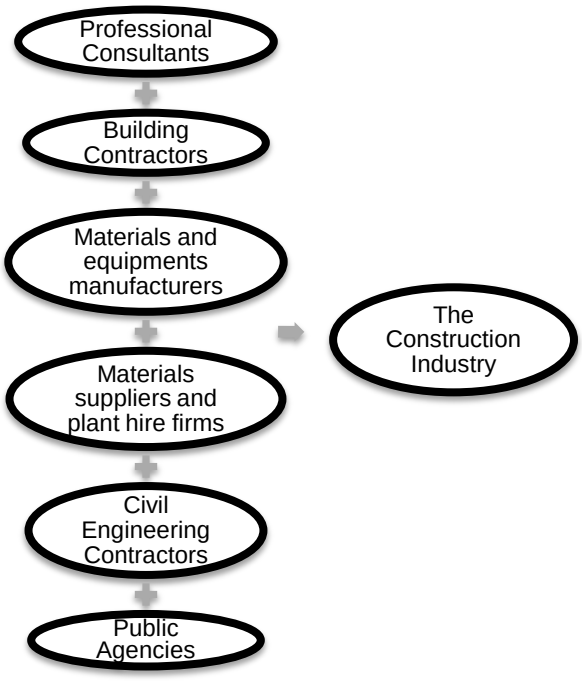


Figure 3.2 Usual Portrayal of the Construction Industry. (Adapted from Ofori, G.,1990)

Figure 3.2 shows that the industry requires inputs from several players to produce its outputs. This requirement demonstrates the importance of the industry in stimulating the economy by building construction projects. Each of the components will later engage other sectors to produce their own products. For example, the construction firms' production function requires labour, machinery, building materials, power and water supplies to perform their tasks. Hence, a construction firm needs to buy building materials from a building material supplier to complete its tasks.

The building material firm has its own production function to fulfil its business tasks. The firm needs to purchase building materials from manufacturers and requires labour supply and transportation to deliver its products. These requirements stimulate other businesses as well. Thus, the function of the construction industry is to promote economic growth or to stimulate the economy during a downturn.

3.5 The Construction Process

The construction industry engages in a unique production process (Ofori, 1990). The total development of a construction project usually consists of several stages requiring diversified specialised services (Sears et. al, 2008). The whole process can be divided into different stages, where each of the stages requires different objectives and participants.

Table 3.1 shows that within the construction process itself, many parties other than the professionals and the construction firms will be directly involved. This involvement reflects the flow of the economic cycle and confirms the function of the construction industry as the economic regulator of a country.

Table 3.1 Activities at Various Stage of a Construction Project. (Adapted from Ofori, 1990; Flanagan and Tate, 1997)

Substage	Participants	Activities
Inception	Client, Land Owner, Valuers, Financial Institutions, Ministry in charge of lands, Town Planner, Architect / Engineer.	Clients considers project requirements, acquires land, sets up project team, appoints and briefs Architect / Engineer.
Feasibility	Client, Architect, Engineer, Quantity Surveyor	Carry out studies of user requirements, site condition, planning, design, cost, etc., as necessary to reach decisions.
Outline Proposal	Architect/Engineer, Quantity Surveyor, Structural Engineer, Services Engineers, Other consultants, Planning department, Client	Members of the design team develop brief, consider the technical and functional feasibility of the client's intentions, and make general proposals for the project including form, layout, and height and floor area. Architect applies for outline planning approval.
Scheme design	Architect/Engineer, Quantity Surveyor, Structural Engineer, Services Engineers, Other Consultants, Specialist contractors as consultants, Client, Development Control authority, Agencies responsible for public health and environmental control	Architect/Engineer finalises brief and with other consultants, prepares sketch designs which are submitted to the client for approval.
Detailed design	Same participants as at scheme design stage, building control authority	Design team prepares the full design of every part of the project and all relevant production information and contract documentation. Architect applies for building plan approval. Complete cost design.
Production information	Same participants as at scheme design stage, building control authority	Preparation of final production information, i.e. drawings, schedules and specifications.
Bills of Quantities	Architect/Engineer, Quantity Surveyor, Structural Engineer, Services Engineers, Other Consultants, Specialist contractors as consultants	Preparation of Bills of Quantities and tender documentation.
Tender	Architect/Engineer, Main Contractors, Services Engineers, Client	Architect/Engineer invites tenders. Quantity Surveyor evaluates them and reports to architect/engineer who recommends suitable contractor to the client. Client signs a contract with the successful bidder.

Project planning	Architect/Engineer, Main Contractor, Subcontractors, Client	Main contractor lets specialist and other contracts, prepares a programme for the project and mobilises resources for construction on site.
Site preparations	Architect/Engineer, Quantity Surveyor, Structural Engineer, Services Engineers, other consultants, Main Contractor, Subcontractors, material and components producers, suppliers, plant hire firms, building control authority. Ministry of Labour, Trade Union	Main contractor and subcontractors transform the production information into physical facility. Members of the design team supervise construction. Architect/Engineer arranges and presides over site meetings. On completion of the building, client or Architect applies for a temporary occupation license, which, if require, is granted by the building control authority after it has inspected the building and tested the equipment and installations. An application for a final certificate of completion may be required after more stringent tests at a later date.
Operation	Client. Architect/Engineer, Quantity Surveyor, Main Contractor, Subcontractors, Suppliers, public agency in charge of building maintenance, property management consultant	All faults becoming evident during the defects liability period are made good by the contractor. Quantity Surveyor prepares the final account for the project. Client arranges for the management and maintenance of the facility; a professional estate management consultant may be retained.

3.6 Aspects of Construction Project Economics

According to Ofori's (1990) explanation of construction project economics, five main components form the basic economics of a construction project. The overall process begins with the translation of the client's needs into the costs required to complete the work (Othman, 2004). The phases of the process include the development phase, construction phase, completion and occupation (Sears et. al, 2008; Ofori, 1990). A project appraisal, in which the purpose of the project is justified in terms of profit

generation, is also required (Ive and Grunberg, 2000; Seeley, 1996), in their explanation of the nature of construction as a process, stress the fact that construction projects are often unique and are discussed in terms of design, purpose and location, thus making production a single or small batch process rather than mass or repetitive process.

A construction project itself can be defined as a sequence of unique, complex and connected activities having one goal or purpose and that must be completed by a specific time, within budget and according to specification (Wysocki and McGary, 2003). According to Peter Morris, project management is a toolbox approach to deliver a project mission (Winch, 2002).

The progress of the construction project requires input from several parties, such as financial organisations, government agencies, engineers, architects, lawyers, insurance agents and surety companies, contractors, material manufacturers and suppliers and building tradesman (Sears, et.al, 2008). Abdul Rashid (2011), in his description of the economics of construction project procurement, highlights the process of acquiring a construction job and meeting the client's needs as well as choosing parties to design, build and supervise the work.

The economics of the project are also dependent on the timing of when the work commences and when it will finish. The author also notes that the distribution of each party's rights, duties and responsibilities; the degree certainty regarding the design, price and timing; and the organisational and managerial approach are all bound to have implications for the total construction costs and hence become a part of the economics of construction project procurement (Abdul Rashid, 2011).

3.7 Construction Industry in an Economy

The construction industry is important to an economy and contributes significantly due to its large output (Levy, 2010; Hillerbrandt, 2000; Seeley, 1998). Furthermore, the industry's output is used by other sectors in the economy as a means for production (Ive and Gruneberg, 2000; Ofori, 1990).

There are three characteristics of the construction industry that make it an important sector in an economy. These characteristics are; its size, especially with regard to GDP contribution; its function as an investment industry due to the nature of its output, its large scope and costs; and, finally its close link with the government (Ashworth, 2004; Hillerbrandt, 2000; Ofori, 1990).

The main reason for the construction industry's close link with the government is that the products the industry produces are widely needed but too expensive for individuals to pay for themselves. An example of this type of product is a road. The second reason for the close link is that the provision of these types of goods or services has been regarded as the government's responsibility, especially when the government is elected. Entities such as schools, hospitals, electricity and clean water supply are some of the things provided by government (Hillerbrandt, 2000).

Finally, the third important reason for the link between the government and construction is that the production of goods and services generated from utilities such as electricity can be conducted on a large scale with low operating costs. Therefore, it is cheaper for a single entity to build and maintained them (Hillerbrandt, 2000).

According to Bon (1992), the contribution of the construction industry, especially its GDP share, follows the three stages of economic development, as illustrated in Figure 3.3.

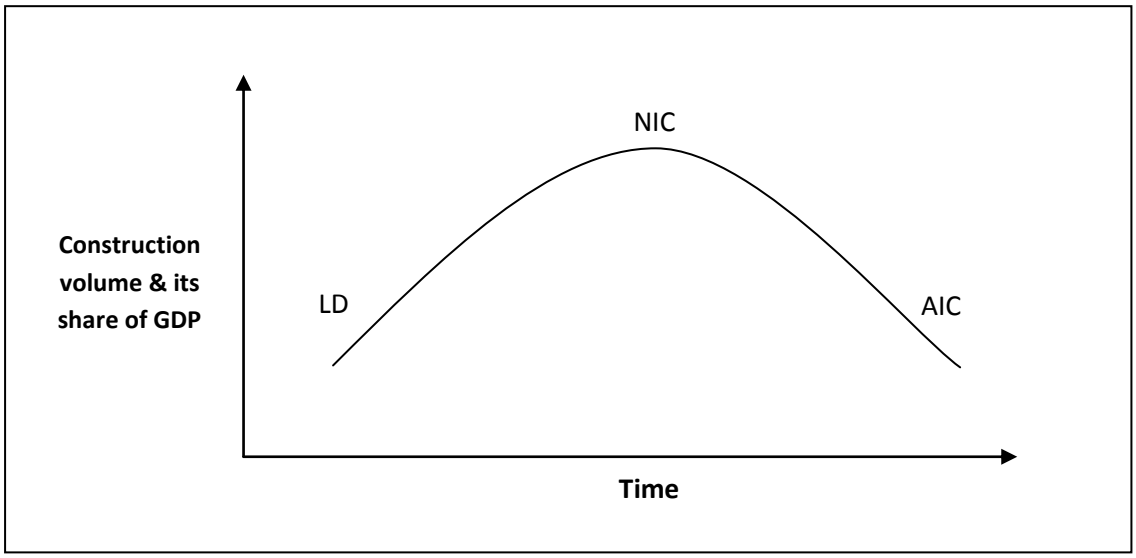


Figure 3.3 Construction's share of the GDP in relation to the different stages of economic development. (Adapted from Bon, 1992)

The figure depicts long-term trends. The graph does not represent actual mathematical relationships but is a mere visual aid. It can be observed that during the early stages of a country's economic development, particularly in a less developed country, the basic infrastructure of the country is still in its initial phase. Hence, the contribution of the industry is still low compared to other economic stages.

As the economy grows, more infrastructures are built, and thus, the industry contributes a larger share of the GDP to the economy. However, during the later stages of economic development, as a result of well-established infrastructure and private developments, the contribution of the construction industry shifts to repair and maintenance work as the infrastructure and both public and private buildings need to be maintained to continue their function as an economy's production factors (Bon, 1992).

3.8 The Construction Industry as a Catalyst for Economic Growth

The construction industry acts as an economic multiplier and accelerator (Ashworth, 2004; Winch, 2002; CIDB Malaysia, n.d). The idea of economic multipliers and accelerators emerges from key economic concepts. The multiplier effect occurs when a change in the level of investment in income and employment occurs in an economy and the increase in the value of aggregate demand increase is greater than the amount of the original investment value (Ive and Gruneberg, 2000).

This is due to the wide variety of activities undertaken in the industry, and depends on the size and type of projects as well as the professional and trade skills required. Project costs can themselves vary from a few hundred pounds to several million pounds (Ashworth, 2004). In other words, during an economic downturn, construction demand should be increased to revive economic activity through the multiplier effect (Stone, 1983).

This concept is supported by Abdullah (2004) who, citing the work of Henriod (1984), shows that during a phase of rapid economic development, the construction industry grows faster than the economy, reflecting the cumulative interaction of multiplier and accelerator effects of construction demand due to changes in economy as whole.

The accelerator effect in the construction industry takes place when a small change in the demand for consumer goods and services such as food, clothing and household appliances increases due to an increase in demand for the factors of production used to satisfy such demands (Ive and Gruneberg, 2000; Ofori, 1990). For example, the expansion of a factory and could increase demand for the production of plant and

building services. However, this effect can only be used when there is capacity in the production function due to several factors, including those described below:

- ***existence of surplus capacity*** - there usually is some surplus in capacity, which also known as idle productivity. Rather than building an extra space and machines to satisfy increased demand, it is possible to increase employment either by hiring new contract workers or allowing overtime or shift working.

- ***possibility of modification and alterations*** - most of the industrial buildings can be modified by altering the positions of their current plant and machinery. Hence, building a new building does not seem to be economically efficient.

- ***no guarantee in continuity of demand*** - there is no guarantee that the increase in demand will continue. For this reason, the entrepreneur will be selective in responding to the increase in demand immediately.

- ***willingness of entrepreneur*** - the willingness of the entrepreneur is subjective. He may not want to increase his capacity through increased investment due to liquidity and profitability analysis. It may not be wise to increase the cost of production to respond to the increase in demand.

- ***constraints on expansion*** - there might be constraints on expansion due to government policies such as the cost and availability of credit facilities or physical controls on development due to environmental impact control or land acquisition.

- ***technological change*** - technological change may reflect the need for new buildings. The need for technological change will continue. Hence, the increase in demand will fluctuate (Ive and Gruneberg, 2000; Hillerbrandt, 2000; Ofori, 1990).

In addition, the government could increase their spending to stimulate the economy through building public infrastructure and public buildings or by reducing the income tax of a household to encourage spending.

Thus, it can be concluded that the accelerator effect has several limitations due to the hesitation of entrepreneurs to respond to increased demand by increasing their capacity. Nonetheless, the willingness of entrepreneurs to invest can be controlled as firms might be made more willing to respond to the demand by special provisions given by the government to encourage firms to expand their business such as the introduction of special credit facilities or tax exemptions.

3.9 Demand and Supply in the Construction Industry

In general, demand for the construction industry's output comes from housing, industrial and commercial buildings, social-type construction and refurbishment, repair and maintenance (Hillerbrandt, 2000; Ofori, 1990). The determination of construction demand is complex due to the aforementioned characteristics of the construction industry (Hillerbrandt, 2000).

There are four persons or institutions involved in the creation of construction demand, namely; the user; the owner; the financier; and, the initiator. It can be argued that government can be added as one of the demand creators that have substantial influence on the environment (Hillerbrandt, 2000). In addition, Ive and Grunberg (2000) noted that demand for construction depends heavily on business decisions that are based on confidence and potential. However, in most government-owned projects, economic appraisal is the least important factor, as it is mostly understood that it is the responsibility of the government to provide public buildings and infrastructure (Hillerbrandt, 2000).

3.10 Construction Industry's Factors of Production

In many ways, the industrial process is concerned with converting inputs from several resources into the desired outputs. These resources are collectively known as the factors of production and include land, labour, and capital (Ive and Gruneberg, 2000). Similarly, the construction industry also requires several inputs (Ofori, 1990). In the factors of production, land refers to the use of the natural stock of resources such as land; while capital refers to the use of accumulated stocks of resources that includes materials, plants and machinery. Finally, labour refers to the use of human productive powers and their capacity in terms of their knowledge, skill and effort (Ive and Gruneberg, 2000). Because construction is a key factor in expanding the economy, it is important to use these resources to the greatest advantage (Seeley, 1996).

However, there are several limitations on the availability of these resources, and it is advisable to continually predict the level of demand in the future and to improve annual predictions and use these predictions to inform resource use planning during the time frames of the predictions. Moreover, there is also a need to continually assess the resources needed and refine annual analyses by continually surveying the availability of resources. Lastly, it is advisable to compare demand with the stock of available resources and respond to ensure equilibrium in meeting the demand for available resources (Seeley, 1996).

The production of construction output requires longer durations than most other economic activities. Normally, a single construction project requires at least 12 months to be completed. The more complex the building design, the longer the construction duration needed. This makes the construction industry an industry that, unlike other

sectors, requires firms to be selective in purchasing their production function. Moreover, there is not any certainty that the construction firm will have a new construction project immediately at the end of their current project. This is partly due to uncertainty in the awarding of new projects resulting from the tendering system (Ive and Gruneberg, 2000; Ofori, 1990).

Hence, the cheapest way for a firm to reduce its business risk is to outsource its capabilities (Abdul-Aziz, 2001; Ofori, 1990) and strategise for survival by minimising overhead and fixed costs (Gruneberg, 2000). This reduction in overhead costs can be achieved by hiring workers from Labour Only Supply Contractors and hiring plants and machinery to perform construction tasks and activities (Ive and Gruneberg, 2000; Ofori, 1990;).

The construction industry employs a huge number of workers (Ajis et. al., 2010; CIDB Malaysia, 2007; Hillerbrandt, 2000; Seeley, 1998) due to the aforementioned characteristics. Hence, the industry is important not only for stimulating the economy but also for creating purchasing power among citizens. This further strengthens the crucial role of the construction industry in a country.

Due to the nature of their work, construction workers are transient (Mustapa and Pasquire, 2008) and will not stay on the same construction site permanently (Jayawardane and Gunawardena, 1998). They are hired on a project basis and made redundant on project completion (Abdul-Rahman et. al., 2012). This scenario affects their lifestyle and spending habits in the host countries.

3.11 Measuring Construction Output in the Economy

There are several metrics used by different countries to measure the total value of construction output in the economy (Abdullah, 2004). The most common measures are calculating the gross output, capital formation and value added (Ofori, 1990; Ive and Gruneberg, 2000). These measures are based on the industry's production within a particular period, covering both completed and on-going projects, new and repair and maintenance work and any other construction activities within the country, including those performed by both local and foreign construction organisations. These different economic measures are concerned with different aspects of construction outputs (Abdullah, 2004).

3.11.1 Gross Output

Gross output refers to measurement of the total production of the construction industry, usually measured in producer prices, covering the sum of:

a) the total value of new work, repairs and maintenance carried out on the enterprises' own accounts or for clients;
b) the value of sales of the other products of construction enterprises;
c) the sales value of goods sold in the same condition as purchased by construction enterprises;
d) rent received on the buildings, machinery and equipment owned by the enterprises.

Hence, it can be argued that the most comprehensive indicator to capture the construction industry's output within a particular period is gross output.

3.11.2 Capital Formation

There are several definitions of capital information in economy (Ive and Gruneberg, 2000; Ofori, 1990). Capital information can be used to refer to items intended for direct use as factors of production (Abdullah, 2004; Ofori, 1990). For the construction industry, capital formation refers to the total value of the accumulated new construction and accumulated alterations and extensions that significantly improve the utility or prolong the life of buildings or works (Ofori, 1990). The difference between the gross output and capital formation is that gross output includes the value of routine repair and maintenance other than construction by the enterprise, whereas the measurement of capital formation excludes it. Therefore, the value of gross output may be mistakenly measured as larger than the capital formation (Ive and Gruneberg, 2000; Ofori, 1990).

3.11.3 Value Added

Value added is used to assess the relative importance of the various sectors of a country's economy. Value added by a productive process refers to the difference between the value of the product at the end of the process and the value of the inputs used in its production (Ive and Gruneberg, 2000; Ofori, 1990). In simpler terms, value added in construction usually refers to the contribution of the industry to GDP, including salaries and wages of employees, interest on borrowed capital, net rent, profit and allowance for depreciation (Ive and Gruneberg, 2000; Ofori, 1990; CIDB Malaysia, n.d).

Of the three economic performance measures used for the industry, measuring value added reflects the actual production of the industry and hence becomes a useful means to compare the relative size of economics sectors in a given country. Additionally, presenting value added as a percentage of GDP is the appropriate means

of indicating the role of the industry in national economy. For instance, the measurement of value added also measures the income received by construction workers (Ofori, 1990), reflecting the impact of construction projects on the economy.

3.12 Team Member in Construction Project

Turner and Muller (2003) define a project as an endeavour in which human, material and financial resources are organised in a novel way, to undertake a unique scope of work, of given specification, within constraints of cost and time, so as to achieve beneficial change defined by quantitative and qualitative objectives. From this definition, it can be seen that a project is about combining several resources and translating them into the desired goal, within certain limitations.

From the construction point of view, ‘project team’ or ‘project integration’ often refers to collaborative working practices, methods and behaviours that promote an environment where information is freely exchanged among the various parties. It is the nature within the construction team where various skills and knowledge is shared by eliminating traditional barriers that separates the design process and the construction activities in return to improved project delivery (Baiden and Price, 2011).

Figure 3.4 below depicts the integration of several parties in pursuing the construction project goal (Territories, Northwest, 2013). Each member of the team plays an important role in ensuring successful project delivery (Wan Abdullah and Ramly, 2006). However, the effectiveness of the integrated construction project team is always limited.

This is clearly linked to the transient nature of the construction project, where the project team will be abandoned at the end of project completion (Turner and Muller, 2003). It was stated in the Egan Report (1998) that the industry is fragmented and that there is a need to address this problem to improve the image of the construction industry.

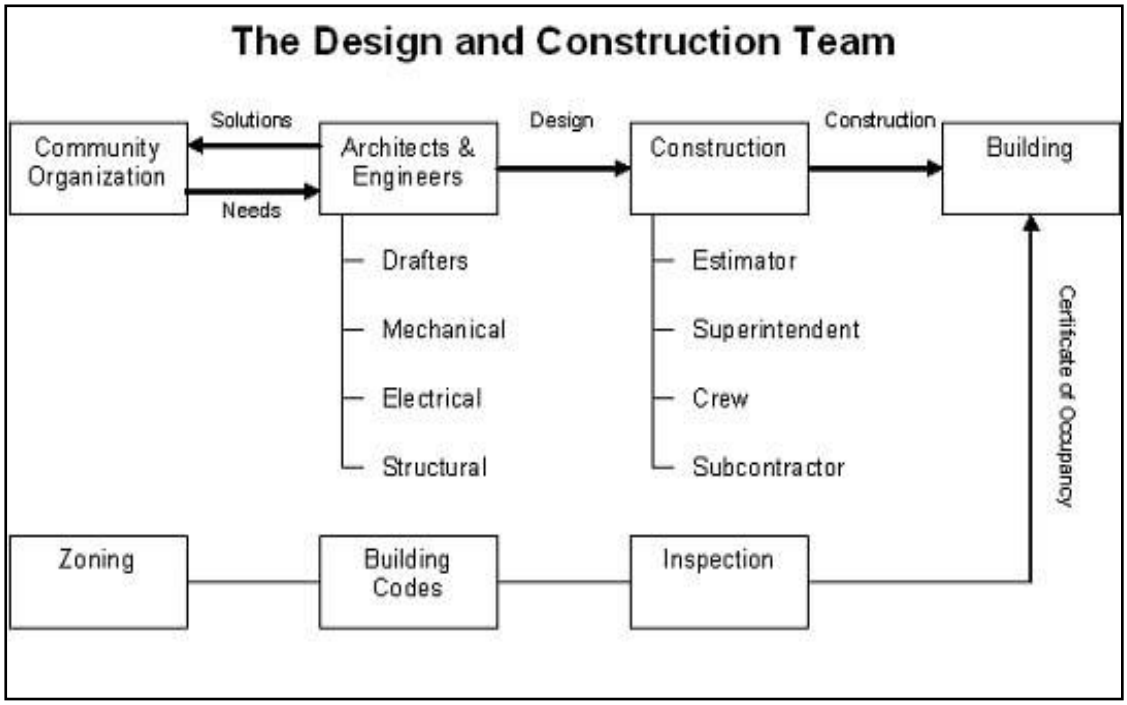


Figure 3.4 The typical design and construction team in construction (Territories, Northwest, 2013)

The nature of a construction project team as a temporary organisation will very much affect the lifestyle of the construction team members. The most affected team member is the construction crew or better known as construction labour as they are hired based on productivity basis by the construction firms to sustain their financial cash flow through outsourcing of resources.

3.13 Overview of the Malaysian Construction Industry

Despite its small contribution to Malaysia's GDP of 5.7% in 2011 (CIDB Malaysia, 2009), the number decreases to 3.5% in 2012 and increase slightly to 3.7% in 2013 (Malaysian Economic Report 2013/2014). The Malaysian construction industry plays a role that is equal in importance to that of other industries, especially in that acts as catalyst and provides a multiplier effect to other industries such as manufacturing, professional service and education.

The Malaysian government is one of the biggest contributors to construction project development as it provides the nation's infrastructure (CIDB Malaysia, 2007; Abdullah, 2004; Abdul Rashid, 1998). This is reflected in most of the Federal Government spending in the period 2006-2009, during which over MYR134.2 billion was spent by the government under the Ninth Malaysia Plan (9MP), as well as in the contributions from high-value fiscal stimulus package projects.

There has been a reduction in the number of large-scale infrastructure projects due to the completion of a number of major projects approximately seven years ago, and this is in tandem with the global economic momentum. Due to that, there has been a decrease of 29.5% in terms of value compared to the MYR81.1 billion of projects awarded in 2008. It is understood that the decrease in value is due to the decline in investment by the private sector.

However, the government has initiated a few mega-projects to stimulate the economy, such as the Iskandar Region project in Johor worth MYR100 Billion. This is illustrated in Figure 3.5.

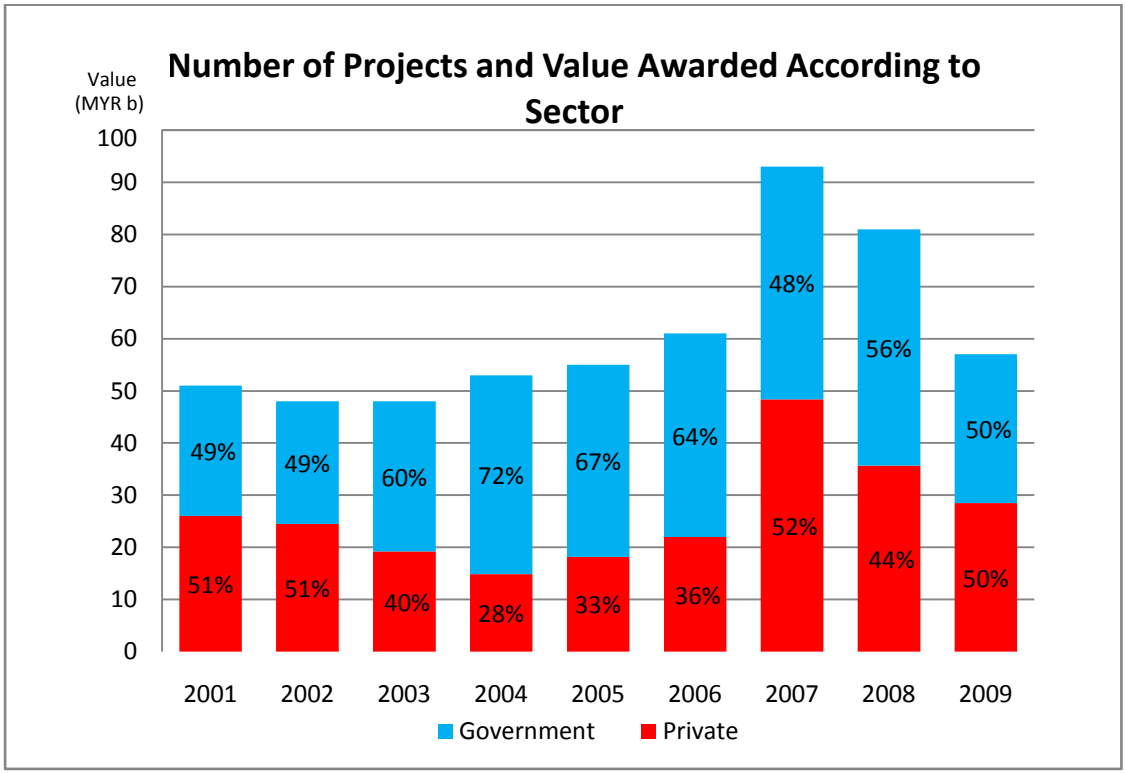


Figure 3.5 Value of Public and Private Contracts Awarded from 2001 - 2009. Source: CIDB Malaysia (2009).

The total value of construction work during the first half of 2013 rose 13.8% to MYR43.3 billion, with the highest share contributed by civil engineering activities, at 36.1%. Ongoing infrastructure projects and corridor development include the Besraya eastern extension; the Seremban - Gemas - Johor electrified double-tracking project; and, the extension of the Kelana Jaya and Ampang Light Rail Transit (LRT) lines; as well as an Express Rail Link (ERL) from KLIA to KLIA2 (Ministry of Finance Malaysia, 2013).

The construction industry's business cycle fluctuates predictably, making it a sector that can be predicted more confidently than other industries that have more fluctuations. Accordingly, a review of GDP and construction growth trends over a 30-year period shows a pattern where the business cycle swings endured by the

construction industry noticeably exceed those indicated by the movement of GDP (Abdullah, 2004).

Overall, the Malaysian construction industry has managed to influence its economic development by implementing public infrastructure. Being a country with moderate industrialisation, Malaysia's economy is still expanding and most of the recent economic stimulation was due to the government's expenditure on public infrastructure. This shows that both the industry and the government play an influential role in managing economic performance.

3.14 Structure of the Malaysian Construction Industry

The construction industry comprises of several components that are interdependent (Abdul Rashid, 1998). The components can be categorised using economic and operational perspectives. From an operational perspective, the Malaysian construction industry is made up of various groups and grades of general and specialist contractors; different engineering, architectural and quantity surveying firms; building materials suppliers; and plant hirers (Abdul Rashid, 1998).

In Figure 3.6, it can be observed that there are several government departments and agencies responsible for managing and regulating the Malaysian construction industry. For example, the function of the Ministry of Work is to supervise and direct the departments and agencies under its agencies.

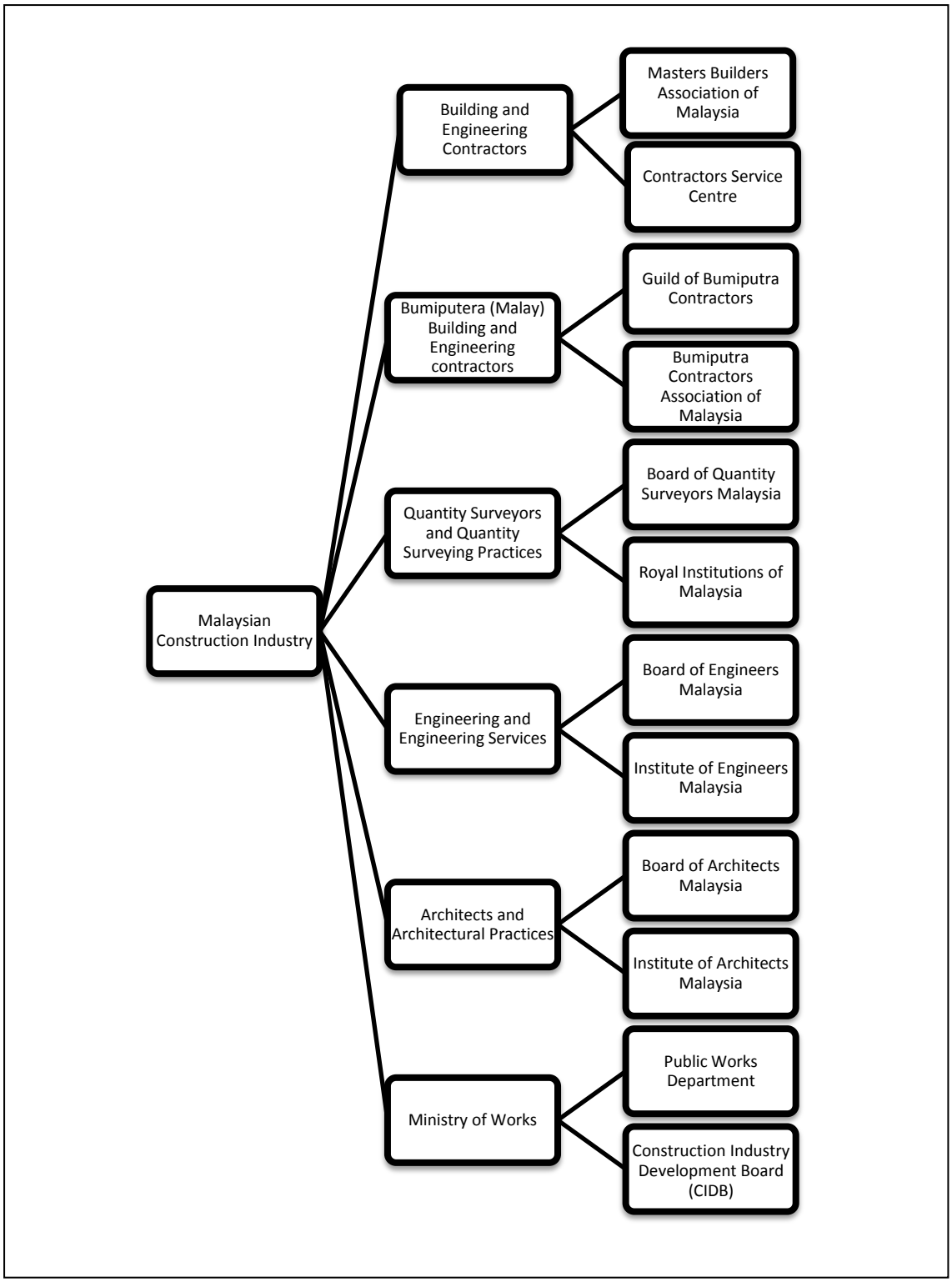


Figure 3.6 The Components of the Malaysian Construction Industry. Adopted and updated from Abdul Rashid, (1998).

The departments and agencies have their own roles and responsibilities relating to the construction industry. The Public Works Department is responsible for planning and monitoring the execution of the government's public projects, including both buildings and infrastructure, by preparing the tender and selecting the most appropriate construction firms. The CIDB, however, is responsible as the main regulatory agency for the construction industry.

3.15 Problems in Peninsular Malaysia Construction Industry

It was noted in the Malaysian Construction Industry Master Plan prepared by the Construction Industry Development Board of Malaysia (2007) that there are several problems faced by the Malaysian construction industry. They are organised under five categories:

i) productivity and quality enhancement;

ii) inefficient and ineffective methods and practices;

iii) inability to attract and develop a local workforce for the industry;

iv) inability to provide total integrated solutions; and

v) difficulty in securing timely and adequate financing.

The problems faced by the Malaysian construction industry are quite similar to the problems faced by other countries, namely the UK. The differences are mainly in the degree of severity of each problem. For instance, the quality of the construction products in Malaysia is considered low. The low qualities not the fault of the standards and construction processes outlined by the Malaysian Public Works Department; rather, this problem emerges from a lack of monitoring of the actual construction process and the prevalent use of unskilled immigrant construction workers.

This was supported by Narayanan and Lai (2005), that the use of immigrant workers has increased the need for supervision and quality control to achieve the minimum standard of the construction quality. The inefficiency and ineffective methods adopted by the industry result from capacity limitations. The production functions of the industry are still considered too expensive to be owned by any one firm. Hence, the means and process of outsourcing the components of construction restricts construction planning and flow.

The construction industry is famous for its high dependence on immigrant labour. This dependence is due to the unattractive nature of construction work; among local labourers, construction is known for its '3D' image - dirty, difficult and dangerous (CIDB Malaysia, 2007; Mohd Yusof, 2005), and also low wages that fail to attract local workers (Narayanan and Lai, 2005). The cheap solution of immigrant labour is very much preferred among the construction firms in order to reduce their liabilities. Hence, the presence of immigrant construction workers is vital to offset the increasing construction costs, as the wage rates of immigrant workers are low (Lee and Sivananthiran, 1996). There are attempts by a subsidiary of CIDB, known as ABM, to address the problem of construction labour supply by creating a special academy for training local labour, however, the response received is still low.

The image of the construction industry is also unattractive to the public (Zaki et al. 2012). The image emerges as a result of the poor condition of the temporary on-site accommodation prepared by the construction firms to house their workers. However, the poor condition of the temporary accommodation is unacceptable to human wellbeing.

Although some guidelines have been set out by the Department of Labour with regard to minimum requirements for the quality of accommodation under the Minimum Standard for Immigrant Workers Accommodation and Facilities 1990 (Department of Labour of Peninsular Malaysia; Kobarajah, 2001), their implementation has not been full. Hence, workers are denied their right to adequate living conditions and this problem affects the spending patterns of the immigrant workers, as there is no place for them to safely keep their belongings.

The structure of the industry makes it difficult to provide total integrated solutions. The temporary nature of the construction teams also makes it difficult to provide integrated solutions. Each time a construction project finishes, the team will be disbanded; therefore, networking and the development of an understanding of each other's role and responsibilities stops. The transitory nature of the construction project will impact construction labourers' spending; it will be further affected should the site be located in a rural area where not many service and utilities are available, making construction labourers prone to saving a larger portion of their wages.

Finally, the industry suffers from problems in securing timely and adequate financing. This is the result of the high investment requirements of the construction projects. Moreover, the construction firms need to maintain a substantial cash flow to finish construction projects on time. This is almost impossible for construction firms as the payment and credit facilities of the construction production function vary and it is difficult to assure on-time payments (CIDB Malaysia, 2007). This is why the construction firms opt for the cheapest resources in terms of labour, construction materials and plant and machineries.

3.16 Concluding Remarks

It has been noted from the review of the literature that the construction industry is unique due to its special character, demand and production process. Although the industry faces many problems, it is still considered an important sector of the economy due to its ability to produce the multiplier and accelerator effects, especially during an economic downturn. The multiplier effect takes place when government expenditure on construction projects that require huge capital and investments is increased.

This action triggers activity in other economic sectors by changing the demand for building materials. As previously mentioned, the components of the construction industry consist not only of building materials but also professional services to plan and monitor construction projects. Hence, the impacts will also be felt in other economic sectors; this is known as an economic accelerator effect. It has been previously noted in the literature that the industry employs a large number of workers.

Hence, the accelerator effect could take effect quite quickly. However, the potential of the industry to stimulate the economy during an economic cycle cannot be executed to the fullest when most of the workforce is composed mainly of immigrants. These immigrants do not prefer to spend locally; they prefer to remit most of their income to their home country. This scenario has led to some disturbances in the economic cycle of the construction industry. Hence, action needs to be taken to manage the economic leakage resulting from monthly remittances so that he important function of the construction industry in an economy can be maintained. The way forward, from the view of the construction industry is to manage construction projects effectively and to improve on-site conditions to stimulate local spending by the immigrant construction workers.

Chapter 4 Overview of Immigrant Construction Workers

4.1 Introduction

This chapter will provide an overview of immigrant workers in general before narrowing the focus to immigrant construction workers, and particularly immigrant construction workers in Peninsular Malaysia. The profile will describe both immigrant construction workers and their motivation to work overseas. Some relevant issues are also highlighted to indicate which issues must be tackled specifically within the research context. Some measures towards immigrant workers from other developed countries were identified to gain an understanding of the best managerial practices for immigrant workers. The governing authorities in Peninsular Malaysia were also studied with an emphasis on their roles and responsibilities to identify possible improvements**.**

4.2 Human Migration Overview

Human migration to other countries in search of employment is well established (Wickramasekera, 2002; Wells, 1996) and considered a common social development process in the world economic structure (Ajis et al., 2010). This scenario of cross-border labour migration is a global phenomenon that affects hundreds of countries (Kassim, 2007).

The motivations behind the migration are primarily higher wages and better opportunities. Others were forced to abandon their homes due to poverty, famine, natural disasters and environmental degradation, violence or persecution and political instability (ILO, 2004).

Historically, migration has generally occurred between neighbouring countries (Kassim, 2007; Asia Pacific Migration Research Network, 2006; Adams Jr, 2003; Wells, 1996). However, due to improvements in global information and cheaper transportation, geographic boundaries have all but disappeared as migration barriers (ILO, 2004). The most common pull factors are economic stability, particularly on the level of national income, low inflation, employment, the exchange currency rate of the host country and the living standard (Kassim, 2007; ILO, 2004; Wells, 1996). Usually, the importing labour countries are those that are established both economically and politically.

The immigrant workers usually receive several reactions from the country's indigenous inhabitants. Many of them are welcomed by the authorities if they are qualified in terms of educational or economic gap (Chapman, 2000). This makes it more favourable push factors to migrate.

4.3 Characteristics of Immigrant Workers

Immigrant workers have certain characteristics that differentiate them from other local workers. They usually come from neighbouring countries with less desirable economic performance and a less well-established government than the host country. Additionally, the immigrant workers usually understand the spoken language of the host country and, in most cases, the national language of the host and home countries are similar. The language factor is a known consideration for immigrants planning to migrate.

Other push factors include the host country's higher currency rates and high labour demand, reflecting the ease of labour market entry. These immigrants usually obtain low-paying jobs that are not of interest to the locals (Asia Pacific Migration Research Network, 2006). The immigrant workers are usually driven from the immigrants' country of origin due to economic and political instability, poverty, high inflation and high unemployment (Ajis et al., 2010; Asia Pacific Migration Research Network, 2006, Wickramasekera, 2002). The immigrant workers are also known to be hardworking, thus making them strong contenders in some labour markets in the host countries (Abdul-Aziz, 2001).

The push and pull factors can be associated with human motivation. Motivation is the set of forces that initiates, directs and concerned with choices that people persists in their efforts to accomplish a goal. People are motivated by unmet needs (Williams, 2008; Curtis and Curtis, 1997). 'Human need' refers to some internal state that makes certain outcomes appear attractive. Any unsatisfied needs will lead to tension, which later stimulates drives within an individual (Robbins and Coulter, 2003).

Maslow's famous Hierarchy of Needs suggests that people are motivated by physiological, safety, belonging, esteem and self-actualisation needs (Williams, 2008; Robbins and Coulter, 2003). Figure 4.1 depicts the hierarchical human needs.

Figure 4.1 Human hierarchical needs.
Source: Maslow, 1943 in Robbins & Coulter, (2003)

Humans become uncomfortable with their lives as a result of unfulfilled needs and this will create tension that needs to be resolved. This will make humans consider solutions to the problem by making efforts to overcome the problem. Such efforts may be in the form of initiation, direction and persistence. Once the effort takes place, it will lead to performance, which later results in satisfaction (Williams, 2008; Robbins and Coulter, 2003). The process is depecited in Figure 4.2.

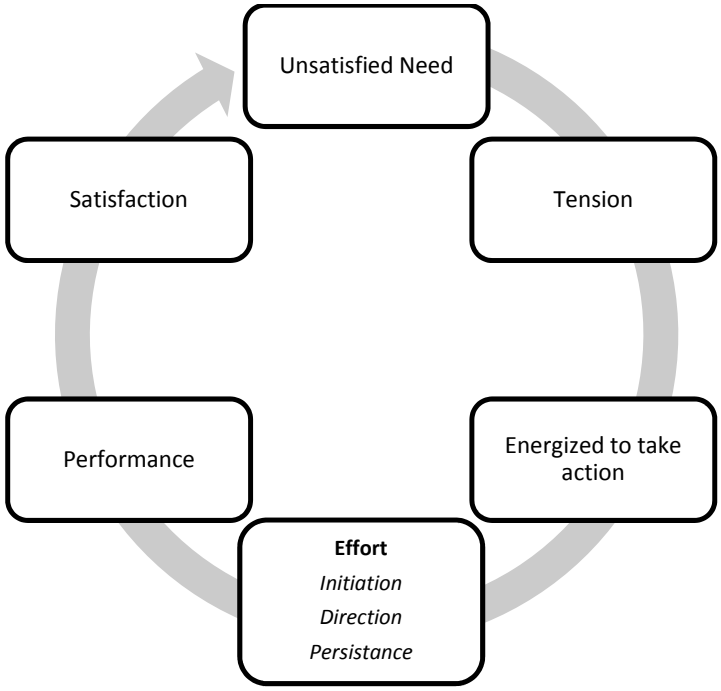


Figure 4.2 Adding need satisfaction to the Model

Similar to immigrant workers, there are required to leave their country due to the aforementioned problems residing the immigrants in their home country. They are forced to leave the country to improve the quality of their living. Although the living condition in the host country is not necessary appropriate, but due to the fact that they earn better, the immigrants choose to adapt to the lifestyle and accept work that is declined by locals.

The majority of immigrants come from a low educational background (Abdul-Rahman et al., 2012; Abdul-Aziz, 2001; Asia Pacific Migration Research Network, 2006). This makes them prone to discrimination during their employment in the host country (Abdul-Rahman, Wang, Wood, & Low, 2012; Hamid et al., 2011; Asia Pacific Migration Research Network, 2006; Kassim, 2005).

4.4 Social and Political Effects of Labour Immigration

The negative effects of the use of immigration workers can be divided into two categories. Those caused by the perception of a threat from either the immigrant or the host population (Brownlee and Mitchell, 1997). Immigrant workers who reside in a squatter area create problems regarding housing, amenities and social services (Asia Pacific Migration Research Network, 2006).

In addition, the locals, especially those who live in big cities, must fight for accommodations. The immigrant workers who squat are exposed to diseases and outbreak, posing a danger to the local population. Squatter areas are also prone to flooding and fires, which could cause problems for the authorities and local residents (Brownlee and Mitchell, 1997). The presence of the illegal immigrant workers has created problems with regards to security and political stability (Kassim, 2007). The impacts of immigrant workers' employment are best described by referring to a report prepared by ILO on the consequences of migration. Table 4.1 depicts the impact of labour emigration and immigration.

Table 4.1 Potential advantages and disadvantages of emigration and immigration

	Emigration		Immigration	
For migrants or for individuals	**Potential advantages**	**Potential disadvantages**	**Potential advantages**	**Potential disadvantages**
	Employment	Discontinuity, loss of seniority	Services that free women to enter labour force	Competition for jobs;marginalisation of less skilled
	Greater income	Bad working/living conditions	Cheaper goods and services	Lower local wages
	Training or education	Lower status work; loss of skills	-	Crowded schools
	New cultural experiences	Racism or discrimination	Richer cultural life	Strange languages and customs
	Meeting new people	Separation from family; adverse impact on children	Learning about other countries	-

	Emigration		Immigration	
For enterprises	Skills of returning migrants	Losing skilled workforce	Cheaper, more flexible labour	Less stable workforce
	Lucrative business for the recruitment industry	Labour shortages that drive up wages	Workforce diversity	Dependence on foreign labour for certain jobs
	Extra business for communications and travel firms	-	Larger markets and economies of scale	-
For the country as a whole	Reduced population pressure	Losing younger people	Rejuvenating population	Social friction
	Lower unemployment	Coping with sudden returnees	Larger workforce; lower inflation	Delay technology upgrading
	Foreign currency remittances	Loss of potential output and tax revenue	Higher GDP, capital brought by immigrant investors	Increased income inequality
	Knowledge and skills of returnees	Brain drain and loss of better workers; reduced R & D	Brain gain	Costs of integration programmes
	Building transnational communities	Social disruption and a culture of emigration	More diverse and energetic population	More social stratification, immigrant ghettos
		Increasing inequality	Tax income from younger workers	Cost of social services, welfare benefits

Based on the table, issues relating to immigrant employment include both the benefits of hiring them and the drawbacks resulting from their employment. Hence, any measures towards them should seek a positive outcome for both immigrant workers and the host countries.

4.5 Economics Effects of Labour Immigration

Around the globe, remittance flows made by immigrant workers were a top source behind FDI, second only to external funding for developing countries (Lueth and Ruiz-Arranz, 2006; International Labour Office, 2004). In 2002, it was reported that the total

amount of remittance are around US$100 billion annually. From the figure, 60 per cent were exported to developing countries (Gammeltoft, 2002).

The existing literature is ambivalent as to the percentage of remittance made among the immigrant workers. Additionally, there is no available data on remittances being transmitted through private unofficial channels (Adams Jr, 2003); thus, the reported data may underestimate the actual amount remitted. Most of the literature examines the benefits of the remittance for labour-sending countries.

A report by the Asian Development Bank in 2006 depicts the importance of remittance in the global economy. Most literatures on remittance reveal remittance to be a significant foreign exchange source. However, the benefit received by the host countries is not clear (Glytsos, 2005; Russell, 1986) apart from decreasing the labour shortage.

Many researchers have delved into the impacts of the remittances on migrant sending economies, excluding the effects on migration to the host countries (Taylor, 1999). Most remittance-use studies focus on how remittances and savings are spent, which economists consider the wrong enquiries. Household budgets shape expenditures on goods and services, including investments. This moulding is constrained by budget limitations. However, remittances influence the immigrant's family's expenditures in the home country by increasing their demand for normal goods (i.e., manufactured goods) and reducing their demand for 'inferior' goods (i.e., staples) (Taylor, 1999) and enable them to have a higher standard of living (Zachariah et. al, 2001).

Remittances made by immigrants depend on both their wages and their willingness and motivation to allocate some of their wages to their family in the home country (Taylor, 1999). This is due to the fact that the decision made on who should migrate among the family member was made collectively among the family members in home country due to the limited budget to migrate (Thieme and Wyss, 2005). The wages, cost of living and the constellation of the family are also important. The amount of remittance will be less if the immigrants are joined by their immediate family (Thieme and Wyss, 2005).

4.6 Global Measures towards Immigrant Workers

According to a report on migration issues in Asia Pacific in 1997, measures towards the immigrants are taken in stages with the aim of addressing one problem at a time. However, this approach is confusing as it is often mistaken with one another. According to the ILO Conventions and Recommendations, several distinct periods important for protecting immigrants' welfare are as follows (Navamukundan, 2006):

- before leaving the home country and during the journey to the new country;
- on arrival;
- during employment;
- in the exercise of social and civil rights; and
- during repatriation.

Hence, in most countries, these five themes are the most common exercised towards the immigrant workers. However, certain additional measures have been prepared by developed countries such as the UK to monitor the movement of immigrant workers in their country. The Worker Registration Scheme (WRS) entry was introduced and

implemented among the A8 group (mostly from European countries). According to the scheme, any A8 citizens who wish to work with an employer with a minimum pay of £70 upon registering must register to the Home Office (Salt and Millar, 2006).

In addition, the UK government has introduced and implemented the National Insurance Scheme (NI) for which anyone who wishes to work in the UK must apply and income taxes will be directly deducted from the employees' account (Balch and Geddes, 2006). This scheme is seen as a good system to keep track of workers, be they local or immigrant. It also acts as a form of economic control whereby the government can tax workers directly.

In Singapore, the government has exercised some additional conditions regarding the work permit, including the provision for equal rights with the locals with some permission for the employer to deduct the cost of food (if provided), transportation and/or accommodations provided (Ofori, 2006). This shows that any government could create additional measures towards immigrant workers so long as it guards both parties (Balch and Geddes, 2006).

There are several choices of measures proposed by the UK government to combat illegal migrant in the country such as do nothing, pursue non-legislative options, introduce on the spot civil penalties, create a new offence of knowingly employing illegal worker, create a continuing obligation for employers to check that employees do not work beyond the expiry of their leave and introduce on the spot civil penalties, create the knowing offence and create a continuing obligation (UK Home Office, 2005). Each of the measures was designed to tackle different issues regarding immigrant workers.

4.7 Immigrant Employment in Malaysia

The beginning of the import of the immigrant workers started in the 1970s via the Malaysian government's New Economic Policy, which welcomes the labour shortage, particularly that in the plantation sector from India (Ajis et al., 2010; Narayanan and Lai, 2005; Wells, 1996). The inflow of these immigrants during this period is primarily due to 'pull' factors, especially when the Malaysian government is suffering from critical labour shortages. As reported, Malaysia acts as both a migrant labour recipient and source (ADB, 2006).

In Malaysia, the proportion of immigrant workers in the overall workforce increased from 1:10 in 1995 to 1:8 in 1997. It then recovered to 1:13 in 2000 (8th Malaysian Plan, 2001). As of 2005, 63,538 immigrant workers are registered in Malaysia. In addition, another 244,242 workers are waiting for working permits (CIDB, 2006). Table 4.2 shows the distribution of the approved immigrant construction workers in 2010 by nationality and sector in Malaysia.

Table 4.2 Distribution of foreign workers. (Source: Department of Statistics, 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
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 4.2 shows that manufacturing employs the largest percentage of immigrant workers, followed by the plantation sector. Construction and services sectors come third. Although the construction industry is smaller in terms of GDP contribution than both the manufacturing and plantation sectors, it is still a favoured sector for immigrants due to its nature. In addition to legal workers, there are approximately 1.2 million illegal workers in Malaysia (Kassim, 2007; Asia Pacific Migration Research Network, 2006). Research conducted by Kassim indicates that of 1.38 million immigrant workers in 2000 in Malaysia, only 820,000 are registered with the Immigration Department (Kassim, 2005).

There seems to be an incremental increase in the amount of immigrant employment yearly. This trend is depicted in Table 4.3.

Table 4.3 Statistic of foreign workers by nationality from the year 2006 until 2010

Nationalities	2006		2007		2008		2009		2010	
	No.	%	No.	%	No.	%	No.	%	No.	%
Indonesia	219,880	80.62	208,920	70.00	183,961	64.36	172,329	84.38	151,333	80.61
Bangladesh	11,447	4.20	47,379	15.88	61,569	21.54	2,638	1.29	3,036	1.62
Thailand	1,245	0.45	1,402	0.47	1,613	0.56	781	0.38	463	0.25
Philippines	1,757	0.64	1,828	0.61	2,135	0.75	671	0.33	3,335	1.78
Pakistan	4,131	1.51	4,475	1.50	5,638	1.97	7,089	3.47	6,217	3.31
Myanmar	14,428	5.29	14,491	4.86	14,007	4.90	11,691	5.72	12,221	6.51
Nepal	4,389	1.61	4,678	1.57	3,704	1.30	3,078	1.51	3,050	1.62
Vietnam	5,893	2.16	5,090	1.71	3,613	1.26	226	0.11	1,965	1.05
Other	9,560	3.52	10,159	3.40	9,605	3.36	5,734	2.81	6,123	3.25
Total	**272,730**	100	**298,422**	100	**285,845**	100	**204,237**	100	**187,743**	100

Statistics from the Malaysian Department of Statistics in 2010 depict several changes in the number of immigrant workers in Malaysia, as can be seen in Table 4.4.

Table 4.4 Breakdown of numbers approved foreign workers in 2010 by nationalities and sectors (Source: Malaysian Department Statistics, 2010)

NATIONALITIES	SECTORS						
	Maid	Construction	Manufacturing	Services	Plantation	Agriculture	Total
INDONESIA	203,225	192,789	198,643	38,684	202,156	82,435	917,932
BANGLADESH	18	61,303	170,332	27,002	30,599	18,112	307,366
NEPAL	84	3,785	135,764	26,901	1,621	7,655	175,810
MYANMAR	118	13,542	92,135	22,654	2,211	9,600	140,260
INDIA	236	5,002	13,866	47,021	16,675	30,997	113,797
VIETNAM	901	3,021	68,433	2,018	28	441	74,842
FILIPINA	9,657	1,031	1,915	2,944	1,489	1,604	18,640
PAKISTAN	11	5,922	2,217	1,593	1,244	12,002	22,989
THAILAND	346	811	893	4,588	57	407	7,102
CAMBODIA	9,166	92	2,353	218	137	125	12,091
CHINA	15	1,303	935	6,592	36	13	8,894
SRI LANKA	753	69	1,382	665	128	417	3,414
LAOS	2	7	16	3	1	28	57
UZBEKISTAN	0	0	0	4	0	0	4
KAZAKHSTAN	1	0	0	0	0	0	1
OTHERS	11	45	2	3	0	0	61
TOTAL	**224,544**	**288,722**	**688,886**	**180,890**	**256,382**	**163,836**	**1,803,260**

There seems to be an increasing pattern largely from the neighbouring countries with similar backgrounds, such as language and culture. Indonesia continues to be the largest supplier for human capital followed by the Bangladesh. Most of these immigrants reside in construction sectors as well as maid, plantation and manufacturing. In addition, Indonesians have dominated this statistic with more than 70% of all jobs (Abdul-Rahman, Wang, Wood, & Low, 2012).

Other sectors have shown an increase in immigrant employment, especially from Bangladesh. The increase is due to a recent MoU signed between Malaysia and Bangladesh providing mutual agreement regarding the inflow and outflow of Bangladesh citizens to Malaysia in order to fill labour shortages in Malaysia (Ahmad, 2012).

4.8 Remittances in Malaysia

It has been reported that approximately MYR4.5 billion was remitted by immigrant workers working in Malaysia to Indonesia alone (Brownlee and Mitchell, 1997). More recently, MYR1.9 million was exported from Malaysia each month (Rosli and Kumar, 2006). Another recent report on remittance in Malaysia cites that MYR9 billion has been exported by immigrant workers (Syafaat, 2008). This problem has a significant impact on the Malaysian economy as the income generated within the economy cannot be passed on to the overall cash flow cycle.

4.9 Current Management of Immigrant Workers in Peninsular Malaysia

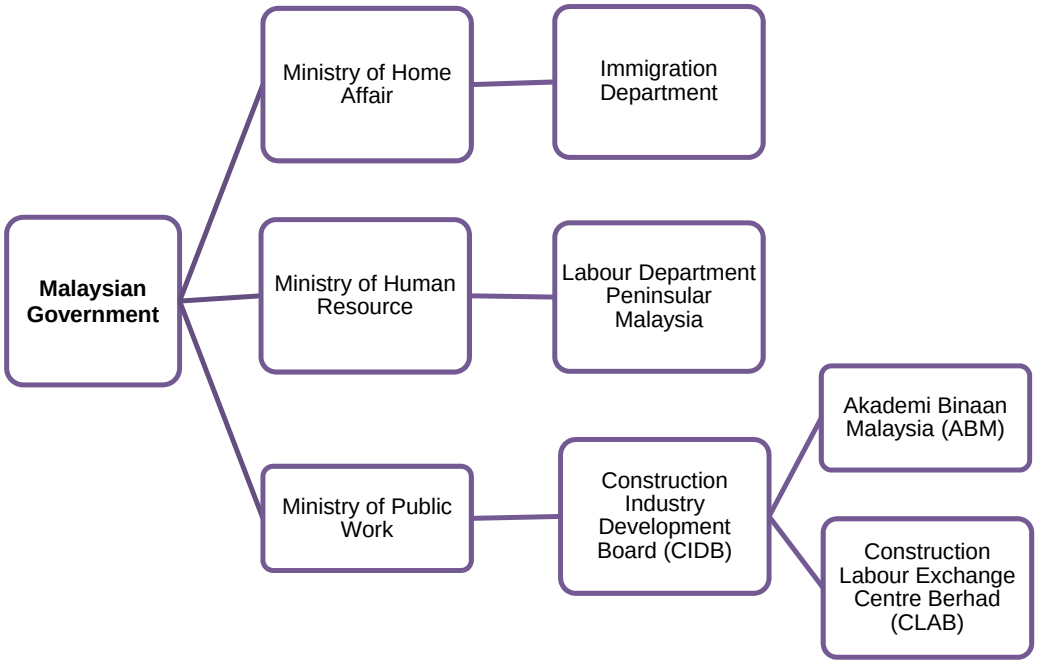
The current management of immigrant construction workers is the responsibility of several government officials and agencies, which have job descriptions and responsibilities that occasionally overlap. Different government ministries and agencies were involved at different stages of the employment of immigrant construction workers in Malaysia. The following sections explain the management structure of immigrant workers in Malaysia and the current measures exercised towards them.

Two government organisations manage the immigrant workers in Malaysia namely the Immigration Department, which is under the purview of the Home Affairs Ministry, and the Human Resource Ministry (Asian Development Bank, 2006). However, immigration law and policies differ between East and West Malaysia (Asian Development Bank, 2006). East Malaysia consists of the Sabah and Sarawak states, while West Malaysia, sometimes known as Peninsular Malaysia, consists of several other states, such as Perlis, Pulau Pinang, Perak, Selangor, the Federal Territory of Kuala Lumpur, Negeri Sembilan, Melaka, Johor, Pahang, Kelantan and Terengganu (Asia Pacific Migration Research Network, 2006; Dusuki, 2005).

East Malaysia has greater autonomy to generate its own immigration policies due to the 20 agreement upon the introduction of Sabah and Sarawak as part of Malaysia in 1963. In the agreement, Sabah and Sarawak have the right to maintain and control immigration matters (Asian Development Bank, 2006). In general, Sabah and Sarawak have a more relaxed entry and exit policy than does Peninsular Malaysia (Navamukundan, 2006).

Three ministries are responsible for managing and controlling immigrant construction workers in Malaysia: the Ministries of Home Affairs; Public Works; and, Human Resources. Each ministry is further subdivided by several agencies, some of which are further assisted by several divisions. The level of authority of each organisation and the relationships between organisations are shown in Figure 4.3.

Figure 4.3 The organisation of authorities managing immigrant construction workers



Although Figure 4.3 suggests that the level of authorities between the Immigration Department and CLAB have different levels of power, they have almost identical authorisation to approve the intake of immigrant construction workers to Malaysia. However, before explaining the application process, it is best to understand the function of each organisation to prevent misinterpretations. Each ministry and agency has specific roles and responsibilities.

Table 4.5 presents the different levels of power and different scopes of each ministry, agency and division.

Table 4.5 Function and responsibilities of authorities involved in managing immigrant construction workers (Source: Immigration Department, Malaysia

Ministry/Agencies/Division	Scope of work
Immigration Department	Managing and approving intakes of immigrant workers at early stage of immigration construction workers employment.
Ministry of Home Affair	Responsible in managing the employment of immigrant construction workers. Act as a secretariat to the One Stop Centre in giving out advice to decide and approve the immigrant construction workers' application.
Ministry of Public Work	Delivering technical advice regarding the construction project development to the Malaysian government.
Ministry of Human Resource	Responsible in managing, monitoring and controlling labour and wages payments.
Labour Department Peninsular Malaysia	Act as a job centre where all job vacancies are registered. All construction firms should refer to the centre before proceeding to apply with the Ministry of Home Affairs under the process of Immigration Department. Job securing should be given to local as the main priorities. This centre collects information on the current demand and labour supply in Malaysia.
Construction Industry Development Board (CIDB)	One of the many functions of the CIDB is to advise and make recommendations to the Federal Government and the State Government on matters affecting or connected with the construction industry. CIDB also collects levy payments from the immigrant construction workers on annual basis during their job occupancy in Malaysia.
Construction Labour Exchange Centre Berhad (CLAB)	CLAB acts as a temporary centre where it house immigrant construction workers who have completed their jobs with valid permit from construction companies. It later redistributes the workers to companies that require them. It also acts to bring in immigrant construction workers direct from the source countries.
Akademi Binaan Malaysia (ABM)	Responsible for providing skills and management training in construction, assessing and evaluating skills, plus accrediting skilled workers in the construction industry. ABM also acts as a centre to accredit immigrant workers whose work permit is ending to continue their VISA and work permit in Malaysia.
Outsourcing companies	Responsible to manage the application process made by construction firms to seek immigrant construction workers from source countries.

4.10 Regulations and Mechanisms Applied to Control Immigrant Workers

In line with their objectives to control the inflow and outflow of the immigrants in Malaysia while maintaining the labour market, the Malaysian government has created several policies and regulations, such as limiting the sectors in which immigrants are allowed to work, countries of origin and work duration. In addition, work permits and visas are regulated, levies are imposed and the appointment of foreign workers is achieved using listed outsourcing companies (Immigration Department Malaysia, 2007).

The regulations are stated in the Malaysian Immigration Act 1959/63 and Malaysian Passport Act 1966 (Immigration Department Malaysia, 2007; Legal Research Board, 2006). Most of the Malaysian policies are similar to those in nearby areas, such as Brunei and Singapore. The regulations, however, are only concerned with the safety of immigrants, monitoring of their inflow and outflow, issuing permits and enforcing penalties as required (Legal Research Board, 2006). The limitation of approved sectors to work in does not apply to the construction industry, as all immigrants from all approved countries can be employed within this industry (Malaysian Immigration Department, 2007). Moreover, all sub sectors are approved for the construction industry.

4.10.1 Legal regulation of recruitment

The objective of the immigration department is to find practical ways to manage the immigrants. This task involves legislative procedures, rules, structures, mechanisms and other tools, such as appointing recruitment agencies and granting licenses to outsourcing companies, collecting fees and creating procedures for complaints from

either the employer or the employee and remedies for said complaints (Immigration Department Malaysia, 2007). The rules and guidelines pertaining to the policies, procedure and conditions for employing immigrant workers in Malaysia is stated in the *Buku Panduan Dasar, Prosedur dan Syarat-syarat Penggajian Pekerja Asing di Malaysia* prepared by MoHR published in 2006.

However, report from research made by Ishida and Shahid Hassan stated that the Malaysian government should strictly regulate the activities of the agents and brokers and also provide useful and accurate information for those intending to works in Malaysia (Ishida and Shahid Hassan, 2000).

The immigrant workers need to undergone the special course conducted under the supervision of MoHR known as Induction Course for Foreign Workers Working in Malaysia (MoHR, 2007). Some of the content within the induction course are as follows:

- the communication proficiency - 30 hours,
- Malaysian culture - 10 hours
- awareness of Malaysian Laws - 20 hours

Table 4.6 shows an overview of the measures taken by the Malaysia government to date to reduce the number of illegal immigrants in Malaysia.

Table 4.6 Measures Taken to Control Immigrant Workers in Malaysia. Adopted from Jabatan Tenaga Kerja Semenanjung Malaysia, 2011; Kassim, 2005; Asia Pacific Migration Research Network, 2006; ILO, 2004

Year	The regulations/attempts made/measures	Purpose	Effects/Remarks
1968	The Employment Restriction Act 1968	To evict several thousands Indian workers from plantations	No remarks stated on the slackness of the action. A general measures.
1970s	Immigration Law (1957)	To control foreign workers in Malaysia	Received rejections from employers due to critical workers supply in Malaysia.
1984	The Medan Agreement - MoU by Malaysian and Indonesian government (basically the very 1st attempt made)	To establish new recruitment procedures. Subsequently similar agreement signed with other countries (eg. Thai, Bangladesh & Philippines	Laxity of enforcement failed to stop the inflow of workers. The measure is more on controlling the numbers of immigrants in Malaysia.
1989	Program for the Regularisation of Illegal Immigrants	To regularise the status of already employed Indonesians in agriculture	Failed due to the time and expense involved for the execution of measures.
1990	A ban to all Indonesian workers	To control the inflow	Failed due to pressures from employers as it affects the workers supply especially in construction industry.
1991	New measures to grant legal workers with equal wages and benefits while protecting the rights of citizens to employment	To control the inflow	No remarks on the slackness of action
1992	Levy to foreign workers	To register all illegal migrants	Seen as the first time a serious and concerted drive to register all illegal immigrants particularly in plantation, construction, and domestic sector. This the only measures seen to control on economic aspects but only at the point of entry and appointment of new jobs among the immigrants. Deported over 10,000.
1993, April	A ban to unskilled immigrant workers	Attempt to raise the skill level of incoming workers	Revoked during the tedious management and lack of enforcement.
1994, Jan	Another ban imposed to all sectors excluding manufacturing		No remarks or further elaboration on the efficiency of the ban nor the slackness of the action

1997	Total ban on all recruitment	To control the inflow due to financial crisis	No remarks on the causes of the removal
2002, Aug	A stop on employing Indonesian in construction sector due to series of riots caused by them followed by massive repatriation	To control the riots	The repatriation resulted 400,000 illegal workers send home. Created major disturbance to the construction sector which forces the Government to rescind order. The ban was shortly taken back.
No specific time stated	Amended Immigration Act particularly on larger fines, a jail term, and mandatory whipping for both the illegal and employer		Carried out sometime after rescind order by the government. Shown a dramatical improve however, at lower scale
2011, Nov	Program for the Regularisation of Illegal Immigrants (6P)	To regularise the status of illegal employed immigrant workers in all sectors	This program received positive responses from the immigrant workers. The program was stop 6 months after the announcement of the program.

It can be seen that many of the measures exercised towards the immigrants resides within the legislative procedures and rules. Each of the measures was conducted as course of action to solve the current problems. This can be seen where some of the measures were disbanded due to suitability or impracticality of the measures. Hence, to impose measures towards the immigrant workers are by understanding their character that shaped the problems. This also calls for the need to introduce the measures in stages rather than implementing them with prior notice. This is to avoid any disruption of the measures and will later provide time to test the efficiency of the measures.

Other measures include limiting the sectors approved for immigrant workers. However, this limitation does not apply to the construction industry as all immigrants from all approved countries can join this industry (Immigration Department Malaysia, 2007). Moreover, the limitations faced by other sectors, such as approved sub-sectors, do not exist for the construction industry.

There are a number of restrictions on immigrant workers during their stay in Malaysia. They are not allowed to bring their family to the country, to get married or to have children in Malaysia (Jabatan Tenaga Kerja Semenanjung Malaysia, Kementerian Sumber Manusia, 2006; Kassim, 2005). This is to ensure that proper documentation and procedure was carried out during the process of appointing immigrant workers in Malaysia.

4.10.2 Licensing and supervision of agencies

The Malaysian government applies strict criteria to awarding licenses to outsourcing agencies (Jabatan Tenaga Kerja Semenanjung Malaysia, Kementerian Sumber Manusia, 2006). This is to ensure that proper documentation and procedure was carried out during the process of appointing immigrant workers in Malaysia.

4.10.3 Monitoring recruitment agencies

The Malaysian government applies strict criteria upon awarding licenses to outsourcing companies. A random spot-check will be made over time to ensure that immigrant workers are well protected and sheltered during their employment in Malaysia. There are 277 outsourcing companies appointed to manage the recruitment of immigrant workers after 10 years of managing the immigrant directly by the immigration department (Immigration Department Malaysia, 2007).

4.10.4 Role of the Outsourcing Agencies in Labour Migration

With regards to the implementation of recruitment agencies beginning in 2006; all applications to work in Malaysia should go through the appointed recruitment agencies. That is, every employer utilises one of the registered recruitment agencies, stating their requirements, including the number of workers required and job durations.

The agencies will then contact their branches in the labour-sending countries to appoint the most suitable candidates to work for the designated companies in Malaysia for an agreed period, as agreed in the contract between the parties (Immigration Department Malaysia, 2007).

4.10.5 Special provisions in employing immigrant workers

There are certain provisions outlined by authorities with regards to safeguarding the immigrant workers in Malaysia. For instance, there is a minimum requirement set by the Department of Labour and Malaysian Building by Law 1984 on the minimum standard for immigrant workers accommodation and facilities 1990 in Malaysia (Department of Labour of Peninsular Malaysia, 2013; Kobarajah, 2001).

The design and facilities of living requirements for immigrant workers working in the construction industry have been outlined (Kobarajah, 2001). The accommodation must have the following facilities:

a) single or double-storey link houses
b) kitchen
c) toilets
d) shower and a laundry
e) a place to hang clothes
f) storage
g) water supply
h) electrical supply
i) waste dumping system
j) sanitary system

The immigrants are also required to undergo an annual medical check-up each time they wish to renew their work permit. This is in accordance with the requirements set out by the Ministry of Human Resource to manage immigrant workers (Department of Labour of Peninsular Malaysia, 2013). The immigrants' medical check-ups take place at authorised clinics endorsed by the FOMEMA (FOMEMA, 2012).

Immigrant workers, inculding those working in construction, are protected under the Malaysian Work Act 1955. The Department of Labour of Peninsular Malaysia is responsible for visiting the immigrant workers during their employment on a random basis (Department of Labour of Peninsular Malaysia, 2013).

4.10.6 Economic Measures

Malaysia has no regulatory measures regarding money transfers; according to an ADB report in 2006, many other countries, such as Hong Kong, China, Japan and Singapore, also have no such regulations. Therefore, immigrant workers are free to remit their wages to their home country.

4.11 Immigrant Construction Workers in the Malaysian Construction Industry

Over the years, the Malaysian construction industry has been suffering from labour shortage (A. Zaki, and M.Yusof, 2012; Hamid, Singh, Yusof and Abdullah, 2011; Mohd Yusof, 2005; Abdul-Aziz, 2001). This long-term problem emerges from the above-mentioned issues in combination with the transient nature of construction and the reluctance of local workers to fill in the shortage. Any disruption in the supply of labour to the construction industry can undermine the Malaysian economy (Narayanan and Lai, 2005). This shows how much immigrant construction workers contribute to the

nation's development. To overcome this problem, the Malaysian government has chosen to engage immigrant construction workers, mostly from Indonesia and Myanmar. As of 2010, 1,516,111 immigrant workers are registered. Of this number, approximately 12% work in the construction sector. Their presence has helped the industry to progress significantly and to stimulate the economy. Any changes to the labour supply would immediately affect the industry (Narayanan and Lai, 2005).

The Malaysian construction industry's heavy dependence on immigrant workers is attributed to the industry's over reliance on conventional construction techniques (CIDB, 2007) due to a lack of technological innovation and Foreign Direct Investment (FDI) policies. Although most countries have attempted to replace labour-based technology with capital-intensive technology (CIDB, 2007), both are concurrently necessary to maximise the profit to the nation's economy in general and the construction industry in particular (Hillebrandt, 2000). The IBS system was created to overcome the problem but has not been successful (Spillane, J, 2005; Dainty et al., 2005).

Immigrant workers are paid according to quantity or by productivity (Ahmad, 2012; Abdul-Aziz, 2001). This is very much related to the transient character of construction projects, in which each project team will abandon the team to move to another construction project (Abdul-Aziz, 2001). Hence, they do not receive a fixed monthly income during their employment in the construction sector. This clearly affects their purchasing power, as there is no income stability. Since they do not receive a monthly income and often have only a low level of education, many of them do not have bank accounts in the host country.

4.12 Processing and Documentation of Immigrant Construction Workers

Different government ministries and agencies are involved at different stages of the employment of immigrant construction workers in Malaysia. The authorities and the specific stages are depicted in Table 4.7. The same channel is used for each sector, leaving the immigrants free to move between sectors, which are a weakness with regards to controlling the number of skilled immigrant workers.

Table 4.7 Stages in Employment of Immigrant Construction Workers in Malaysia. Compiled from Immigration Department, CIDB, CLAB, MoHR, MoHA and ABM

	Stages in Employment of Immigrant Construction Workers			
	Before Entry	**During Employment**	**Extension of Work Permit**	**Exit**
Ministries in Charge	Ministry of Home Affair	Ministry of Human Resource Ministry of Public Work	Ministry of Human Resource, Ministry of Work	Ministry of Home Affair
Agencies in Charge	Immigration Department	Labour Department Peninsular Malaysia Construction Industry Development Board (CIDB)	Labour Department Peninsular Malaysia Construction Industry Development Board (CIDB)	Immigration Department
Agencies Division	Construction Labour Exchange Centre Berhad (CLAB)	Akademi Binaan Malaysia (ABM)	Akademi Binaan Malaysia (ABM), Construction Labour Exchange Centre Berhad (CLAB)	Construction Labour Exchange Centre Berhad (CLAB)

Several procedures must be undertaken by immigrant construction workers at various stages of their employment in Malaysia. They are required to undergo a one-day safety training course conducted by CIDB Malaysia on site. At the end of the training, they will be given a Green Card certificate and a ticket to enter and work on a construction site (CIDB, 2007). They are also required to pay for a provisional entry pass before they can enter Malaysia (Immigration Department Malaysia, 2012).

A levy is also charged to immigrant workers according to the corresponding sector. Immigrant workers in the construction sector are required to pay MYR1,250 annually for Peninsular Malaysia and MYR1,010 for West Malaysia (Immigration Department, Malaysia, 2012). Table 4.8 below summarises the regulations imposed on immigrant construction workers during their employment in Malaysia.

Table 4.8 Regulations Imposed to Immigrant Construction Workers

	Stages in Employment of Immigrant Construction Workers			
	Before Entry	**During Employment**	**Extension of Work Permit**	**Exit**
Requirements	• Provisional Entry Pass • Processing Fee	• Medical check-up with registered FOMEMA clinic panels • Induction with Ministry of Human Resource • LEVY • Green Card Safety training with CIDB	• Competency test with ABM, CIDB • Medical check-up with registered FOMEMA clinic panels	
Ministry/ Agencies in Charge	Ministry of Home Affair	• Ministry of Human Resource, • Labour Department Peninsular Malaysia, • Construction Industry Development Board (CIDB)	• Ministry of Human Resource, • Labour Department Peninsular Malaysia, • Construction Industry Development Board (CIDB), • Akademi Binaan Malaysia (ABM)	• Ministry of Home Affair • Construction Labour Exchange Centre Berhad (CLAB)

4.13 Recent Issues Regarding the Employment of Immigrant Workers in Malaysia

There are many issues relating to the economic effects of the employment of immigrant workers in Malaysia. Their presence in the Malaysian workforce is regarded by the trade unions as an obstacle to workers' rights, especially when the immigrant workers are willing to accept work at lower wages and are perceived as more hardworking than the locals are. These traits could result from their personal background, especially when these workers must support their own living costs in addition to those of their dependents in their home country.

However, the supply of labour from immigrant workers has had both positive and negative impacts to the Malaysian construction industry (Abdul-Rahman, Wang, Wood and Low, 2012). The Malaysian government also suffers from the cost of capturing, detaining and deporting illegal immigrants to their home countries. The maintenance of the detention camp itself costs the government millions of Ringgit (MYR) every year. This does not help the government with the economic growth.

The increasing numbers of immigrant construction labourers created not only economic leakages but also an increase in crime rates, poverty, low-quality buildings due to the use of unskilled labour (Ofori, 2006; Narayanan and Lai, 2005), monetary losses due to remittances (Abdul-Rahman, Wang, Wood and Low, 2012; Asia Pacific Migration Research Network, 2006), other forms of illegal entry such as smuggling from neighbouring countries (Asia Pacific Migration Research Network, 2006), overcrowding of immigrant workers (Jalil, 2010; Kassim, 2005) and unpaid medical bills (Ibrahim, 2009).

It was suggested that the Malaysian government extend its current regulatory role from providing permits to also supervising different stages of employment and awarding permits to supervise welfare standards (Navamukundan, 2006; Ishida and Shahid Hassan, 2000).

Low-quality construction, communication problems and an influx of immigrant workers are some of the problems cited by Narayanan and Lai (2005). In addition, the high percentage of immigrant construction workers exposes the industry to high remittances made by these immigrant workers, which disturbs the economic cycle flow in the form of leakages in the industry (Abdul-Rahman, Wang, Wood and Low, 2012; Mustapa and Pasquire, 2008). The presence of immigrant workers does not always help address the labour market crisis. Both locals and employers have long debated the negative impacts of using immigrant workers. There are also additional costs to supervise them (Narayanan and Lai, 2005).

From an economic viewpoint, studying the disposable income of immigrant workers could reveal their remittance pattern and the characteristics and economic background of the immigrant workers. Rosli and Kumar reported that the remittances reached MYR1.9 million per month in 2006. Another recent report on remittances showed that MYR9.124 billion were remitted from January until June in 2008. The immigrants remit an average of MYR720 per month (Syafaat, 2008). This figure agrees mathematically with the statistics prepared by the Malaysian Immigration Department.

4.14 Duplication and Potential Areas for Improvement in the Recruitment Procedure

The recruitment of immigrant workers has demonstrated the fragmentation and bureaucracy in managing immigrant construction workers in Malaysia. The use of too few divisions to process and import new immigrant construction workers from the neighbouring countries has been identified as a hindrance of the influx of immigrant construction workers in Malaysia. Furthermore, the Labour Department of Peninsular Malaysia was not fully utilised to inform the manpower supply and demand in the construction industry.

Moreover, the current system does not require documentation of contract termination acknowledgement by the employers to the authorities, leaving the former immigrant construction workers without proper guidance regarding where and how to proceed in the industry. This area is where the issue of illegal immigrant construction workers occurs. These workers, if given chances by the government through the CLAB, can reduce the number of illegal immigrant construction workers.

The flow chart depicted in Figure 5.1 also identifies that the function of CLAB was not fully utilised as a medium to house the immigrant construction workers who have completed their contract employment and seek new contracts, temporarily without work permits. As there is no communication between the outsourcing companies, the construction firms and the Labour Department of Peninsular Malaysia and CLAB, the number of existing immigrant workers, pending applications and immigrant workers who have completed their contracts, is unknown.

Although some measures have been taken by the Immigration Department to ensure that the workers who have completed their contract return to their home country, these measures have not been fully exercised, worsening the problem.

4.15 Concluding Remarks

The presence of immigrant workers in Malaysia has helped the workforce cope with the labour shortage. Their presence in Malaysia has received mixed, but primarily negative, responses. The increasing number of immigrant workers in Malaysia is quite alarming as their presence has drawbacks for the Malaysian economy in addition to social issues. Most importantly is the immigrants' high tendency to remit.

This both scenarios are harmful to the Malaysian economy as it leaks economic income and expenditure flow, dampening economic growth. Not only does it disturb the economic cycle, the influx of legal and illegal immigrant workers also worsens Malaysia's image by increasing crime rates. The current measures taken by the Malaysian government focus on social and security aspects, but exclude economic measures. These economic measures must be developed to reduce the harm done to the Malaysian economy by the use of immigrant workers.

The literature clearly shows that all current measures have focused on controlling the number of entrants to Malaysia and the corresponding security issues. The current lack of regulation regarding the percentage of remittances made by these immigrant workers must be addressed to harmonise the attempts made to overcome the labour market in Malaysia and the economic cycle, especially given that the Malaysian government has invested heavily in the construction industry to stimulate its economy.

Chapter 5 Research Methodology

This chapter explains the research methodology adopted to achieve the research aim and the objectives. Because it is important to understand the research philosophy, process and approach prior to commencing the research, this chapter provides a brief overview of these topics. This understanding will guide the selection and application of a suitable research methodology that will fulfil the research objectives and aims outlined in the previous chapter.

This chapter also highlighted the factors that should be considered in choosing a suitable research methodology and emphasises the relationship between the research objectives and the research methods. Different activities undertaken in each research process are explained, and the selected methods are also discussed.

5.1 Definition of Research Methodology

According to Blaxter et al (2001), research is a systematic investigation that finds answers to a problem. Similarly, according to Creswell (2005), research is a procedure that is undertaken to collect and analyse information to increase understanding of a certain topic or issue. Another definition from Metens (2005), states that research is a process of systematic inquiry that is different from other ways of knowing, such as insight and divine inspiration.

A research project consists of a process that is designed to collect, analyse, interpret and use data to understand, describe, predict or control an educational or psychological phenomenon or to empower individuals in such contexts. Similarly, a definition of research by Guthrie (2010) states that research concerns itself with

solving a problem that affects humans by systematically collecting and analysing data. In contrast, research methodology as defined by Fellows and Liu (2003) consists of the principles and logical sequence of thought processes that are applied to a scientific investigation.

Othman (2004) defines research methodology as the philosophy, systems of methods and principles used in a particular discipline. He also further differentiates the definitions of research methodology and method by explaining that method specifically refers to the approach, techniques or arrangement of processes or a particularly systematic or regular investigation in a particular field or subject.

These definitions show that research is a course of action undertaken by following a systematic process to solve a problem. A research methodology is a process of systematic enquiry utilising the philosophy, systems of method and principles that are suitable for a particular discipline. The method itself refers to the techniques applied to systematically analyse a subject or a particular field of study.

The best description of the differences between research, research methodology and methods is provided by the nested approach introduced by Kagioglou et al, as cited by Pathirage et al (2006). This approach will be explained further in the next section on research philosophy, research approach and techniques.

5.2 The Research Process

There are certain research processes that require a different research approach, and many research processes contain different steps due to these disparate research approaches. However, many of these approaches seem to follow a similar process.

For instance, according to Othman, (2004), the research process can be generalised as follows;

- choose a general topic;
- focus the project or area of inquiry within the theory;
- design a study;
- collect data;
- analyse the data;
- interpret findings and draw conclusions; and
- inform others in a report.

On a similar note, according to Creswell, (2005), the research process is composed of the following;

- identify the research problem;
- conduct a literature review;
- justify the purpose of research;
- collect data;
- analyse and interpret data; and
- evaluate and report on the research.

Although the research process is often presented as if it were a fixed series of processes with an obvious beginning and end, it is not usually conducted as such. According to Blaxter et al (2006), the overall research process can be referred to as the research spiral, depicted in Figure 5.1.

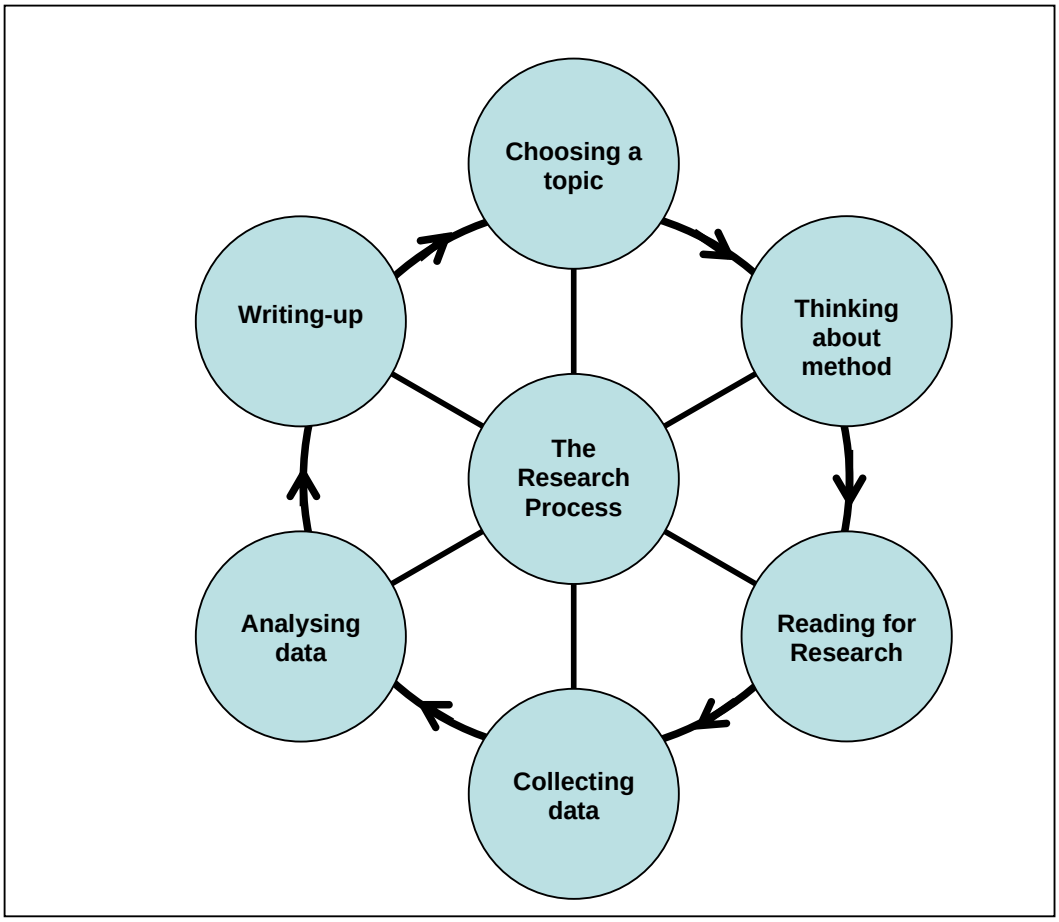


Figure 5.1 The Research Spiral. Adapted from Blaxter et al., (2006)

Figure 5.1 shows that the research process can be started at any point, have no definite end, and at some point along the process, consideration of a particular aspect may lead to an alternative starting point.

Hence, it can be concluded from several explanations of the research process that research can be conducted in a non-linear manner due to the nature of the research subject itself. Most research should also contain at least six principal processes that can be carried out at different stages during the research.

5.3 Research Philosophy

According to Creswell (2009), the philosophy behind the research relies heavily on the individuals preparing or designing the research proposal. Similarly, the research philosophy represents a set of essential assumptions in relation to the world, the individuals' place in it and the associations between the world and the researcher. In other words, the research philosophy is a systematic assessment of the assumptions and common wisdoms that inspire the thought and action of the researchers themselves, according to Root (1993). Thus, it can be concluded that the research philosophy relies greatly on the researchers' own view on certain assumptions and how they relate to the world and dictate the researchers' thought and action.

The dimensions of research philosophy and positioning of research according to Lu and Sexton (2004) are shown below in Figure 5.2.

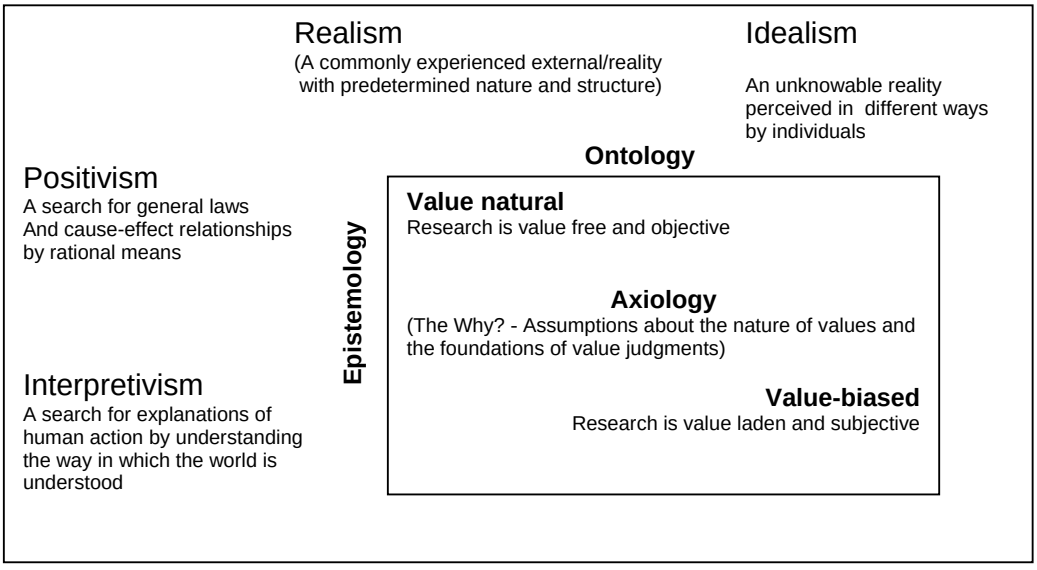


Figure 5.2 Dimensions of Research Philosophy. Adapted from Lu and Sexton (2004).

According to Figure 5.2, there are several approaches within the research philosophy with different ontological, epistemological and axiological assumptions. Ontology refers to the collective conceptions of reality (Dainty, 2007) and assumptions about the nature of values and the foundation of value judgments (Lu and Sexton, 2004). Next, epistemology refers to knowledge that should be regarded as acceptable within a discipline (Dainty, 2007) and includes a general assumption of how knowledge is acquired and then accepted (Lu and Sexton, 2004). Finally, research axiology refers to assumptions regarding the nature of values and the foundations of value judgments (Lu and Sexton, 2004).

On similar note, but with different terminology, there are four philosophical worldviews on research philosophy, namely postpositivist, social constructivist, advocacy/ participatory and pragmatic, according to Creswell (2009). However, there are also several other research philosophies or paradigms according to Merten (2005), who includes the postpositivist, constructivist, transformative and pragmatic. Each of these research paradigms has been further divided with several additional labels.

For instance, the quantitative research methodology was categorised under the postpositivism paradigm, while the qualitative research methodology was categorised under a constructivist research paradigm, and mixed methods were categorised under a pragmatic research paradigm. Additionally, according to May (2001), there are eight different schools of thought in social research: objectivism; positivism; empiricism; realism; subjectivism; idealism; bridge building; and, postmodernism. The positioning of the research approaches within the ontology and epistemology of the research philosophy can be observed in Figure 5.3.

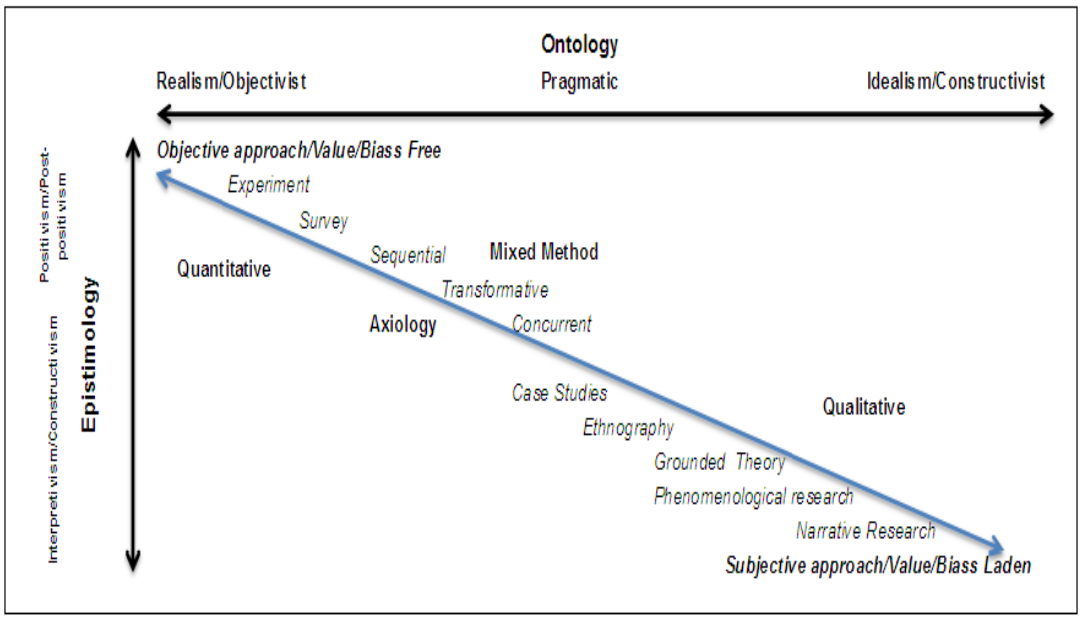


Figure 5.3 Positioning Research Paradigm. Adapted from Sexton, 2003; Yin, 2003; Kasim et al, 2008; Dainty, 2007; and Mertens, 2005)

Figure 5.3 depicts the positioning of different research methodologies under the overall research philosophy. This figure shows that the quantitative type of research methodology falls under the objectivist / realism ontology whereas the qualitative type of research methodology falls under the constructivist / idealism ontology. In contrast, the mixed-method and triangulation types of research method are categorised in between the objectivist / realist and constructivist / idealist ontologies.

In terms of the research epistemology, quantitative approaches fall under positivism / post-positivism, while qualitative research is categorised under interpretivism / constructivism. Mixed method research lies somewhere between positivism/post-positivism and interpretivism / constructivism.

Referring to the diagram, it can be observed that quantitative research is a bias-free approach that is generally based on scientific information that seeks to generalise the cause and effect relationship. On the contrary, qualitative research is bias-laden and very much based on a mysterious reality that will only be understood by studying individuals.

From many perspectives, paradigms or schools of thought pertaining to research philosophy, there are distinct differences in terms of research philosophies, research approaches and research techniques as best explained by Kagioglou et al. in 'Research Methodology Nesting', illustrated in Figure 5.4 below.

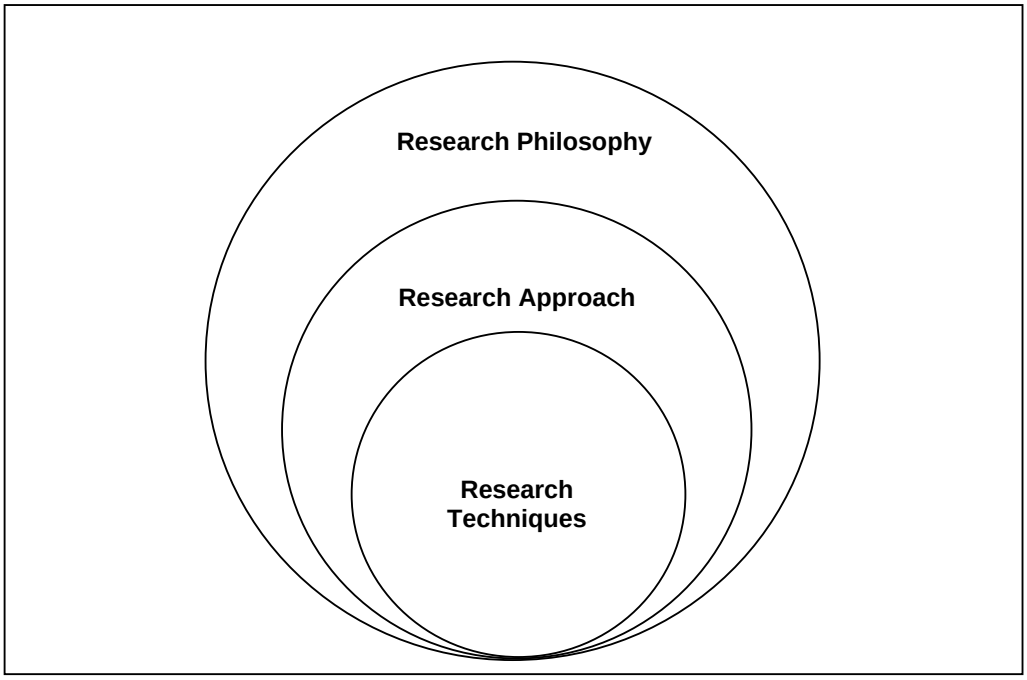


Figure 5.4 Nested Approach of Research Methodology.
Adapted from Kagioglou et al., (1998)

Research philosophies, according to Kagioglou et al. (1998), refer to the outer ring that directs and motivates the inner research approach and the research techniques later on. According to Kagioglou (1998), the research approach consists of both the dominant theory and the testing methods, while research techniques refers to the tools used to collect data, through either questionnaires and interviews (Blaxter, 2001) or through experiments, observations, workshops and document surveys (Kagioglou, 1998).

5.4 Research Approaches

There are a few research approaches, sometimes known as inquiries (Creswell, 2009), that can aid the research process based on the nature and the subject of research. Many authors have listed research approaches such as quantitative, qualitative and mixed methods (Creswell, 2009; Creswell, 2003), which are sometimes referred to as triangulation methods (Creswell, 2009; Mohamed, 2006).

Each approach has its own strengths and weaknesses with regard to the appropriateness of the data within the research subject. Additionally, researchers who embark on qualitative and quantitative approaches have been typically critical of each other, according to Herman, (2006) citing from Stablein, 1996; Bryman, 1995; Guba and Lincoln, 1994.

Research design (another term for research approach) represents the research methodology chosen by a researcher for a study. This design choice involves the use of either a qualitative approach or a quantitative approach to carry out the data collection and analysis as well as the interpretation of the data. Each of the abovementioned designs contains key characteristics, special steps and procedures

for conducting the research as well as different styles for evaluation (Creswell, 2005). Hence, it is important for the researcher to have an understanding of the research design that suits a research effort because different designs could dictate different processes and modes of evaluation.

5.4.1 Qualitative Approach

Qualitative research approaches investigate views from participants regarding general and broad questions; these approaches gather data (that consist mainly of statements in terms of words or text), depict and break down these statements to identify themes and, in general, carry out the investigation of a subjective matter in an unbiased manner (Creswell, 2005). Qualitative research was developed from aspects of anthropology and sociology which investigate deep into the individual virtues that govern human behaviour that cannot be understood from quantitative survey and statistics (Holliday, 2002).

The approach begins with gathering views from the group under study before generating propositions using the exploration of ideas and experience of the researchers (Herman, 2006). This method points the researcher to the source of data, and hence more information can be gathered (Ali, K.N, 2004) by capturing a holistic picture of the research subject using words (Mertens, 2005).

There are several strategies of inquiry embedded in a qualitative research approach, such as ethnography, grounded theory, case studies, phenomenological research and narrative research (Creswell, 2009). This research approach has been criticised mainly in terms of validity and reliability (Kasim, et. al, 2008). Many researchers perceive qualitative research to be unscientific due to unfamiliarity with the research process compared to that of quantitative research (Auerbach, 2003).

Within the qualitative approach, there are several strategies for conducting the research such as ethnography, grounded theory, case studies, phenomenological research and narrative research. Each of the strategies has its own processes, which differ particularly in the techniques used for data collection.

5.4.2 Quantitative Approach

The quantitative research approach, which is often associated with true science, includes traditional experiments and less rigorous experiments (known as quasi-experiments) as well as correlation studies (Creswell, 2009). This approach starts with the researchers' point of view, which is later transformed into research questions and hypotheses (Herman, 2006). The quantitative approach also tends to be associated with large quantities of data (sometimes perceived as 'facts') from the population (Blaxter, 2001) because it measures variables in a quantifiable manner (Mertens, 2005).

Quantitative approach using questionnaires investigates a problem by using 'what, where and when' questions and depends solely on the analysis of numerical or quantifiable data (Creswell, 2009; Creswell, 2005; Holliday, 2002). In addition, the quantitative approach is very objective and unbiased in comparison to the qualitative method (Creswell, 2005). Much of the literature states that there are two types of strategies of inquiry or approaches related to quantitative methodology, namely survey research and experimental research (Creswell, 2009; Holliday, 2002). On a similar note, according to Silverman (2006), there are a few other research inquiries that fall under the quantitative approach, such as examination of official statistics, 'structured' observation and content analysis.

However, this type of research approach was criticised during the early decades of the twentieth century because it does not consider the subjective experience in the research. In most traditional quantitative approaches, human phenomena are studied scientifically by reframing them as numerical variables (either independent or dependent) that can be measured (Auerbach, 2003). Hence, this approach fails to take into consideration the contextual 'meaning' from social interactions by ignoring the differences between the natural and social worlds (Silverman, 2006).

Strategies that are categorised under quantitative research approaches include survey research and experimental research (Creswell, 2009; Mohamed, 2006; Mertens, 2005). Each strategy has a different inquiry process, and these processes differ particularly in the methods used to collect the data. For instance, survey research seeks to explain a population trend, while experimental research includes scientific testing with a specific treatment intended to influence the outcome (Creswell, 2009; Mertens, 2005).

5.4.3 Mixed Method Approach

The mixed method approach refers to an inquiry that combines both qualitative and quantitative approaches (Creswell, 2009). It has become increasingly important to adopt mixed methods for social science research (Guthrie, 2010) to include the advantages of both approaches and therefore yield better outcomes than those from either qualitative or quantitative research alone (Creswell, 2009). The main aim is to balance the imperfections embedded in each of the philosophies. Furthermore, according to Hai (2006) citing Hakim's work on research design, there is no single research approach or method that is universally appropriate for all research questions.

According to Creswell (2009), there are three strategies within the mixed-method approach: the sequential; concurrent; and, transformative mixed methods. Each contains different procedures used to combine methods according to the research process as well as different techniques for data collection.

In the sequential mixed method, the research process might begin with a qualitative interview for exploratory purposes followed by a quantitative approach, such as a survey, especially when a large number of respondents is involved (Creswell, 2009). In contrast, the concurrent mixed method would use both quantitative and qualitative data simultaneously to produce a comprehensive analysis of the problem under investigation, and these data are collected concurrently during the research process.

Finally, in the transformative mixed method, a theoretical lens is used to provide an overview perspective that includes both quantitative and qualitative approaches. This method can be adopted using either the sequential or concurrent approach as a means for data collection (Creswell, 2009).

5.4.4 Triangulation Approach

The triangulation approach refers involves multiple approaches to reduce or eliminate the disadvantages of each individual approach (Fellows, 2003). Triangulation is a process of combining several types of data to understand one problem via different techniques by studying the problem from different perspectives (Guthrie, 2010) to achieve certain objectives to increase the reliability and validity of data findings (Othman, 2004). On a similar note, Creswell (1998) stated that the triangulation process entails corroborating evidence from different sources to discover common themes or perspectives.

In general, triangulation provides an advantage to the researcher in gathering more complete insights and results that may assist in producing further suggestions and clear conclusions (Dainty, 2004).

5.5 Research Techniques

Research techniques refer to the methods used to collect data (Kagioglou, et. al, 1998; Othman, 2004). These methods include interviews; (Kagioglou, et. al, 1998) such as the unstructured interview or focused interview (May, 2001); semi-structured interviews; structured interviews (Guthrie, 2010; May, 2001); questionnaires or surveys (May, 2001; Kagioglou, et. al, 1998); observation (Guthrie, 2010; Creswell, 2009; Kagioglou, et. al, 1998) and document analysis (Creswell, 2009). Each method has its own limitations in terms of data reliability and acquisition.

The following Table 5.1 summarises each of the following techniques for data collection by outlining the process and limitations to provide an overview of the most suitable methods for data collection.

Table 5.1 Comparisons of Research Techniques within Different Research Approaches

Research Approach	Research Techniques	Options Within Techniques	Advantages of the Techniques	Limitations of the Techniques
Quantitative	Survey	• Face-to-face interviews • Telephone surveys • Mail surveys • Drop-off surveys • Internet surveys (Dusuki, 2005)	• Appropriate for covering a large number of respondents at diverse geographical locations (Holliday, 2002) • Suitable to collect data about attitudes and opinions (Dusuki, 2005) • Able to control the data sought • Able to sought information fast and economical • Suitable for policy decisions based on aggregated statistical analysis (Amaratunga, et al, 2002)	• Unable to justify the understanding of human based on their actions and preferences • Concentrates on fact-finding based on evidence and records (Amaratunga et al, 2002)

	Experiment	• Lab based • Combination of activity that produces possible outcome (Fellows, 2003)		
Qualitative	Observations	• Complete participant • Observer as participant • Participant as observer • Complete observer (Creswell, 2009)	• Investigate deep into the quality of social life (Holliday, 2002) • First experience with respondent • Researcher can record information as it occurs • Unusual aspects can be noticed during observation • Practical in exploring topics that may be uncomfortable for participants to discuss (Creswell, 2009)	• Researcher may be seen as intrusive • Private information may be observed that researcher cannot report • Researcher may not have good attending skills • Certain participants like children may present special problems in gaining rapport (Creswell, 2009)
	Interviews	• Face-to-face • Telephone researcher • Focus group • E-mail internet interview (Creswell, 2009)	• Practical when the respondents could not be directly observed • Enable the respondents to provide historical data • Enable the researcher to control over the questions posed (Creswell, 2009)	• Allow indirect information filtered from the view of respondents • Allow information from a designated position rather than the natural field setting • The presence of the researcher during the interview might create bias response from the respondents • Human are not equally expressive and sensitive (Creswell, 2009)
	Documents	• Public documents - minutes of meeting or newspaper • Private documents - journals, diaries, letters (Creswell, 2009)	• Allow the researcher to sought the language and words of the respondents • Enable the researcher to access any time convenient to researcher • Signify data that are thoughtful as the respondents have given much attention in compiling the data • Proven to be effective in saving time and money of the researcher to transcribe (Creswell, 2009)	• Information may be protected from public • The researcher might have to seek information that might be hard-to-find places • The researcher are required to transcribe or optically scans for computer entry • The documents might be incomplete • The documents might be inaccurate or not genuine (Creswell, 2009)
	Audio-Visual Materials	• Photographs • Videotapes • Art objects • Computer software • Film (Creswell, 2009)	• Regarded as an obtrusive method of collecting data • Enable the respondents to share their perspective • Regarded as a creative way of data collections as it captures visual perspective (Creswell, 2009)	• Might be tricky to interpret • Might be inaccessible for public or privately • The presence of the observer (ie. Cameraman might interfere and affect the responses (Creswell, 2009)

NOTE : This table includes materials taken from Creswell, 2009; Dusuki, 2005; Amaratunga et al, 2002; Holliday, 2002.

5.6 Data Analysis Techniques

Other research approaches, known as traditions of inquiry and design approaches, include iterative (hermeneutic), subjective, investigative (semiotic) and enumerative inquiries for qualitative design, as indicated by Grbich, (2007). Accordingly, iterative (hermeneutic), subjective and investigative (semiotic) inquiries are more aligned with qualitative research data analysis techniques, while enumerative inquiry very much resembles many of the quantitative research data analysis techniques. For instance, qualitative research approaches use data from observations, data from interviews (Guthrie, 2010) in the form of either visual images from the observation, and texts from either transcribed interviews or documents from document analysis (Creswell, 2009; Silverman, 2006).

In contrast, quantitative research approaches utilise either scientific measurement or statistical analysis such as descriptive statistics (Dietz and Kalof, 2009; Mertens, 2005), correlation statistics, statistical significance and inferential statistics (Mertens, 2005). Descriptive analysis describes the data by describing the sample itself while inferential statistics refers to tool used to make a convincing statement regarding the data attained from the whole population (Dietz and Kalof, 2009). In order to prepare descriptive analysis especially in summarising the data, measures of central tendency was done to depict what is distinctive in a set of data. In addition, the measures of variability were also needed to be considered in explaining the differences from the observation attained (Dietz and Kalof, 2009).

There are three basic ways to measures the central tendency through the mean, the median and the mode (Dietz and Kalof, 2009; Mohd. Daud et. al, 2005). The mean refers to calculation of average which is the most commonly measures of central

tendency used while the median refers to the fiftieth percentile that is the value where the data points fall above the value and half below (Dietz and Kalof, 2009). The mean is the second most commonly used in measuring the central tendency of data. Finally, the mode is often used to analyse the repetition frequency for any sample with repetitive occurrences. It is often used to describe the shape of data distribution (Dietz and Kalof, 2009). It is also referred to as frequency analysis. When working with questions of preference, the outcome with the highest frequency suggests that this outcome is the choice of the majority of respondents. The results can then be summarised in the form of percentages (Lapin, 1990).

According to Silverman (2006), there are four ways to analyse text for representation of reality: content analysis, analysis of narrative structure, ethnography and ethno-methodology. For instance, in content analysis, the researcher establishes several categories and measures the number of occurrences. Narrative structure analysis examines systems of writing, symbolic rites and sign systems for the deaf and treats written texts as organised narratives.

Ethnography analysis refers to the analysis of data based on observation of people, especially their conversations and actions. The analysis does not permit reduction of the text to a secondary status to understand the everyday practices of the respondents. Finally, ethno-methodology analysis refers to examination of how people perceive an understanding of each other. The analysed text should be clear on the actions and the conversations of the respondents so that this understanding can be based on the actual phenomena and the perspectives of the respondents themselves (Silverman, 2006).

5.7 Literature Review

Randolph (2009) cited the work of Boote and Beile (2005) on the subject of emphasising the importance of conducting and preparing a literature review. According to Boote and Beile (2005), *"A researcher cannot perform significant research without first understanding the literature in the field".*

Similarly, literature review has several purposes. For instance, it provides a framework to emphasise the importance of the study and facilitating a benchmark to compare the outcomes with other findings (Creswell, 2009). The framework will also relate the new discovery with the previous discovery in the discussion section of a dissertation (Randolph, 2009). Thus, by conducting a literature review especially by reviewing the methods and findings will give a clearer direction on the best research methodology to be adopted as well as understandings the limitations of similar research previously conducted. Conducting literature will also help the researcher to draw the conceptual framework or even build a hypothesis.

5.8 Reliability and Validity of the Research Findings

There are many ways in which the reliability and validity of the research findings could be sought according to Burns (2000) and Othman (2004) citing Denscombe (1998). The followings are some of the methods that can be undertaken to validate the research findings:

- the complexity of the phenomenon studied was justified and that oversimplication was avoided;
- the chosen research methods were clear and that practical justification and the aim of the research was achieved;

- ideas from other related subjects were reviewed by looking at practical potential resolutions were discussed and the drawbacks were identified; and
- the findings of the research were triangulated with several sources to strengthen its validity.

In addition, according to Mohamed (2006) citing the work of Neuman (2006), there are two types of evaluation namely formative and summative. The former was based on built-in-monitoring or continuous feedback on a program for program management and it took place during the development of the system. The latter on the other hand looks at the final program and was conducted once the system was built.

Mohamed (2006) further emphasised the different between formative and summative evaluation by citing the work from Patton, (2003). Both formative and summative evaluations have different criteria on its purpose, focus, desired results and level of generalisation. Formative evaluations aim to improve an intervention by looking at the strength and weakness of the specific program. The results of the evaluation will be used to recommend improvements. However, this type of evaluation is limited to the specific setting studied.

5.9 Choice of Research Methodology

After review of the different research methodology philosophies and techniques, the author chose to adapt both methodologies after considering the research problem and its scope. Most importantly, the adapted research methodology was derived from the observed limitations and type of respondents involved.

5.9.1 The Research Nature and Characteristics

This research was undertaken to solve a practical problem and to try to find solutions to the existing problem of high monthly remittances made by immigrant construction workers in the Peninsular Malaysia construction industry. Overcoming this problem requires an understanding of the immigrant construction workers' motivation and lifestyle in this location and industry.

The problem approach also required the collection of data from different sources utilising different techniques to identify the existing problem, justify the research question, investigate opinions from both the immigrant construction workers and the local authorities charged with managing the immigrant construction workers in Peninsular Malaysia and also identify the available models used to solve the problems and define the limitations.

In the literature which was examined, it was found that government intervention in an economy can affect household disposable income. This was highlighted in chapter two where two means to control the economy via promoting and controlling expenditure were outlined. These two types of economic control can be implemented through several measures in Malaysian construction economics.

5.9.2 Key challenges for Investigating Immigrant Construction Workers' Household Disposable Income

There are several challenges found during the conduct of the research. It was determined from a pilot study and thorough literature review on the best research methodology for investigating research relating to immigrant construction workers. The followings discuss the challenges.

- **Population**

There are huge numbers of immigrant construction workers in Peninsular Malaysia. As reported from CIDB Malaysia and Immigrant Department of Malaysia, there are approximately 288,722 immigrant construction workers as in 2010. However, due to time constraints, the normal sampling calculation formula could not be applied. To overcome this weakness, the addition of interview questions among each immigrant workers were carried out to ensure that the data sought is rich in terms of quantitative and qualitative.

- **Demographic**

Due to the transient nature of construction projects, it is difficult to ensure that there will be no similar respondents interviewed twice. However, this was overcome by making sure that the data was collected within the two months duration and that the selections of site and ABM office location were done according to different zones.

- **Academic background and language barrier**

The use of questionnaires as research instruments provided a faster way to collect the data with a wider scope. However, due to the special characteristics of the immigrant construction workers which were referred to in the literature this approach did not appear to be suitable. This was due to the fact that most of the respondents had a low academic background and had come from several different countries. Hence, there is no guarantee that the respondents understand the content of the questionnaire and questions being asked in the interview.

The way to address the problem is by conducting interview surveys with at least one member within the group interview having basic command and understanding of either English or Bahasa Malaysia. Any challenging questions posed were guided through by the researcher.

- **Time**

Time is the key challenge in this research. As many construction firms feels that the time taken for the research is too valuable, most of them refuse to co-operate. Hence, another means for data collections should be identified. This was done with the help of ABM staff during the competency test conducted. The respondents were identified before or after the conduct of the competency test. The immigrant construction workers were also assisted in answering interview questions by the use of questionnaire during the group interviews.

Another way to address the problem in interviewing respondents on-site was through choosing the most appropriate time for interview surveys. The most favorable time among the construction firms are during either the lunch or tea-break. However, the researcher has to prepare light refreshments for the respondents as a token of appreciations as the time allocated for them to rest was interrupted.

5.9.3 The Relationship between the Research Objectives and the Research Methods

It is important to ensure that the research methodology and the methods adopted are in line with the research aim and objectives. Table 5.2 summarises the methods applied to address the corresponding research objectives.

Table 5.2 Methods applied in achievement of research objectives

Research Methods			Research Objectives				
			1	2	3	4	5
Data Collection Methods	Literature Review		✓	✓	✓		
	Documentary Data				✓		
	Interview	Unstructured Interview				✓	
		Structured Interview				✓	
Data Analysis	Quantitative	Enumerative Inquiry - Frequency Analysis				✓	✓
	Qualitative	Investigative- Semiotic Inquiry - Content Analysis	✓	✓	✓		✓

5.9.4 Research Philosophy

The overall research methodology adopted for this research is best explained in Figure 5.5.

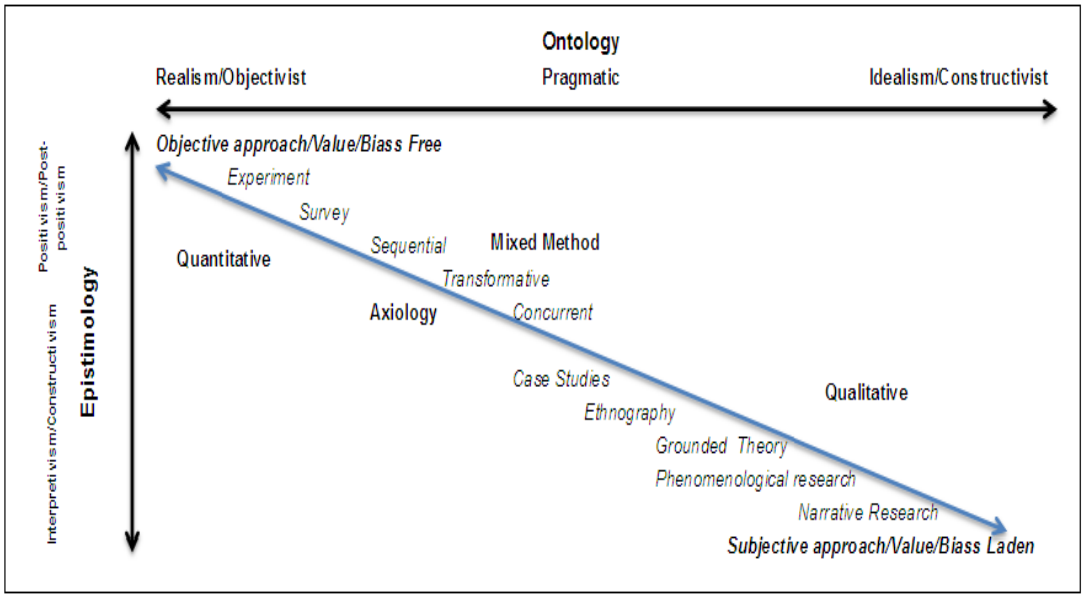


Figure 5.5 Research methodology adopted

Ontologically, this study favours a pragmatic view that combines the realism and idealism ontologies. This approach is driven by research that seeks an understanding of the participants' perceptions and meanings via human interactions, such that the respondents are not treated as independent or in terms of a single reality. To a certain extent, the methodology accepts the findings sought from the respondents, particularly as to the culture and lifestyle of the immigrant construction workers, and relates it to reality.

By adopting the constructivism point of view, this methodology enables the researcher to obtain a greater variety in procedure and scope, and it allows for an exploration suitable methods for tackling the research problem without setting any preferences. Constructivism also allows the researcher to present data in more creative ways and validate that data through arguments. The limited time duration with the respondents also led to a pragmatic approach, which is unlike a pure constructivist approach that spends more time investigating the respondents.

Epistemologically, this research tends more towards interpretivism where it acknowledges the differences between the objects of natural science and people within the phenomenon, specifically the perceptions of the respondents on how to balance the economic cycle at the national level. This study intends to explore the explanations and opinions of the respondents involved in managing the immigrant construction workers in Peninsular Malaysia by understanding the best approaches (in terms of economics, management and legislation) used to balance out the money cycle in the Peninsular Malaysia construction industry.

Axiologically, this research favours the subjective approach and a bias-laden/value-laden research approach. Although this research adopts transformative mixed method approaches, which combine both surveys and interviews with open-ended questions as part of the data collection, the positioning of the research paradigm is still inclined towards the idealism ontology and interpretivism epistemology. The research questions that are posed cover both exploratory (what) and explanatory (why and how) questions.

5.9.5 Research Approach

The approach adopted for this research was a transformative mixed method because of the exploratory and explanatory nature of the research objectives, which are aimed at gaining a better understanding of the issues and processes that surround the immigrant construction workers in Peninsular Malaysia.

In the beginning of this research, the transformative mixed method approach using a theoretical lens was undertaken because the research subject involves a large population of immigrant construction workers. Subsequently, conducting interviews with a large group of immigrant construction workers (which falls under the approach of quantitative research) enables this study to obtain aggregated statistical results that could be useful in developing suitable economic policy measures that apply to the immigrant construction workers.

In addition, the transformative mixed method allows the use of both quantitative and qualitative data collection to produce a comprehensive analysis of the problem investigated. Data were collected both quantitatively and qualitatively as well as concurrently during the research process.

The appropriate research methodology is usually developed after refining the research questions. In this case, the research questions were developed earlier in an inquiry regarding the immigrants' lifestyles and remittance patterns as well as an understanding of the current management of immigrant construction workers in Malaysia.

Selected quantitative data on the immigrant construction workers, including their demographic location in Peninsular Malaysia and personal background (such as nationalities, education and skill level) were used to set the context for the study. By surveying the respondents' lifestyle experiences, the researchers were able to understand and find solutions to the problems. For the adaptation of a quantitative approach, a case study focusing on Peninsular Malaysia's construction industry has been selected to investigate the 'why' and 'how' aspects of the identified problem. Hence, the degree of economic leakage can be tested via appropriate research tools.

From the qualitative perspective, selection of the immigrant construction workers as the main respondents is ideal for understanding the central phenomenon of the problem because the data come from the respondents themselves (Holiday, 2002). Qualitative data were gathered via semi-structured interviews with a purposed sample of interviewees, drawn from both the immigrant construction immigrant workers as well as the associated authorities, regarding their perception of the preferred economic measures and the challenges in executing both economic and legislation policies.

5.9.6 Research Techniques for Data Collection

Research techniques adopted for this project combine interviews with audio recordings and textual analysis from interview transcripts. Both approaches combine the qualitative and quantitative aspects of research philosophy.

The data collection was conducted in two stages. The first part concentrated on understanding the immigrant construction workers' disposable income and the second part on discovering which measures they preferred to be exercised. Interviews were also conducted with the authorities in charge in managing immigrant construction in Malaysia. They were asked similar questions as the immigrant construction workers on the most preferable and effective measures to manage immigrant construction workers in Peninsular Malaysia.

In the quantitative approach, interviews via the use of questionnaire forms were used to study the current lifestyles of the immigrant construction workers in regards to spending and remittance patterns. It has been shown that questionnaires can save time for both researchers and respondents during the data collection process. Findings from the questionnaires will be used as a basis to establish general laws or principles (Burns, 2000) regarding the immigrant construction workers' character and lifestyle in Malaysia as a host country. The respondents were guided through the process of filling out the questionnaire to ensure that respondents delivered accurate information for the research questions.

For the qualitative approach in this research, a series of interviews were conducted with the immigrant construction workers to gather their opinions and preferences as to the economic measures that would affect them. Lists of economic tools used to

manage economic measures were presented during the interviews. Additional ideas for ways to promote local spending were also solicited during the interview. The least preferred responses were discarded, and the most preferred were translated for use as the basis for development of the proposed development.

The following Table 5.3 shows the responses of the immigrant construction workers to some of the measures and which measures they preferred. The authorities were also asked similar questions but concentrated on the possibility of executing such measures and on their efficiency in managing cash flows and economic leakages within Peninsular Malaysia.

Table 5.3 Interview questions on economic, management and legislation measures to manage cash flow economic leakage within the Peninsular Malaysia.

Area	**Strategy to manage cash flow economic leakage within the Peninsular Malaysia construction industry**	**Potential Measures to be implemented**
Proposed Economic Measures	*Control over purchasing power*	i) Possibility to impose personal income tax, ii) Possibility to impose Levy, iii) Possibility to impose EPF contribution scheme, iv) Possibility to utilize CIDB Green Card with similar function as National Insurance (NI) scheme
	Means to promote local spending	i) Possibility to impose minimum monthly wages, ii) Promote local bank ownership among immigrant construction workers, iii) Provide transportation provision for immigrant construction workers to commute, iv) Provision of ration suppliers on site

Proposed Legislation requirements	*Control over purchasing power*	i) Possibility to conduct competency Test Before entry among immigrant construction workers, ii) Possibility to conduct competency Test After entry among immigrant construction workers Competency Test
	Means to promote local spending	i) Regulate the need to undergo basic training among immigrant construction workers, ii) Impose and regulate minimum standard accommodation for immigrant construction workers

Interviews were conducted from 1st April until 6th June 2008 in an area covering Peninsular Malaysia. During the interviews, questionnaires were distributed to assist the immigrant construction workers in answering questions that might be confusing or challenging to them. Interviews were conducted in two stages with the first part concentrating on immigrant construction workers' disposable income and the second focusing on their experience of working in Malaysia and their points of view about the best ways to promote local spending and contributions to the local economy. The entire process was conducted in groups and lasted no more than one hour.

Additionally, a series of interviews with representatives from the government bodies responsible for managing the immigrant workers were also conducted. Similarly, they were asked about the best economic measures for controlling economic leakage and promoting local spending by the immigrant construction workers. This approach was designed to identify practical and unbiased perspectives on ways to manage economic leakage effectively.

The actual techniques used to gather data are a mixture of several techniques. Table 5.4 summarises the types of data sought and the corresponding techniques used to collect the data.

Table 5.4 Tabulation of Data Collection techniques with corresponding respondents and information collected.

RESEARCH APPROACH	RESEARCH TECHNIQUES		RESPONDENTS	INFORMATION SOUGHT
Quantitative	Survey	Face-to-face interviews	Immigrant Construction Workers	Immigrant construction workers' household income disposal
Qualitative	Observations	Photographs	Immigrant Construction Workers	On-site accommodation facilities and lifestyle
		• Face-to-face	Immigrant Construction Workers	Immigrant construction workers' most preferable economic, management and legislation measures towards them.
Qualitative	Interviews	• Face-to-face • E-mail internet interview	Authorities in charge of managing immigrant construction workers in Peninsular Malaysia • CIDB • CLAB • Immigration Department • Malaysian Home Affair - Ministry of Human Resources • ABM	Management of immigrant construction workers in Peninsular Malaysia in terms of role and responsibilities, process, rules and regulations imposed
				Authorities' most preferable and efficient measures in terms of economic, management and legislation measures towards immigrant construction workers.
		• Face-to-face	Financial Institutions in Peninsular Malaysia	Procedure to open banking account for immigrant workers
	Document survey	• Public documents	Authorities in charge of managing immigrant construction workers in Peninsular Malaysia • CIDB • CLAB • Immigration Department • Malaysian Home Affair - Ministry of Human Resources • ABM	Management of immigrant construction workers in Peninsular Malaysia in terms of role and responsibilities, process, rules and regulations imposed

5.9.7 Research Scope and Sampling

An interpretation of the research scope can be constructed in many ways. First, it can be stated in the form of boundaries of countries, cultures and religions. It can also be viewed from another aspect such as a field of study or theory. For example, the disciplines of economics, sociology, physics and mathematics can also be interpreted as research boundaries.

The research scope of this project falls under both criteria. The scope of the research boundaries concentrates on Peninsular Malaysia, while the research studies and theoretical scope fall under the topics of economics and construction management. Furthermore, the scope can be narrowed down to the construction branch, specifically, the immigrant construction workers. The intent behind defining the research scope and the study is to gain a rigorous understanding of the research problem. By so doing, explanations and any theories applied are intended solely for the particular research area.

Due to the large population of immigrant construction workers in Peninsular Malaysia, this research was conducted by selecting respondents in a random manner. The latest report prepared by the CIDB on the percentage distribution of immigrant construction workers by state was obtained to gather the addresses and construction firms involved with an ongoing project. The sampling process requires a six-step procedure as outlined by Churchill and Iacobucci and cited by Dusuki, (2005). This procedure is depicted in Figure 5.6.

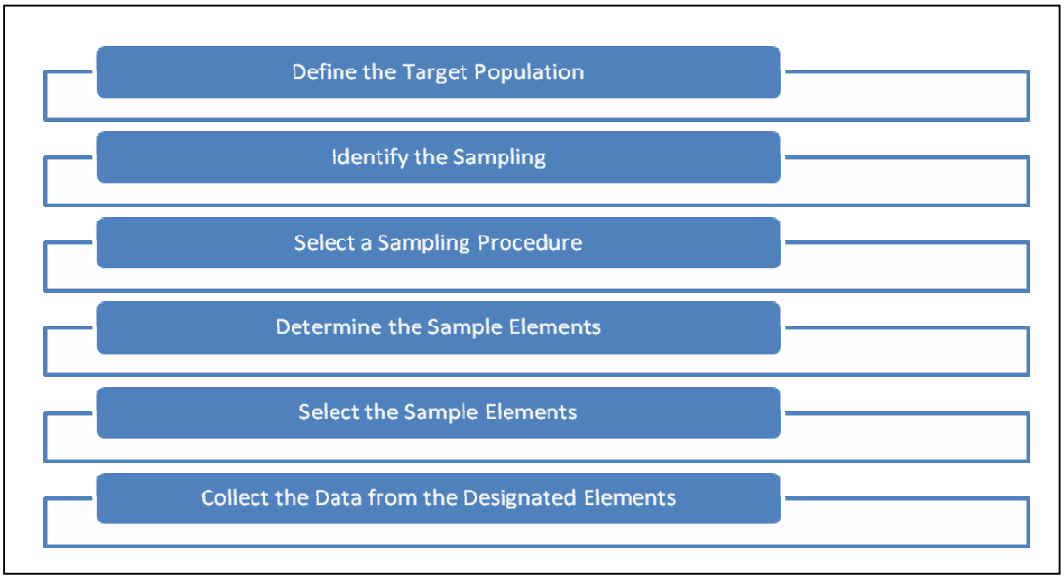


Figure 5.6 Six-Step Procedures for Drawing a Sample.
Source: Churchill and Iacobucci (2002), cited in Dusuki 2005

In the sampling process, the distribution of the questionnaires for the first stage was conducted according to the demographics of Peninsular Malaysia that constitute four regions: the Northern region; Central region; Eastern region; and, Southern region. Each of these regions consists of several states. For instance, the Central Region consists of the Federal Territory of Kuala Lumpur and Selangor and the Southern Region consists of the Johor Bahru, Melaka and Negeri Sembilan states. The Northern Region consists of Perlis, Kedah, Pulau Pinang and Perak, while the Eastern region covers Kelantan, Terengganu and Pahang (Dusuki, 2005).

The classification of zoning was based on commonly used classifications of Peninsular Malaysia's population (Dusuki, 2005; Asia Pacific Migration Research Network, 2006). Malaysia consists of Peninsular Malaysia and East Malaysia, and East Malaysia consists of the Sabah and Sarawak states. This research concentrates only on Peninsular Malaysia because of several differences found in the systems and legislation used to manage immigrant construction workers.

The second stage of the interviews with the aid of questionnaire form was carried out by selection of one or two states from each zone. This selection was performed due to difficulties in attaining permissions from the construction firms to interview immigrant construction workers. To overcome these problems, this project acquired help from ABM of CIDB to undertake the questionnaire surveys during the competency test conducted by ABM for immigrant construction workers who wish to renew their working permits. Appointments were made with the person in charge of the accreditation process at ABM along with randomly selected ongoing construction projects short-listed by the CIDB itself.

Another method for gathering data was involved contacting the construction firms with ongoing projects that were listed by the CIDB. Appointments were made via letters and telephone with the help of JKR, another government agency that manages government projects. The process of gathering responses from the construction firms was expedited with the help of both CIDB and JKR.

The geographical location of the site was taken into consideration by recognising sites in both urban and remote areas. The respondents were chosen either by the trainer during the accreditation process or by the site supervisor. The selections were mostly based on the respondents' nationalities and at least one respondent with literacy in either English or Malay. Figure 5.7 provides an overview of the selected states representing the different regions of Peninsular Malaysia.

Figure 5.7 Questionnaires and Survey Tabulation of Selected States in Peninsular Malaysia

Questionnaire distribution and interview administration were conducted in two ways, either during the accreditation process at ABM and by appointments made with several construction firms. Both approaches were used to include both legal and illegal immigrant workers. Most of the immigrant workers who had undergone the competency test (also known as accreditation) were those who are legal workers and who have obtained certified work permits. Those who work at the construction sites without having completed their competency test are usually workers either supplied by the labour supply as contractors (or 'kepala') and those who work for and are managed by the main contractors themselves.

This approach has been proven as appropriate because a number of illegal immigrant workers were included in the interviews. Sabah and Sarawak, which form the Western part of Malaysia, have been discarded from the research due to several differences in policy towards managing and engaging immigrant workers. Additionally, to prevent disturbances to the construction progress of the main contractors, the researcher has found three suitable times to conduct interviews during a day.

5.9.8 Research Instruments

At the preliminary stage of the research, a pilot test was conducted using a set of questionnaires distributed via drop-off surveys. This process was completed with the help of several people in the government agencies working for JKR and CIDB. The purpose of the pilot test was to check for uniformity, consistency and validity of the variables used in the questionnaires, mainly in terms of the language used and the timing of the questionnaire surveys.

Analyses were performed, and the findings showed poor feedback as most of the immigrant construction workers in Peninsular Malaysia have poor English literacy and minimal understanding of the national language of Malaysia (Bahasa Melayu). Moreover, without help, the respondents failed to complete the entire questionnaire because they misunderstood the questions. Hence, a better approach was implemented by adopting a face-to-face survey interview and by preparing a different set of interview questionnaires in different languages to overcome the weakness of the data collection method.

Due to time constraints, translation of the interview questionnaire survey can only be performed in Bahasa Indonesia with the help of an undergraduate student from

Indonesia who is studying in the Quantity Surveying Programme at the Department of Quantity Surveying, Faculty of Built Environment, Universiti Teknologi Malaysia, Johor, Malaysia.

The initial findings showed that the remittance pattern among the immigrant workers varies from 3% to 90% of their wages received monthly. The high percentage of the remittance does not correlate with the amount of wages received as expected in the normal income disposal. It showed that although the income received as somewhat average, the percentage of remittance made could be high. This demonstrates that there are other factors contributing to the tendency to remit.

Apart from the face-to face survey interviews and interviews with corresponding authorities in charge of managing immigrant construction workers as the primary data, data collections was also gathered from secondary data from organisations reports such as the International Organization for Migration, World Bank Research Working Paper Series and published statistics and reports on construction industries from CIDB, CLAB and ABM and also published reports and documents from MoHA and MoHR.

5.9.9 Interview contents on Immigrant Construction Workers' Character and Disposable Income

The questionnaire consists of three sections: the respondents' personal background (consisting of name, gender, nationality, age, employment duration in Malaysia), competencies category, trade specialisation and current project location. These categories were intended for use in understanding the profile of the respondents and analysis of the findings for trends.

This section focuses only on the respondents' level of education and was intended to deduce whether educational background yields some advantage to the immigrant construction workers, especially in terms of wages received. Section 3 focuses on income disposal by immigrant construction workers and the details of their monthly remittances. The aim of this section was to correlate the relationship between their income disposal in Malaysia and the percentage of monthly remittances made. This information will be the basis for the design of a suitable policy for development of economic measures.

5.9.10 Interview on Respondents' Preference on the Most Preferable and Effective Measures on Economic, Management and Legislation

Several sets of interview questions were prepared to gather different information from various respondents. For instance, immigrant construction workers were asked about their perceptions of the most common economic measures to provide justification for the economic measures that were ostensibly chosen to benefit them. Similarly, the representatives of various government agencies were asked about the most promising economic and legislation measures adopted for immigrant construction workers.

The questions were based on the economic measures either on the means to control spending and means to promote spending. The most preferred answers were used in the proposed framework while the least preferred were discarded or adjusted to improve the current practice in Peninsular Malaysia. A summary of the interview questions and the corresponding interviewees can be found in **Appendix 5**.

5.9.11 Data Collection

The process of data collection continued for two and half months, beginning from 1st April and ongoing until 6th June 2008. The two main approaches were the distribution of face-to-face surveys / group interviews and one-on-one interviews.

a. Face-to-face interview

Face-to-face interviews were conducted and targeted to the immigrant construction workers. The questionnaires were distributed in groups because this was the most preferred method among all respondents, particularly the immigrant construction workers, construction firms and the persons conducting the competency test at ABM.

The construction firms and the ABM preferred the group interview surveys as it saved time in gathering a number of responses compared to one-ton-one survey interviews. The immigrant construction workers also favoured this method because they felt more secure and less intimidated in the presence of their peers and 'types'.

b. One-on-one interview

One-on-one interviews were conducted with several personnel in positions of authority at various government agencies who were involved in the management of immigrant construction workers in Peninsular Malaysia. The details of the interviewees can be found in Table 5.5.

Table 5.5 Tabulation of respondents with their corresponding attachment and designation

Government Agencies	Designation
ABM - Each different branches	Technical Assistant
Financial Institutions	Branch Managers
CIDB	Head Executive
CIDB	Head Executive
CLAB	Head Executive
Construction Firm	Managing Director
Immigration Department	Chief Director
JKR	Assistant Director
MoHR	Assistant Director
MoHA	Assistant Director

5.9.12 Data Analysis

Collected data were analysed using several techniques that were appropriate for the research approach. These techniques involved the use of several types of inquiries, such as enumerative as applied to the immigrant construction workers' household disposal income as well as iterative and investigative inquiries from transcribed interviews. The results of the immigrant construction workers' income disposal patterns were enumerated and presented in computer graphics suitable to reflect the patterns.

Analyses were also conducted on documents, especially on public reports published by the authorities in charge of managing immigrant construction workers in Peninsular Malaysia, particularly regarding the roles and responsibilities of each party. Photos taken during the interviews that documented the condition of the current on-site accommodations where the immigrant construction workers were housed were also studied to support the findings.

Opinions on the best economic and legislation measures (from the perspectives of both immigrant construction workers and the authorities in charge) were also enumerated so that they could be taken into consideration for framework development.

Data sought from surveys were analysed using descriptive statistics while data obtained from interviews and observation were analysed using both transcribed interviews and documents from document analysis. Content analysis of the interviews and documents was performed by establishing several categories and counting the number of occurrences in each.

5.9.13 Research Limitations

Limitations to the research highlight problems in acquiring research data or any other difficulties related to completion of the research or the representative nature of the research in regards to its scope and study. Due to the huge population of immigrant construction workers in Malaysia, the research was conducted by examining the number of respondents according to the percentage of immigrant construction workers currently engaged in the states, as prepared by the CIDB.

The main limitation for this research was setting up appointments to interview the main respondents, the immigrant construction workers. Interviewing the respondents meant contacting the main contractors that had an ongoing project and allowing them some time to conduct interviews.

To accomplish this task, a list of recent project awards and information about the main contractors was acquired from the CIDB. The list document the contracts awarded from 2007 to 2008 (CIDB, 2007). Additionally, another approach involved acquiring

access to immigrant construction workers during the accreditation day held at ABM, a subsidiary of CIDB. The main function of this body is to train construction workers. Immigrant construction workers who wish to extend their work permits are required to undergo this accreditation to prove their skills in specific trades.

To prevent duplication of data from the respondents, the data collection was conducted over two and half months. The choice of duration was made considering the transitional periods of the immigrant construction workers, especially those who are masters of one trade and travel to other site once their job is completed.

In addition, respondents were also identified and interviewed with help from the consultants who had ongoing projects. This was performed to maximise the number of respondents and to minimise the low response rates received from the contractors. The low number of responses received from the main contractors could be due to a hesitation to co-operate because of concerns over time lost in their project duration. Additional reasons might also include the presence of illegal immigrant workers onsite and security concerns. Thus, multiple approaches were chosen to cover the main contractors, consultants and ABM to maximise the number of respondents as well as to capture information from both legal and illegal immigrant construction workers.

5.10 Reliability and Validity of the Research Findings

This research was evaluated using formative evaluation was and was conducted to improve the current system of managing immigrant construction workers in Peninsular Malaysia from the perspective of economics, management and legislation. It focused on searching for the strengths and weaknesses of the current system with regard to the literature and data collection.

For instance, the research found that many rules and regulations imposed for the immigrant constructions workers by the Malaysian government is flawed, revamped and suspended due to many problems. Some of the problems were due to the rejections of the immigrant construction workers themselves. Other problems were due to duplication of roles and responsibilities among the authorities in charge in managing the construction workers in Peninsular Malaysia.

Hence, the proposed framework has taken into considerations view from several parties relating to the research such as the authorities in charge, the immigrant construction workers and some representative from the construction firms to ensure that the recommendations for improvements has covers the specific research scope. In addition, this research has adopted the mixed-methods approach which utilises data from several different sources to strengthen its validity.

5.11 Concluding Remarks

The methodology adopted for this research was intended to assist in the development of a framework for managing cash flow economic leakage within the Peninsular Construction Industry by incorporating economic tools and measures as well as consideration of managerial and legislation aspects. A number of well-defined objectives were developed to achieve the overall research aim. A brief introduction to the philosophy of research methodologies and the overall research process were was presented to aid in basic understanding of the advantages of each research design, research approach and method adopted as well as to justify the advantages and disadvantages of each. This background is important for selection of an appropriate method for this research by taking into consideration its limitations in terms of research design formulation, data collection and analysis and framework development.

Existing tools used by the Malaysian government to control the economic leakage and measures aimed at the immigrant workers were studied to identify the research gaps and select a hypothesis. The literature on the most available and appropriate tools used to control and manage economic leakage was also studied for use as a benchmark for suggestion of suitable and practical measures used to manage economic leakage in the Malaysian construction industry.

Special attention was focused on the ‘why and how’ investigation regarding human factors and political issues to justify and support the research. In addition to the issues involving the use of immigrant workers, special attention was also directed to issues of remittances and its impact on the global economy.

Chapter 6 Economic Characteristics to Manage Immigrant Construction Workers

6.1 Introduction

This chapter provides both descriptive statistics and interview findings of the respondents in the sample as a basis for understanding the characteristics of immigrant construction workers and the authorities that manage them. An understanding of the background, character and behaviour of these respondents will enable the development of the most appropriate economic, management and legislation measures to manage the economic leakage within Peninsular Malaysia's construction industry. This method, known as profile analysis, is commonly used in studies in the social sciences involving the survey and investigation of perception and behavioural issues (Dusuki, 2005).

The purpose of this chapter is to provide an overview of the respondents' characteristics and profiles to lend insight into their current lifestyle, they way they are managed and struggles from three perspectives: economic, managerial and legislative. This pioneering study contributes to academic research by presenting the background of immigrant construction workers and their perceptions of the most favourable economic measures to be exercised towards them. The chapter begins by presenting the general characteristics of the sample followed by specific characteristics of different respondent groups. This chapter is divided into two sections: the profile of immigrant construction workers and an analysis of the most appropriate measures from the perspectives of both the immigrant construction workers; and, the authorities who manage the immigrant construction workers in Peninsular Malaysia.

6.2 Immigrant Construction Workers' Characteristics

It is important to understand the characteristics of immigrant construction workers to justify their lifestyle in the host country and specifically within the construction industry. This background will give some idea of their backgrounds in terms of education, nationalities, gender, age and skills.

6.2.1 Profile of Respondents

As mentioned in Chapter 4, 108 immigrant construction workers were interviewed using group interview approach during the data collection period. In addition, several people in charge of managing the immigrant construction workers from ABM, CLAB, CIDB, the Immigration Department of Malaysia and Ministry of Human Resource (MoHR) were also interviewed to gain an understanding of the current system for managing immigrant construction workers and the rules and regulations imposed on them. Additionally, these respondents were also questioned about their opinion on imposing economic, managerial and legislative regulations on the immigrant construction workers.

The samples of the respondents especially the immigrant construction workers were taken from several different states in Peninsular Malaysia to ensure the quality and wide representation of the sample study as depicted in Table 6.1. Respondents from aforementioned authorities do not need to be interviewed according to the zones as the centre of managing offices located at central region.

Table 6.1 Distribution of respondents by zone and organisation

Respondents	East	Central	South	North	Others	Total
ABM	0	1	0	0	0	1
CLAB	0	1	0	0	0	1
CIDB	0	3	0	0	0	3
Immigrant Construction Workers	28	13	42	25	0	108
Immigration Department of Malaysia	0	1	0	0	0	1
MoHR	0	1	0	0	0	1

The next section provides a general background of the interviewed immigrant construction workers, including gender, nationality, age, working experience in Malaysia, skill level, trade, current site location and educational background. This background was followed by a description of the economic background of the respondents, including average monthly income, average monthly percentage of remittance and household disposal income. By understanding the economic background of the immigrant construction workers, better economic measures can be enacted.

6.2.2 Classification of the General Background of Respondents by Age, Gender and Nationality

Table 6.2 below showed that male immigrant construction workers dominate the interviewees; only 2% of the interviewed immigrant construction workers were female. Most of the respondents were Indonesians (85%), followed by Bangladeshi (12%), Myanmar (5%) and Pakistan, Thailand and Vietnam (2% each). This pattern is similar to that of the immigrant workers employment statistics prepared by the Immigration Department of Malaysia in 2007 and the 2007 CIDB statistic report.

Table 6.2 Distribution of Respondents by Gender, Nationality and Age

Category	Respondents Distribution	Frequency	Percent (%)
Gender	Male	106	98.1
	Female	2	1.9
Nationality	Bangladesh	12	11.1
	Indonesia	89	82.4
	Myanmar	4	3.7
	Pakistan	1	0.9
	Thailand	1	0.9
	Vietnam	1	0.9
Age Group	18-24	14	13.0
	25-34	72	66.7
	35-50	22	20.4

According to the economics literature, different age groups have different spending habits. Because most of the respondents are between 25-34 years old, they have certain liabilities. As noted in the literature, the motivation of the immigrant construction workers is to earn more income in the host country than they would in their home country. The respondents must help support their families. Additionally, the more mature the households, the higher the liability, wages and purchasing power. The liabilities will increase if the respondents are married and have their own family to care for. The respondents' ages could affect their spending patterns and liabilities in both Malaysia and in their home country.

6.2.3 Classification of Respondents by Educational Level

It is useful to understand the education background of the respondents in order to draft a policy towards them. That is, the policy should not be too complicated and concise in terms of when, where and who will be in charge in assisting and executing the measures. The following table Table 6.3 depicts the classification of respondents' academic background.

Table 6.3 Classification of Respondents by Educational Level

		Frequency	Percent (100%)
Educational Level	No Formal Education	14	13.0
	Primary School	29	26.9
	Secondary School	71	65.7
	College / Diploma / Matriculation / A-Level	2	1.9
	Not Mentioned	1	0.9

Table 6.3 showed that 66% of the respondents completed secondary school only. Another 27% only completed primary school, while 12% of the respondents do not have any formal education. However, 2% of the respondents hold a college diploma from their home country. This finding indicated that the majority of the immigrant construction workers in Malaysia have a poor educational background and thus may have some difficulty understanding the complex regulations imposed on them.

6.2.4 *Classification of Working Experience in Malaysia, Skill Level and Trade Specialisation*

Table 6.4 depicts the respondents' work experience in Malaysia. Most of the respondents have worked in Malaysia for more than 5 years (59.3%). Based on the literature on remittance, the duration of an immigrant's stay in Malaysia will affect his or her spending habits: a longer stay should correspond to greater spending. However, this trend depends on how long the immigrant intends to stay in Malaysia.

Table 6.4 Classification of Respondents by Working Experience, Level of Skill and Trade Specialisation

Classification of Respondents		Frequency	Percent (%)
Work Experience in Malaysia	0-2 years	19	17.6
	3-4 years	22	20.4
	5 years or more	64	59.3
	Not mentioned	3	2.8
Skill Level	Unskilled / General Labour	8	7.4
	Semi-skilled	61	56.5
	Skilled	33	30.6
	Not Mentioned	6	5.6
Trade	Plant Operators	3	2.8
	Plasterer	21	19.4
	Bricklayer	30	27.8
	Carpenter	49	45.4
	Plumber	3	2.8
	Ceiling / Partition Fixer	5	4.6
	Concreter	14	13.0
	Roofer	6	5.6
	Heavy Machine Operator	1	0.9
	General Labour	12	11.1
	Skilled ground/earth worker	2	1.9
	Steel worker/Bar bender	23	21.3
	Others	7	6.5
	Nil	1	0.9

A cross-tabulation of the respondents' work duration and skill level confirms the proposition that the longer the work experience in Malaysia, the more skilled the immigrants are. Additionally, most of the respondents regard themselves as semi-skilled workers with various abilities to work in different trades. However, most of the respondents work as carpenters (45.4%), bricklayers (27.8%) and steel workers / bar benders (21.3%).

6.3 Respondents' Disposal Income and Remittance Pattern

The following shows the respondents' responses regarding three major life necessities: shelter, transportation and monthly rations. This section of the analysis describes the respondents' household income and remittance pattern to determine the correlation between these two quantities.

As highlighted in Chapter 2 on economics, people aged 35 years old or more will tend to save more of their income, as compared to the younger age group. These phenomena can be linked with income stability and Maslow's hierarchical needs, where humans concentrate on basic needs first before concentrating on safety, love, esteem and self-actualization.

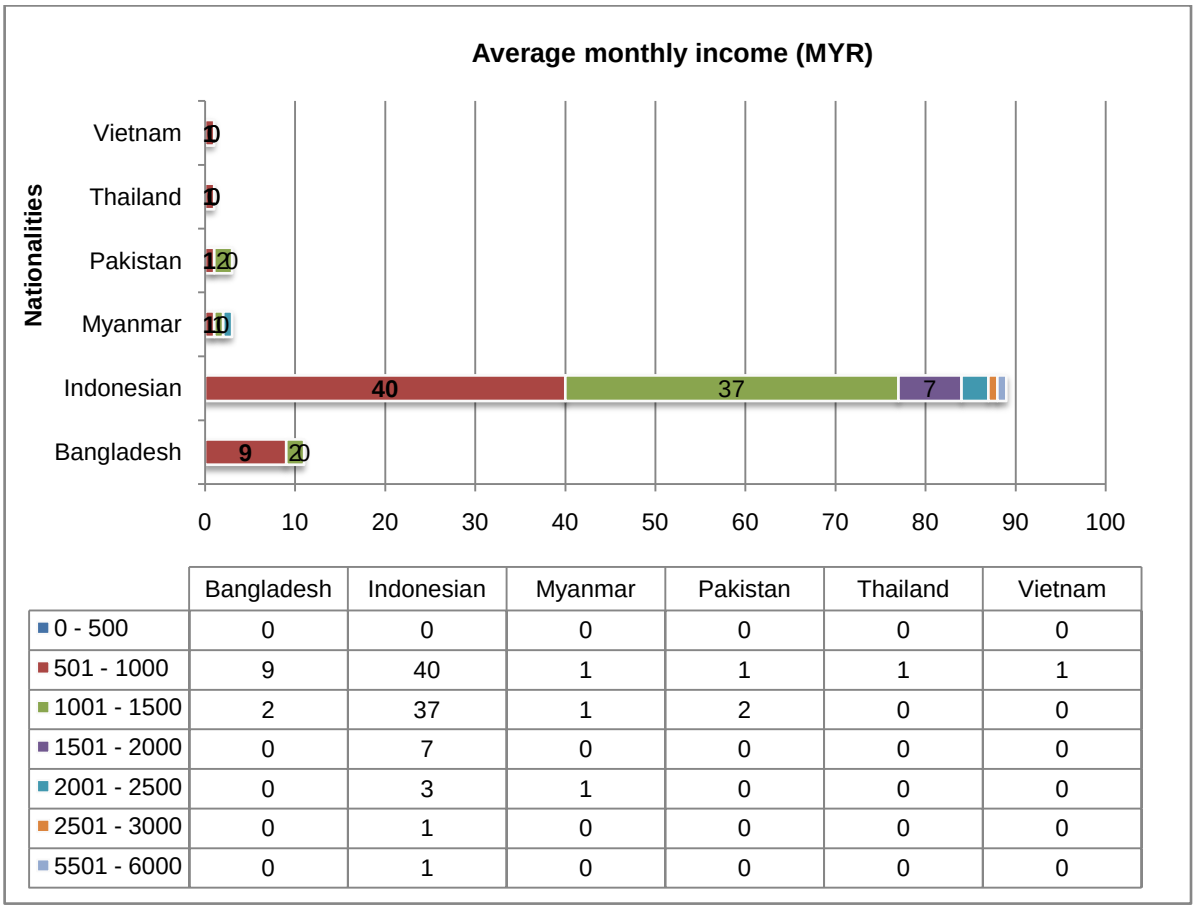
6.3.1 Classification of Average Monthly Income and Average Percentage of Monthly Remittance

Table 6.5 depicts the respondents' average monthly income. This was studied to understand their household disposable income. By looking at the respondents' expenses, we can come to an understanding of their marginal propensity to consume, given their budget constraints and expenditure preference.

Table 6.5 Classification of Respondents by Average Monthly Income and Average Monthly % of Remittance

Classification of Respondents		Frequency	Percent (%)
Average Monthly Income	MYR 501 – 1000	53	49.07
	MYR 1001 – 1500	41	37.9
	MYR 1501 – 2000	7	6.5
	MYR 2001 – 2500	4	3.7
	MYR 2501 – 3000	1	0.9
	MYR 5501 – 6000	1	0.9
	Not Mentioned	1	0.9
Average Monthly % of Remittance	1 -10%	4	3.7
	11 – 20 %	5	4.6
	21 – 30%	11	10.2
	31 – 40%	18	16.7
	41 – 50%	32	29.6
	>50%	30	27.8
	Nil	6	5.6
	Others	2	1.9

A cross-tabulation of respondents' skill levels and average monthly income does not corresponds with the respondents' response to their level of skill. It shows that the respondents are categorised under semi-skilled labour which account for 56.5%. However, the average monthly income of the respondents showed that 49.07% receive on average MYR501-1000 monthly. Hence, it can be seen that although the respondents perceived themselves as semi-skilled workers, their income does not correspond to this. This showed that the immigrant construction workers did not receive the right amount of income for their level of skill, according to normal wage distribution that corresponds to higher wages with higher skills acquisition. Average monthly income as a function of nationality is depicted in Figure 6.1.



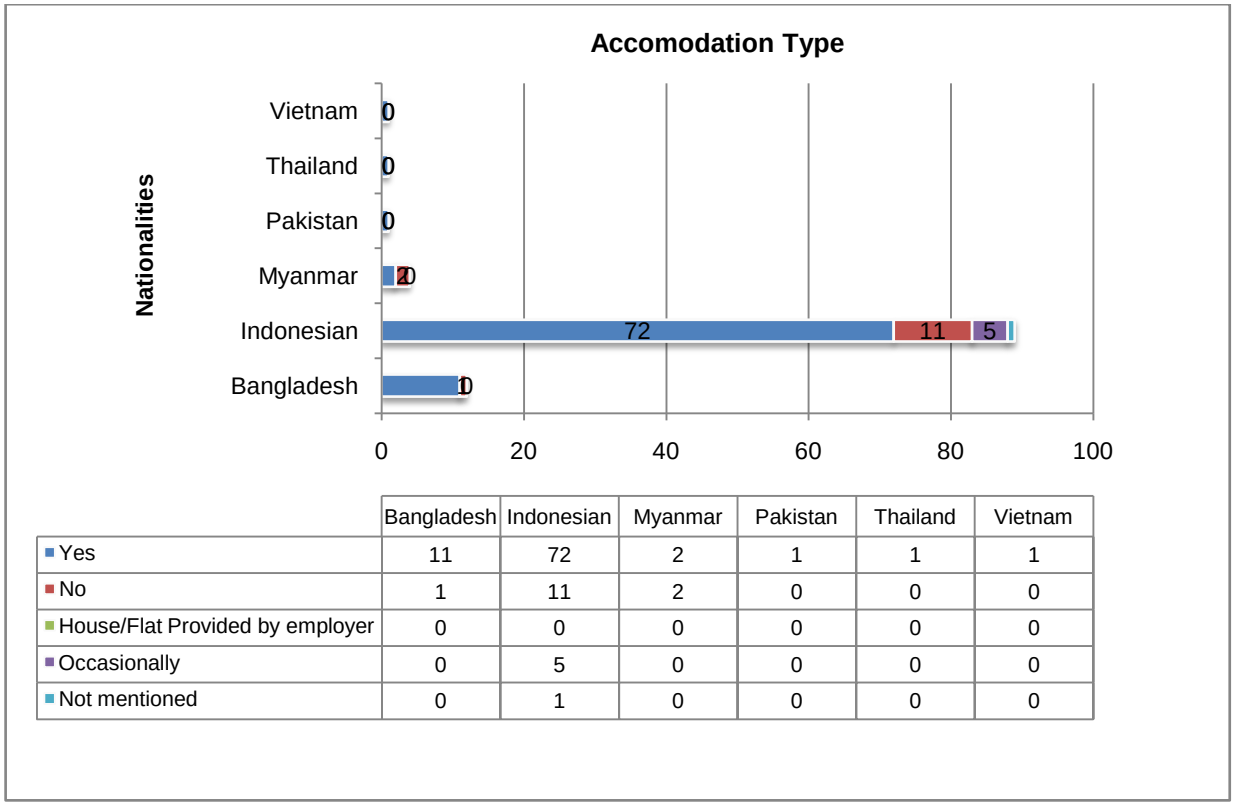
	Bangladesh	Indonesian	Myanmar	Pakistan	Thailand	Vietnam
0 - 500	0	0	0	0	0	0
501 - 1000	9	40	1	1	1	1
1001 - 1500	2	37	1	2	0	0
1501 - 2000	0	7	0	0	0	0
2001 - 2500	0	3	1	0	0	0
2501 - 3000	0	1	0	0	0	0
5501 - 6000	0	1	0	0	0	0

Figure 6.1 Classification of respondents' average monthly income (in MYR) by nationality

As shown in Figure 6.1, one respondent earned a very high income, nearly MYR6,000 per month. When the respondent was asked to clarify this response, he admitted that his family run a part-time food stall business in Kuala Lumpur. According to the surveys, the average monthly income among the respondents was MYR501-1,000, which is much lower than the average income of the locals. Thus, this income difference explains why most locals are not interested in working in the construction field.

However, a cross-tabulation made with a statistics prepared by the Ministry of Work, Malaysia, showed that the average daily pay for a general construction worker in Peninsular Malaysia is in the average of MYR65 daily. This means that the actual average monthly income of the respondents within the range of MYR1,000 - MYR1,600. The contradicting answers from the respondents could be derived from their suspicion on the purpose of the research. However, despite their low monthly income, most of the respondents remit almost 50% of their monthly earnings. This finding strengthens the view that the respondents are very determined to help their family through what is known as a ‘social contract’.

Due to the transient nature of construction work, most of the respondents live in temporary on-site accommodations known as ‘kongsi’ (sharing). Most of the construction firms adopt this simple housing solution to reduce costs. Most of the temporary accommodations were in poor condition, lacking complete facilities. However, due to their low wages, the respondents have no choice but to live in the ‘kongsi’. This situation gives respondents even more resources to remit, as no payments are needed. This behaviour is reflected in Figure 6.2.

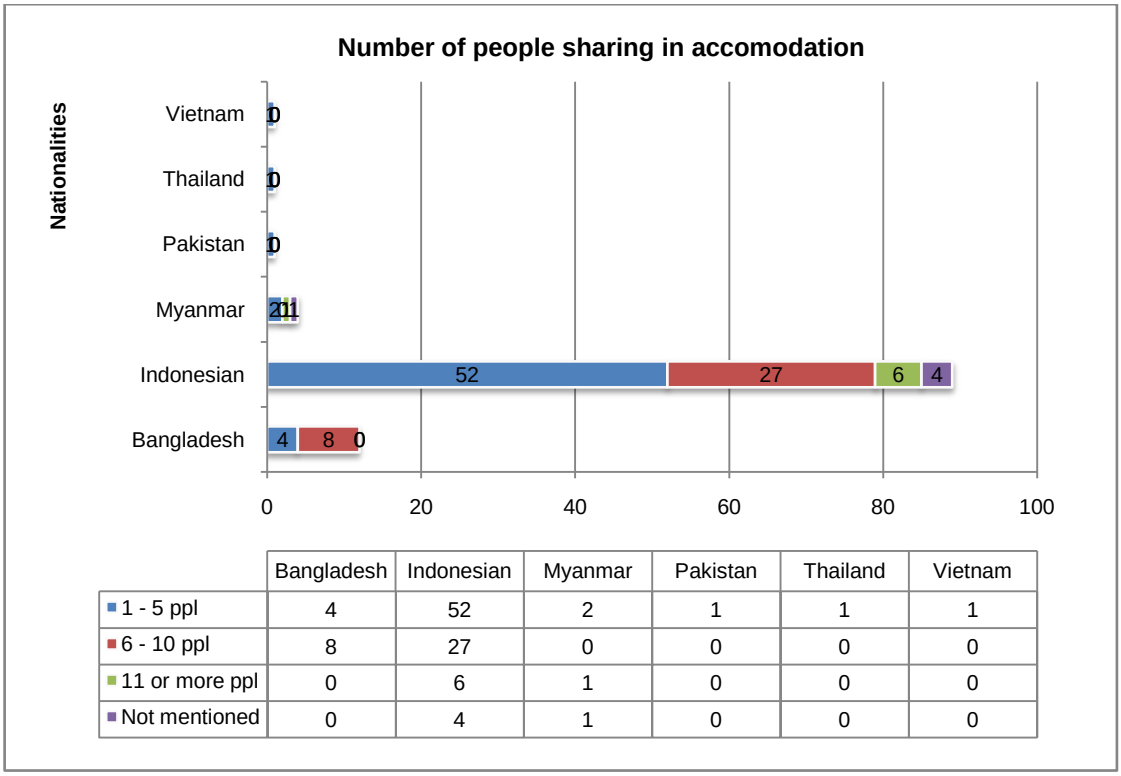


	Bangladesh	Indonesian	Myanmar	Pakistan	Thailand	Vietnam
Yes	11	72	2	1	1	1
No	1	11	2	0	0	0
House/Flat Provided by employer	0	0	0	0	0	0
Occasionally	0	5	0	0	0	0
Not mentioned	0	1	0	0	0	0

Figure 6.2 Classification of accommodation type in host country

6.3.2 Classification of Number of People Sharing an Accommodation

Despite the poor conditions of the 'kongsi', the respondents are satisfied with living in them despite having to share a small room with many other people. This once again strengthens the fact that the immigrant construction workers are willing to sacrifice their own comfort in order to help their family in their home country. Figure 6.3 illustrates the number of people sharing a room.

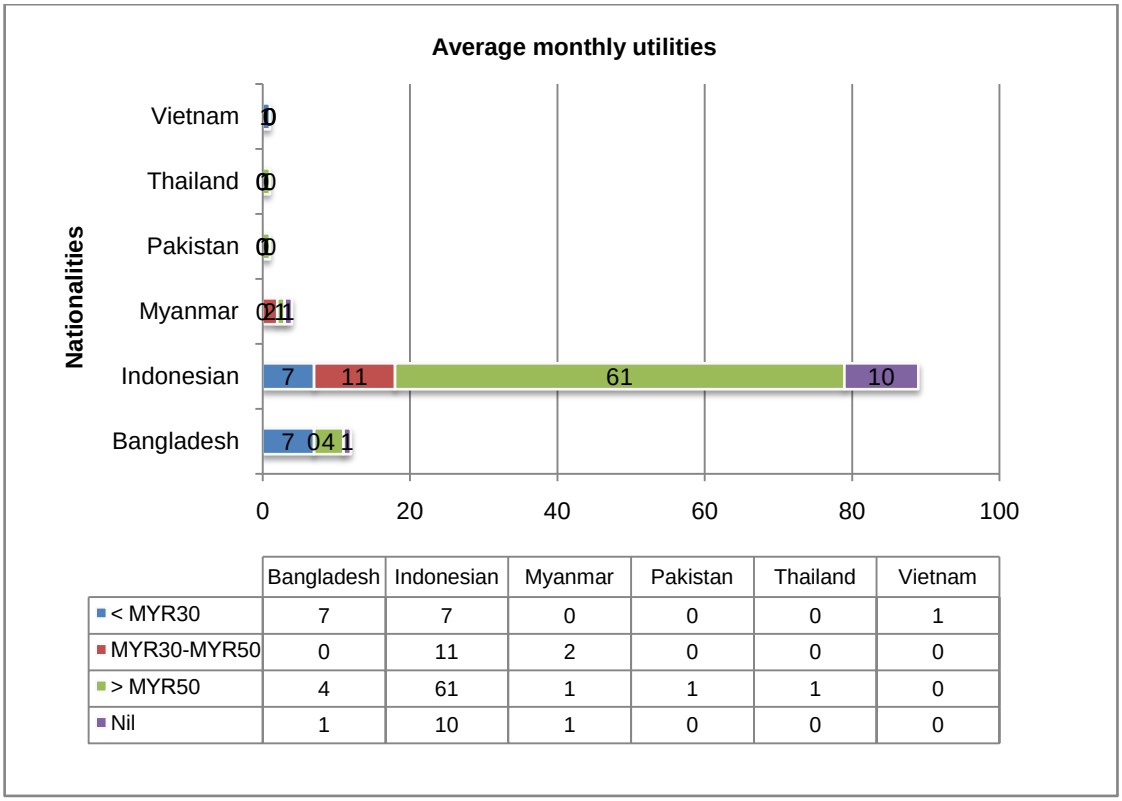


	Bangladesh	Indonesian	Myanmar	Pakistan	Thailand	Vietnam
1 - 5 ppl	4	52	2	1	1	1
6 - 10 ppl	8	27	0	0	0	0
11 or more ppl	0	6	1	0	0	0
Not mentioned	0	4	1	0	0	0

Figure 6.3 Number of people sharing an accommodation by nationality

6.3.3 Classification of Amount of Average Monthly Utilities

In addition to having on-site accommodations, the respondents do not have any utility bills, only mobile telecommunication charges. Most of the respondents will buy a pre-paid telephone service to communicate with their family in their home country. Figure 6.4 depicts the average amount spent on utility bills.

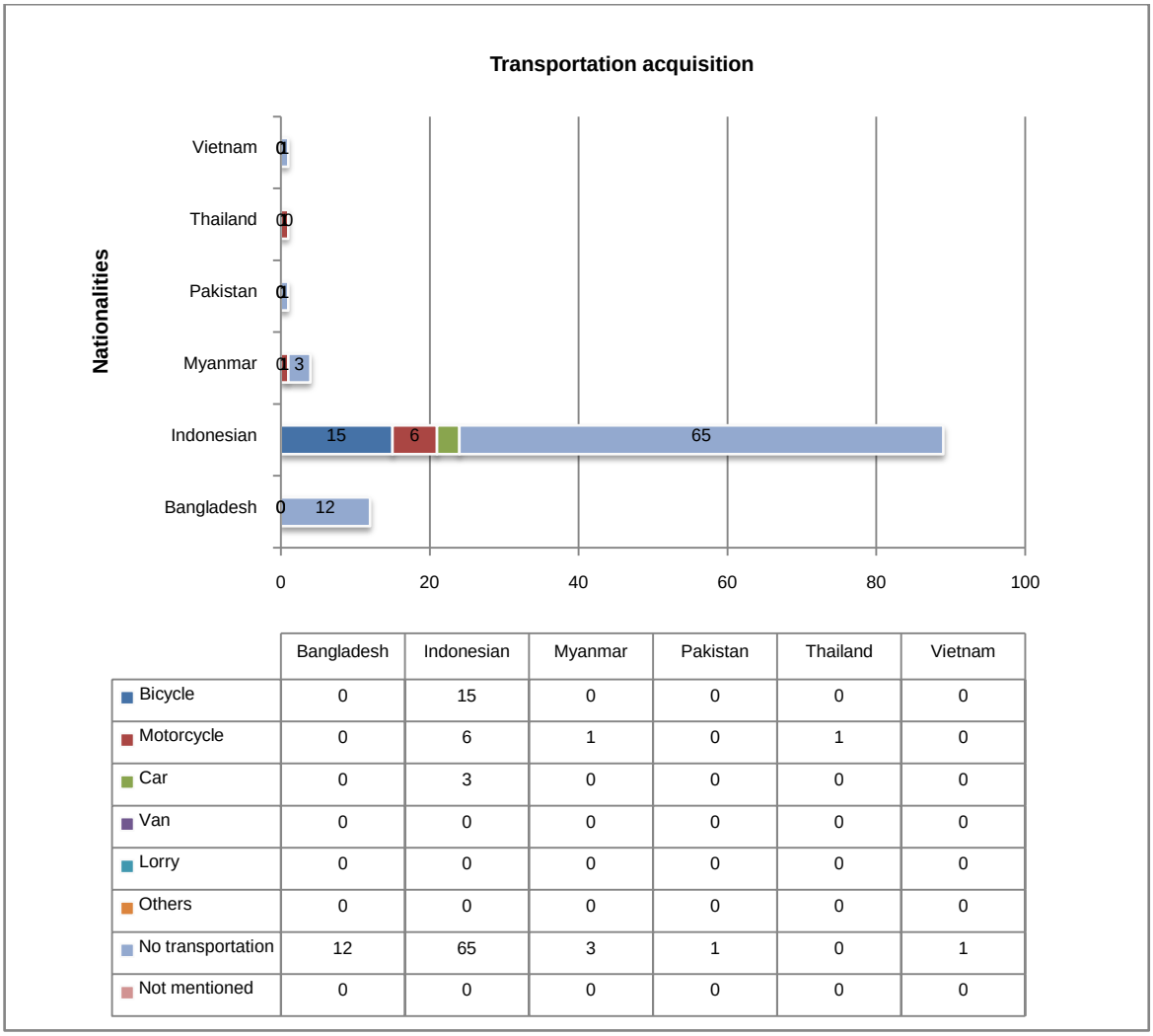


	Bangladesh	Indonesian	Myanmar	Pakistan	Thailand	Vietnam
< MYR30	7	7	0	0	0	1
MYR30-MYR50	0	11	2	0	0	0
> MYR50	4	61	1	1	1	0
Nil	1	10	1	0	0	0

Figure 6.4 Classifications of Respondents' Average Monthly Utility Bills

6.3.4 Classification of Transport Acquisition

Because most of the respondents live in the 'kongsi', they do not need to commute. Once again, this setup gives the respondents the opportunity to remit most of their wages. The respondents' modes of transportation are depicted in Figure 6.5

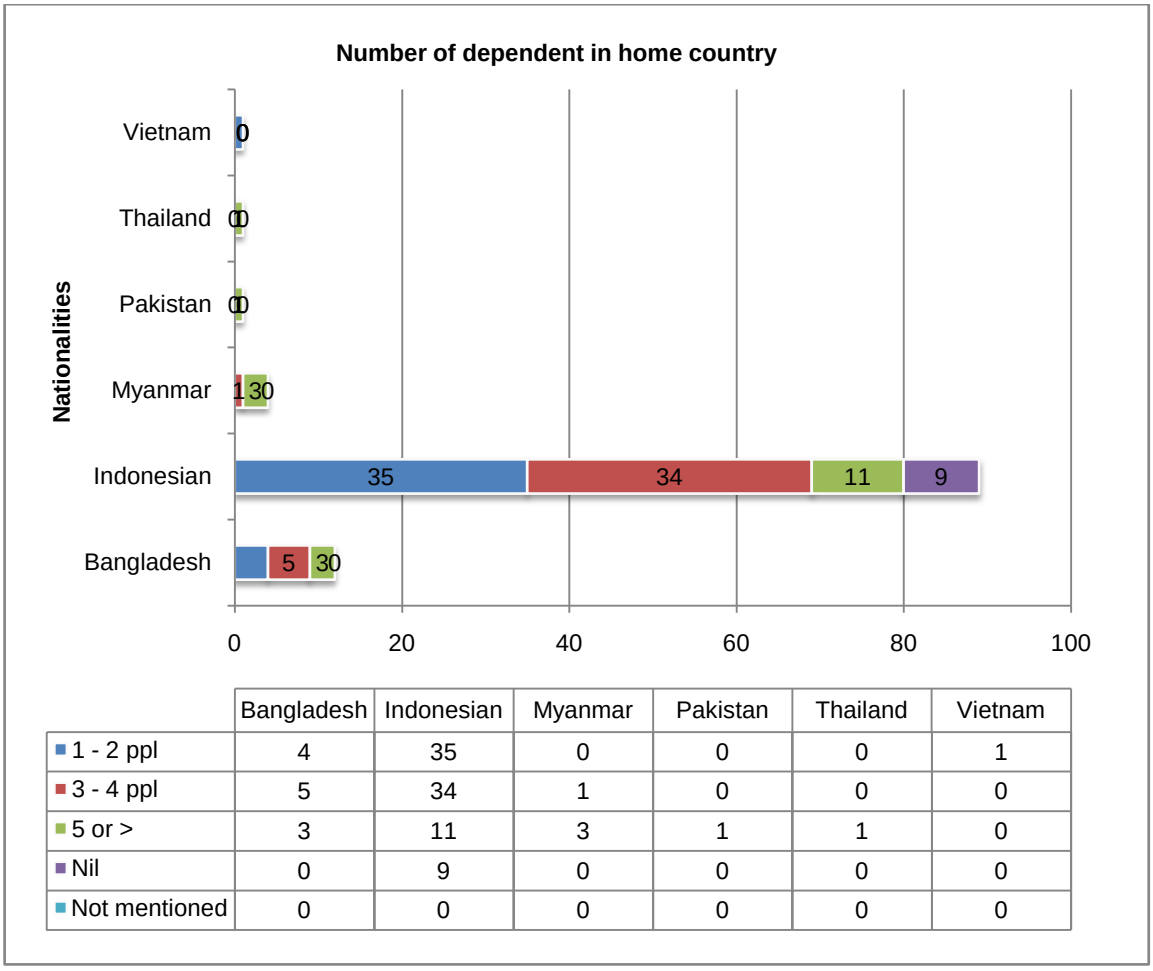


	Bangladesh	Indonesian	Myanmar	Pakistan	Thailand	Vietnam
Bicycle	0	15	0	0	0	0
Motorcycle	0	6	1	0	1	0
Car	0	3	0	0	0	0
Van	0	0	0	0	0	0
Lorry	0	0	0	0	0	0
Others	0	0	0	0	0	0
No transportation	12	65	3	1	0	1
Not mentioned	0	0	0	0	0	0

Figure 6.5 Respondents' Transportation Ownership by Nationality

6.3.5 Classification of Number of Dependent in Home Country

To justify the remittance made by the respondents, an analysis of the number of dependents they have in their home country will reflect the percentage of income remitted. Figure 6.6 depicts the number of dependents the respondents have in their home countries.



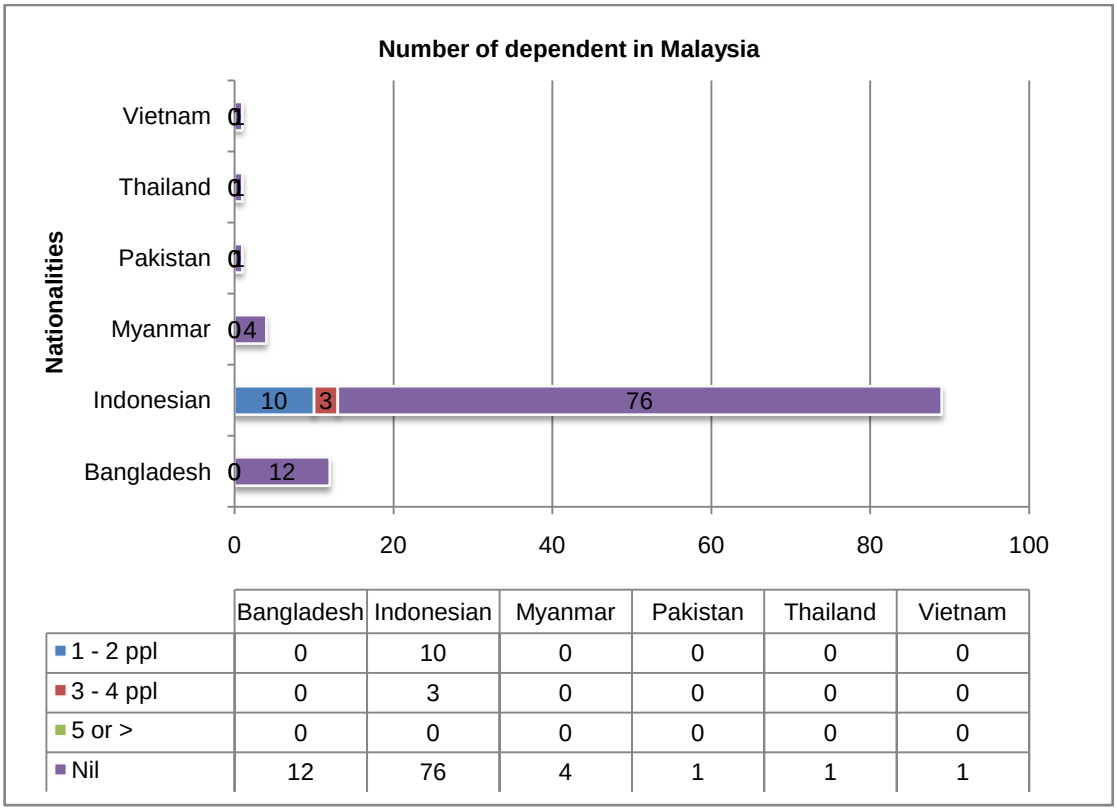
	Bangladesh	Indonesian	Myanmar	Pakistan	Thailand	Vietnam
1 - 2 ppl	4	35	0	0	0	1
3 - 4 ppl	5	34	1	0	0	0
5 or >	3	11	3	1	1	0
Nil	0	9	0	0	0	0
Not mentioned	0	0	0	0	0	0

Figure 6.6 Number of dependents by nationality

The number of dependents includes the respondents' extended family because their 'social contract' requires the respondents to support the entire family. The respondents feel bound to this contract because many of them were supported by the family's savings to travel to Malaysia. The literature on econometric and remittance shows that the higher the liabilities held by the immigrant workers in their home country, the greater the remittance will be and the less will be spent in Malaysia. This scenario indicates the importance of controlling the immigrant's remittance to help sustain the host country's economic development, especially in the construction industry.

6.3.6 *Classification of Number of Dependent in Host Country*

The same theory applied to the number and ages of the immigrant's dependents in the home country is applied to the number of dependents in Malaysia and immigrant workers' spending and remittance patterns. Figure 6.7 shows the number and ages of immigrants' dependents in Malaysia. The survey showed that most of the respondents do not have any dependents in Malaysia. This finding could be attributed to the several conditions outlined by the MoHR among the immigrant construction workers.



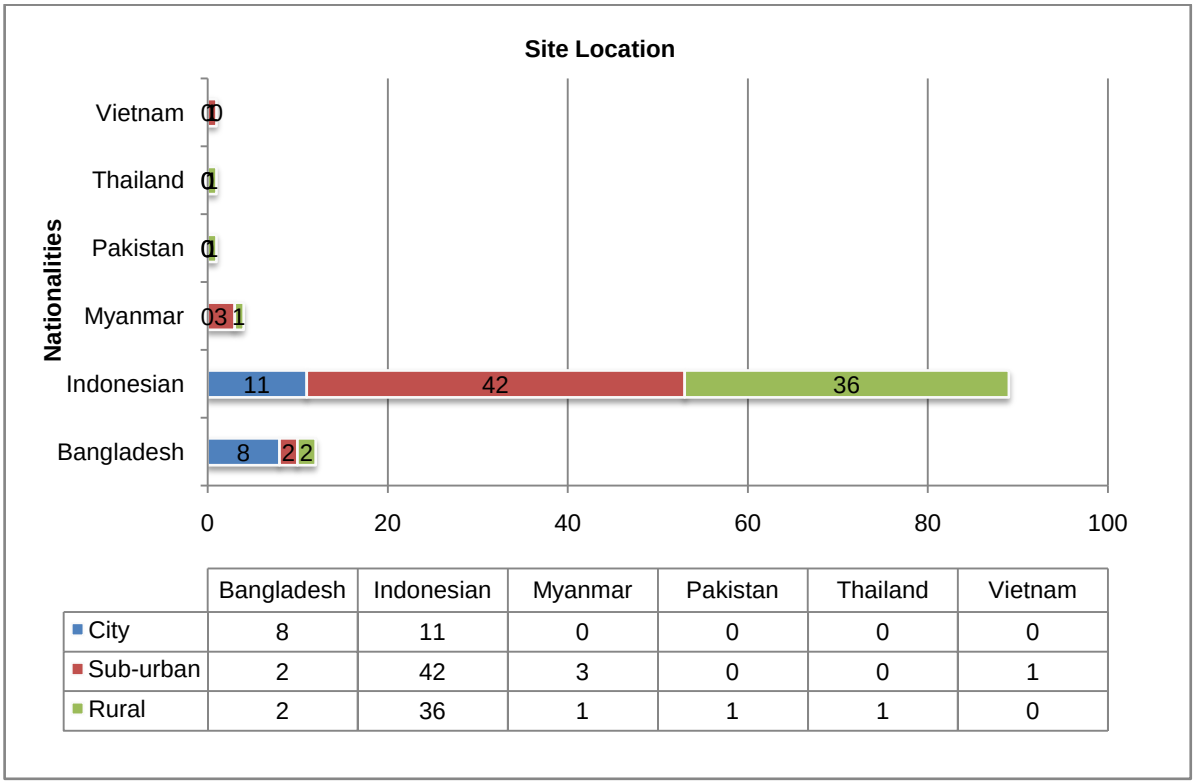
	Bangladesh	Indonesian	Myanmar	Pakistan	Thailand	Vietnam
1 - 2 ppl	0	10	0	0	0	0
3 - 4 ppl	0	3	0	0	0	0
5 or >	0	0	0	0	0	0
Nil	12	76	4	1	1	1

Figure 6.7 Number of Dependents in Host Country by Nationality

6.3.7 *Classification of Job Placement*

The literature reports that job placement or demographics would affect the immigrant's remittance percentage. For instance, the site location of a construction project might be remote, which would affect the workers' spending habits. Therefore, logically and theoretically, immigrants who work in rural areas tend to spend less, as there are few places to shop.

Figure 6.8 depicts the current location of the respondents' construction project.

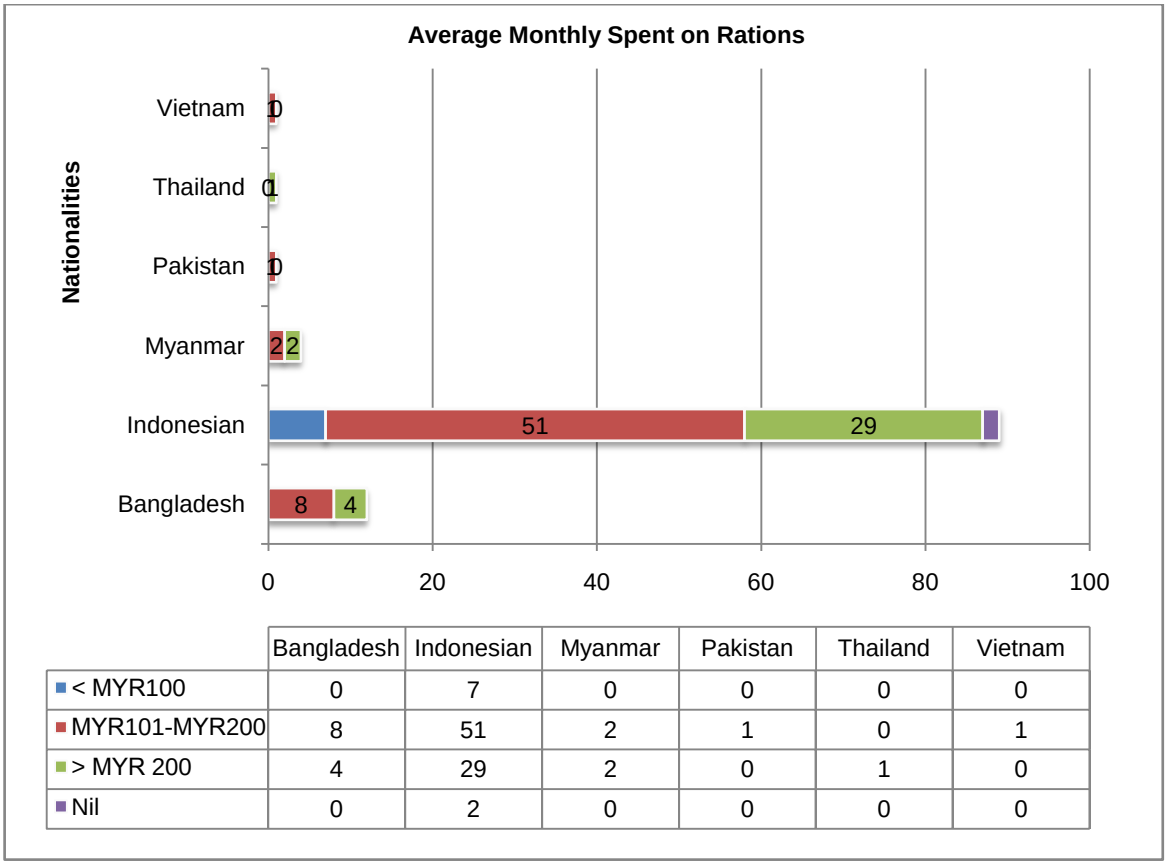


	Bangladesh	Indonesian	Myanmar	Pakistan	Thailand	Vietnam
City	8	11	0	0	0	0
Sub-urban	2	42	3	0	0	1
Rural	2	36	1	1	1	0

Figure 6.8 Classification of Respondents' Job Location

6.3.8 Classification of Average Monthly Spent on Rations

The amount of rations spent monthly will also directly impact the percentage of remittance. Figure 6.9 shows the average monthly amount spent by the respondents. From the questionnaires, the average respondent spends over MYR200 monthly. This amount is quite low relative to Malaysia's average monthly rations. However, the small amount spent by the respondents could be due to their work location. Hence, this figure reflects the high opportunities for respondents to remit due to the nature and location of their work, which does not allow them to spend on normal basic necessities, as compared to those working in other sectors such as manufacturing and services.

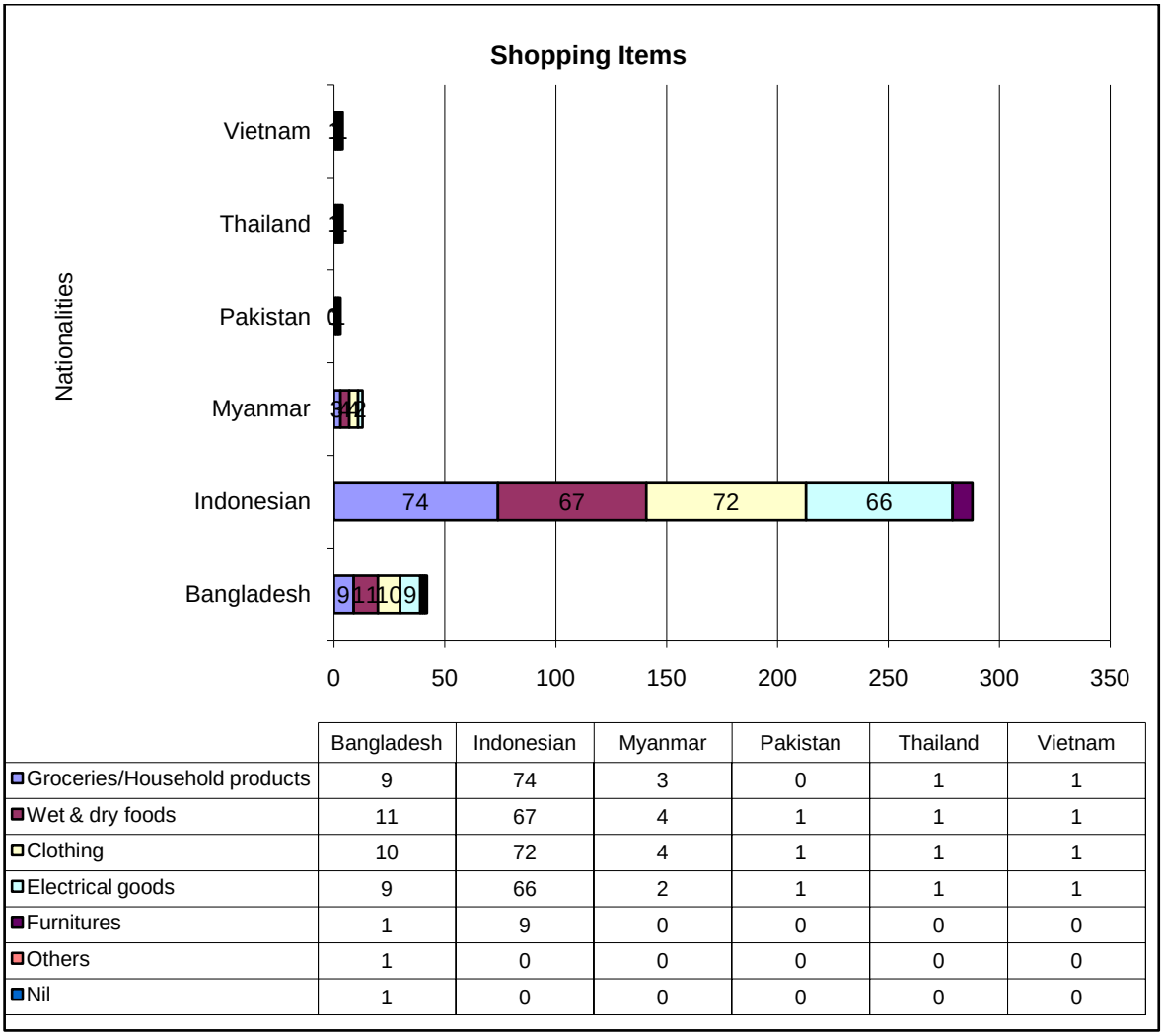


	Bangladesh	Indonesian	Myanmar	Pakistan	Thailand	Vietnam
< MYR100	0	7	0	0	0	0
MYR101-MYR200	8	51	2	1	0	1
> MYR 200	4	29	2	0	1	0
Nil	0	2	0	0	0	0

Figure 6.9 Average Monthly Spending on Rations by Nationality

6.3.9 Classification of Shopping Items

The items purchased reflect the respondent's remittance percentage; expensive and non-perishable items cost more, reducing the tendency to remit. Figure 6.10 shows the items purchased by the respondents within a month. Most of the items shops are low-value, such as groceries and wet and dry foods. This reflects with the Maslow's hierarchal needs that human needs to have basic necessities to live their life. The average amount spent by the respondents for their monthly shopping items was no more than MYR500 monthly. This finding shows that the immigrant does not help the local economy grow by buying expensive items.



	Bangladesh	Indonesian	Myanmar	Pakistan	Thailand	Vietnam
Groceries/Household products	9	74	3	0	1	1
Wet & dry foods	11	67	4	1	1	1
Clothing	10	72	4	1	1	1
Electrical goods	9	66	2	1	1	1
Furnitures	1	9	0	0	0	0
Others	1	0	0	0	0	0
Nil	1	0	0	0	0	0

Figure 6.10 Shopping Items by Nationality

6.3.10 Classification of Saving Account Ownership

The immigrant workers' saving patterns will reflect the workers' abilities to stimulate the economy by putting their savings in a proper channel, namely, the banks. Figure 6.11 shows the respondents' savings account ownership, indicating that most of the respondents do have a savings account. However, most of the respondents do not have a local banking account, which does not help channel back the economic cycle leakage back into the economy. Therefore, immigrant construction workers should be assisted in opening a local banking account.

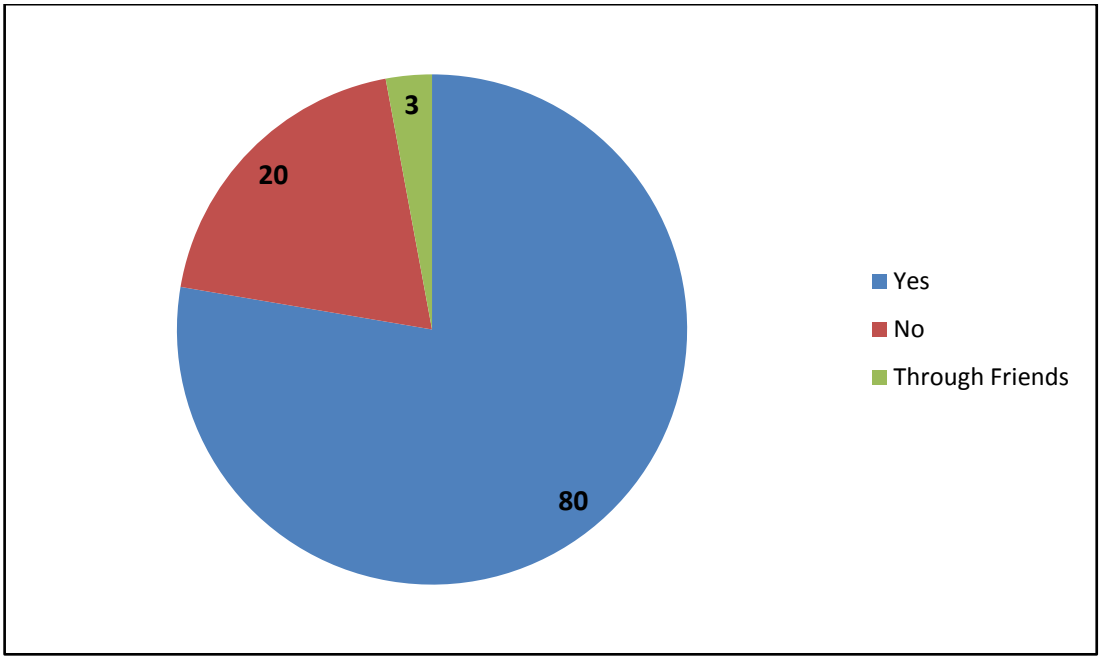


Figure 6.11 Savings Account Ownership

Finally, studying the channel of remittance made by the immigrants will provide insight into how the remittance is made, namely, whether there are any fees based on either a certain percentage or the currency exchange rate incurred during the remittance process.

Figure 6.12 shows that most of the respondents send their income via bank and Western Union. This finding reflects that most of the respondents have the privilege to send their wages to their home country and also contributes to the host country economy from the small charges made by the remittance service company.

6.3.11 Classification of Mode of Remittance by Nationality

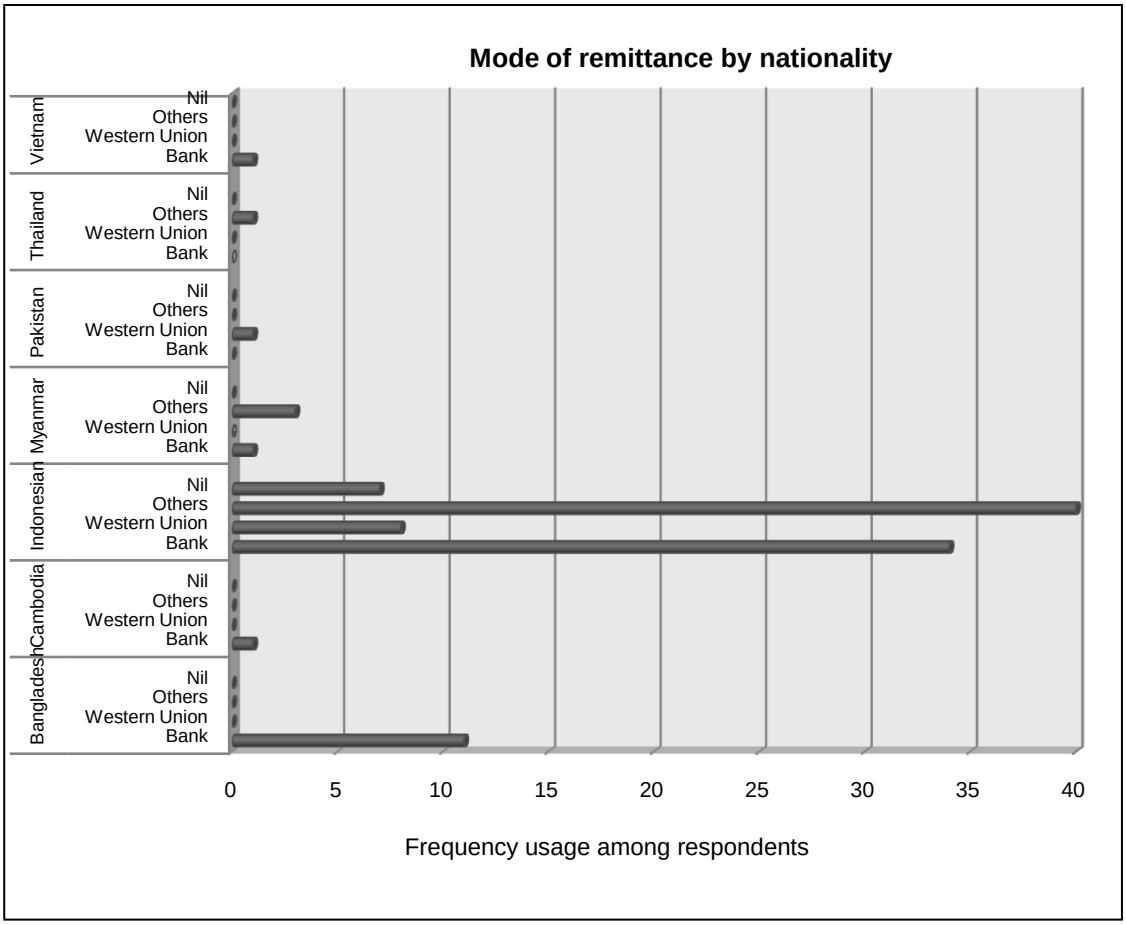


Figure 6.12 Modes of Remittance by Nationality

6.4 Conclusions from Economic Analysis

This study shows that the respondents are highly motivated to remit their wages to their home country despite the low income they receive. Although their earnings are low, they managed to survive in the host country due to several factors. One of the most apparent factors is that the respondents have very few financial liabilities in the host countries. In addition, the respondents mostly live in the ‘kongsi’, where all of the basic utilities are already paid for. Their on-site housing eliminates any commuting costs.

Thus, the central issue to manage the economic cycle leakage can be addressed by encouraging immigrant construction workers to spend locally and to open a local banking account to balance the economic cycle leakage. In particular, directly taxing the immigrant construction workers would be ineffective because of their low incomes. Therefore, special economic measures should be exercised towards these workers.

6.5 Perceptions on the Best Economic Measures for Managing Economic Cycle Leakage

This section explains the findings from the interviews conducted among both the immigrant construction workers and the authorities in charge of managing them. The respondents were interviewed on the most preferred and practical economic measures to manage the economic leakage resulting from the high monthly remittance made by the immigrant construction workers. This was made to provide a general overview of respondents' understanding and perception towards economic, managerial and legislative measures.

Due to huge amount of data derived from the questionnaire surveys and transcribed interviews, some form of coding and categorisation were done to ensure that re-order and re-arrangement so that clearer understanding of certain issues (Blismas, 2001; Miles and Huberman, 1994).

The immigrant construction workers were asked several questions pertaining to economic and legislation measures. On economic measures, the interview questions were grouped into two categories namely the provision to control spending and provision to promote spending. On provision to control spending, their opinions on measures such as tax, levy, EPF contribution and CIDB Green Card were asked. On the other hand, provisions to promote local spending includes minimum monthly wages, local bank ownership, provision of transportation and provision of ration suppliers on site were asked.

In terms of legislation, once again the respondents were asked on two categories namely the control over purchasing power and provision to promote local spending. On provision to control their purchasing power, the respondents were asked their opinions on having to sit competency test before their entry to host country and competency test during their employment in the host country. Similarly, they were also asked opinions on provisions to promote spending on basic training and minimum standard for their accommodation.

The respondents' responses of the economic and legislation measures are depicted in Table 6.6 as follows.

Table 6.6 Tabulation of responses on economic and legislation measures from immigrant construction workers' perspectives

Respondents	**Economic Measures**									**Legislation Requirements**			
	Control over purchasing power					*Means to promote local spending*				*Control over purchasing power*		*Means to promote local spending*	
	Tax	Levy	EPF contribution		CIDB Green Card	Minimum monthly wages	Local bank ownership	Transportation provision	Provision of ration suppliers on site	Competency Test Before entry	Competency Test After entry	Basic trainings	Minimum standard accommodation
			Employer	Employees									
Bangladesh	*	*	*	+	+	+	+	*	º	*	º	-	+
Indonesian	*	*	*	+	+	+	+	º	º	*	º	-	50-50
Myanmar	*	*	*	º	+	+	+	º	º	*	º	-	50-50
Pakistan	*	*	*	+	+	+	+	*	º	*	º	-	+
Thailand	*	*	*	º	+	+	+	*	º	*	º	-	+
Vietnam	*	*	*	*	+	+	+	*	º	*	º	-	+

Note: ** Rejected +Accepted ºAccepted with condition - Not related*

It can be seen that majority of the respondents rejects the idea of imposing tax to them. If they were given the chance, they also refused to pay the levy as imposed by the Malaysian government. However, when asked on potential contribution to EPF contribution, respondents gave mixed answers. For instance, most of the immigrant construction workers from Bangladesh, Indonesia and Pakistan accept the idea of EPF contribution as

they feels that it will benefit them in the long run during their employment in Malaysia. Respondents from Myanmar and Thailand accept the idea with a condition that they can claim their contribution as if the scheme is similar to having a bank account system. Respondent from Vietnam rejects the idea. Details responses on economic measures for each provision are depicted in Table 6.6.

As mentioned in preceding sections, job demographic will give some economic effect to the household disposable income. Hence, this particular question was asked among the immigrant construction workers whether working in construction sector limits their ability to spend. The questions states: “Do you feel that by working in construction line limits you to spend in Malaysia?”. Some of the transcribed answers received are “*tak keberatan, tak keberatan*”. This means that the respondents do not feel that the working condition and lifestyle in construction sector limits their purchasing power.

Another additional response from the respondent is “*kekerapan, selagi kita mahu, boleh keluar belanja*”. This means that the nature of work within the construction industry allow them to have a break between the working hours to shop their basic necessities such as purchasing cigarettes. Table 6.7 presented a tabulation of the respondents’ responses, showing that the immigrant construction workers reject any plan to impose economic measures. This finding is understandable as their motivation to work in Malaysia is to remit their wages to help their dependents.

Similar to the immigrant construction workers, authorities in charged were also asked their opinions on similar measures. Interestingly, all of the authorities agreed to the idea of imposing EPF contributions among the immigrant construction workers with a condition that the immigrant construction workers are registered with a single monitoring authority as a response to their transient working nature. this calls for a suggestion that a system should be created to ensure that the immigrant construction workers, albeit of their transient

working nature are documented and managed under a single authority that oversee their movement from one job to another. Details of the authorities responses are depicted in Table 6.7 that follows;

Table 6.7 Tabulation of responses on economic and legislation measures from authorities perspectives

Respondents	Proposed Economic Measures									Proposed Legislation Requirements			
	Control over purchasing power					*Means to promote local spending*				*Control over purchasing power*		*Means to promote local spending*	
	Tax	Levy	EPF contribution		CIDB Green Card	Minimum monthly wages	Local bank ownership	Transportation provision	Provision of ration suppliers on site	Competency Test Before entry	Competency Test After entry	Basic trainings	Minimum standard accommodation
			Employer	Employees									
Immigration Department	*	+	º	º	+	*	+	-	-	+	+	º	+
Ministry of Home Affair	*	+	º	º	-	º	+	-	-	+	+	º	+
Construction Industry Development Board (CIDB)	*	+	º	º	º	º	+	-	-	+	+	º	50-50
Construction Labour Exchange	*	+	º	º	+	+	+	-	-	+	+	º	+
AkademiBinaan Negara (ABM)	-	-	º	º	-	-	-	-	-	+	+	º	-
Bank	-	-	-	-	-	-	+	-	-	-	-	-	-
Contractor	*	+	*	*	+	*	º	*	º	+	º	º	*

Note: ** Rejected +Accepted ºAccepted with condition - Not related*

The authorities' responses reveal significant scepticism regarding some of the proposed measures. However, after some explanation on the objective of the proposed measures, good responses and recommendations for improvement were received from both the immigrant construction workers and the authorities.

For instance, upon asking opinion on the proposed measures to control immigrant construction workers by introducing the EPF contribution among them, responses received are as follows:

"*...yes, for foreign professional/expatriates but not for ordinary uneducated and illiterate construction labours who are earning less than MYR1,000.00 a month. The reason because I think these workers should not be exploited. In the construction industry, the workers are mobile from one project to another. Their education background are quite limited and I don't know whether they understand the principle of EPF. Most of these people, I believe, will end up leaving the country without going through the hustle to get their EPF fund*". Similar answered were also received from the representative from EPF department.

Another proposed measures asked were the possibilities to implement minimum monthly wages among the immigrant construction workers. Some of the answers received are as follow "*there was a request by certain quarters in the construction industry to have a minimum wages for construction workers across the board (local & foreign). However, until now there was no decision by the government. Personally, I feel the wages should commensurate with the skills and certification acquired by the workers as in Australia and UK*".

On the contrarily, the respondent from Immigration Department responded as follow "*I don't think so as the government want them (the immigrant construction workers) to be in informal sector*". This showed that there are possibilities of implementing the minimal monthly wages among the immigrant construction workers, but it should be drafted with some considerations.

The accepted proposed measures will be used in the development of the framework, while the rejected measures are adjusted and adopted into the framework by introducing the maturity framework characteristics to allow some time for introduction, adjustment and acceptance of the proposed measures to the respondents.

6.6 Immigrant Construction Workers' Behaviour Towards Economic, Management and Legislation Measures

The findings in the preceding sections seem to suggest that the immigrant construction workers are willing to give up their own personal consumption needs and comfort in host country as long as they could remit as much of their monthly wages to their home country. Even though the immigrant construction workers desire to have a better lifestyle, their liabilities however restrain them from having a decent lifestyle in host country.

Not all of the responses from the interviews conducted could be transcribed since most of the interviews were conducted in either Bahasa Malaysia or Bahasa Indonesia. However, most of findings from the interviews were transcribed in order to analyse the pattern. A sample of transcribed interview with immigrant construction workers is shown in **Appendix 6**. The following Table 6.8 shows the proposed measures that have been asked among the respondents.

Table 6.8 Tabulation of the Proposed Measures to Manage the Economic Cycle Leakage

Proposed Economic Measures	*Control over purchasing power*	i) Tax, ii) Levy, iii) EPF contribution, iv) CIDB Green Card
	Means to promote local spending	i) Minimum monthly wages, ii) Local bank ownership, iii) Transportation provision, iv) Provision of ration suppliers on site
Proposed Legislation requirements	*Control over purchasing power*	i) Competency Test Before entry, ii) Competency Test After entry
	Means to promote local spending	i) Basic training, ii) Minimum standard accommodation

6.7 Identified Issues and Challenges Experienced by the Organisations Responsible for Managing Immigrant Construction Workers Towards Framework Development

Findings from both interviews with the immigrant construction workers and the authorities in charge in managing the immigrant construction workers can be categorised into several categories, as depicted in Table 6.9.

Table 6.9 Categorisation of collected data

Code	Category	Sub-Code	Sub-category	Sub-Code	Rationale
F1	**Immigrant construction workers**	F1.1	Nature and character of immigrant construction workers	F1.1.1	Aims and objectives of immigrant construction workers in host country
		F1.2	Economics of immigrant construction workers	F1.2.1	Disposable income of immigrant construction workers during their employment in host country
				F1.2.2	Remittance patterns among immigrant construction workers
F2	**Construction industry governing bodies**	F2.1	Characteristic of construction industry	F2.1.1	Construction demand and supply and its important function to stimulate economy
		F2.2	Management structure	F2.2.1	Construction project management structure of organisation, transient nature of construction project
F3	**Immigrant construction workers' governing bodies**	F3.1	Management structure	F3.1.1	Responsible authorities managing immigrant construction workers
		F3.2	Legislation	F3.2.1	Rules and Regulations imposed towards immigrant construction workers

Note: F - Findings

It is important to note that the issues related to arrangements of organisations involved in management of immigrant construction workers, the management of resources and legislation are excluded as they involve decision making from the top management of the organisations involved.

Hence, based from the findings of the detailed questionnaire interviews and interviews conducted from the data collections, the in-scope and out-of-scope categories are shown in Table 6.10. The in-scope proposals will be used directly in the framework development, while the inclusion of the out-of-scope proposals will be subject to consideration.

Table 6.10 Categorisation of findings into in-scope and partially in-scope categories

Issues	Rationale of Study	In-Scope / Out-Of-Scope	Action
Immigrant construction workers			
Aims and motivation	Understandings the immigrant construction workers' aims and motivation to work will lead to defining their push and pull factors as well as their limitations	In-scope	To be included in proposed framework
Disposable income	This could lead to understandings the respondents purchasing power and liabilities in both host and home countries. it also lead to understandings their habits, frequently purchased items and any constraints incurred that limits their expenditure	In-Scope Addressing the disposal income is within the scope of the research to propose a realistic economic measures to manage economic leakage	To be included in proposed framework
High remittances made monthly	Understandings their remittance pattern could lead to justifying their responsibilities at home country as well as benchmarking the limitation to manage the economic leakage.	In-Scope	To be included in proposed framework

Issues	Rationale of Study	In-Scope / Out-Of-Scope	Action
Construction industry governing bodies			
Characteristic of construction industry - Low image of construction sites due to on-site accommodation	Understandings the nature of the industry in shaping its current system of organisation between sectors and governing bodies	Partially In-Scope	To be partially considered in framework development
Construction project management	Understandings the nature of the development of construction projects, its tools and human resources needed in order to know its limit and capacity	Partially In-Scope	To be partially considered in framework development
Management structure - Immigrant construction workers over-crowded	Understandings the nature of the hierarchy of peoples and organisation in construction industry	Partially In-Scope	To be partially considered in framework development
Construction demand and supply	Understandings the fluctuations of the demand and supply in the sector helps to identify the limitations of the industry to acts to changes made to economic policy	Partially In-Scope	To be partially considered in framework development
Immigrant construction workers governing bodies			
Management structure - Too many organisations in-charged for managing immigrant construction workers	Understandings on the different overall system management in charge to study the limitation and boundaries of each governing bodies	Partially In-Scope	To be partially considered in framework development to regulate the economic measures
Responsible authorities - Different organisation in charge at different occupational stages	Understandings on the different government bodies in charge to study any redundancies in responsibilities	Partially In-Scope	To be partially considered in framework development to regulate the economic measures
Legislation	Understandings the current rules and regulations imposed to the immigrant construction workers to study the reasoning behind each regulations made and to recommend any changes suitable to manage the economic leakage	Partially In-Scope	To be partially considered in framework development to regulate the economic measures

The findings have helped identify three aspects of the management of the economic cycle leakage in the cash flow within the Peninsular Construction Industry. These aspects, namely the economic, legislative and managerial aspects, are key to balancing the leakage in the form of the remittance made by the immigrant construction workers.

6.7.1 Managerial Issues

The management of immigrant constructions workers begins at the initiation of the entry processes and continues through the occupational stage and departure. Too many organisations are in charge of managing immigrant construction workers in the construction industry. Currently, different organisations are in charge of different occupational stages, and the resulting redundant responsibilities make addressing these issues complex.

6.7.2 Economic Issues

The high remittances made monthly by immigrant construction workers affect the economic cycle of the construction industry which supposedly act as an economic multiplier to the nation's economy. The immigrant construction workers remit most of their wages to their home country, based on their personal, educational and spending pattern background.

The findings revealed that the immigrant construction workers live poorly in temporary on-site accommodation, thus limiting them to a lifestyle similar to that of the locals. This arrangement leads to minimal local spending and encourages high monthly remittance. Additionally, the aim of migration among the immigrant construction workers is usually to send their family as much money as possible. Some photographs depicting the conditions of the on-site accommodations can be seen in **Appendix 4**. Furthermore, the immigrants' aim to save as much as possible and spend as little as possible exposes the Malaysian construction industry to both the immigrant workers' dependence and economic leakage via remittance. This finding was based purely on observations and a snapshot of the outcome of interviews conducted with the immigrant workers.

6.7.3 Legislation Issue

The overabundance of nationality-specific regulations makes the development of economic measures for immigrant construction workers difficult. Furthermore, due to the workers' low income, the Malaysian government, especially the authorities directly or indirectly in charge of the immigrant construction workers, cannot legally impose any tax-based economic measures on these workers. Therefore, the best option for slowing remittance is to promote local spending by improving their wellbeing.

Managerial and legislative aspects could be combined to improve the image of the construction industry by imposing certain standards for the workers' on-site temporary accommodations to ensure a healthy lifestyle and security. This change can be achieved by including a special item in the preliminary section in the Contract Documents so that the construction firms can price and prepare the site accordingly.

Additional measures could be taken to create a skill-based minimum and structured wage scale for the immigrant construction workers. Again, this measure should stimulate and increase local spending. Promoting local bank accounts among the immigrant construction workers could also balance the leakage and incentives them to save their money.

6.7.4 Management of Construction Projects Issues

Immigrant construction workers are overcrowding the Malaysian construction industry. Both legal and illegal workers are currently active in the construction industry. The industry also suffers from a low public image due to the low-maintenance temporary on-site accommodations. There is currently no minimum standard for temporary accommodation for construction workers during the construction period stated in the Contract Documents.

This scenario is tightly related to the transient nature of the construction project and the lifestyle of the immigrant workers in Malaysia who reside in 'kongsi' housing near the construction sites. The limited information given to the immigrant construction workers regarding how to open a bank account and their rights as stipulated in Malaysian Labour Act 1955 limit them to a very simple lifestyle in Malaysia.

6.8 Concluding Remarks

This chapter has provided an understanding on the characteristics of the respondents, both the immigrant construction workers and the authorities in charge in managing them. A good understanding of the respondents' background could provide a basis for the development of a conceptual framework to manage the economic cycle leakage within Peninsular Malaysia's construction industry. .

Overall, the respondents' characteristics reflect a representation of the immigrant construction workers in terms of gender, age, educational background, and economic background. Most of the respondents represented in the sample were people on the younger side of being middle-aged poorly educated low- income earners. However, any move to impose economic, legislative and managerial measures to manage the economic leakage should be implemented in such that any resentment from the immigrant construction workers, construction clients (who will pay more) and the regulating agencies is avoided.

Hence, any measures to be exercised towards these groups should consider their background to ensure efficient implementation. It is proposed that a developmental approach is adopted to arrive at a final mature resolution.

Chapter 7 Conceptual Framework Development

7.1 Introduction

This chapter presents a discussion of the development of a conceptual framework to promote the integration of economic tools with improvised management and legislation for immigrant construction workers in Peninsular Malaysia. The conceptual framework was based on a detailed literature review and findings from data analysis. The conceptual model consists of a summary of the tasks people can perform and the concepts that are needed to understand how to relate to a product (Fathi, 2009). However, according to Holiday (2002), a conceptual framework is a way for researchers to position themselves relative to the research.

This chapter begins by highlighting the problems that need to be addressed and the key features of the proposed conceptual framework. The chapter concludes with a discussion of the role of economic measures in managing economic problems and the role of management and legislation in shaping and regulating the framework to ensure the efficiency of framework implementation. This chapter also describes the development of an integrated process protocol and maturity framework that was based on the conceptual framework for the integration of economic tools, improvised immigrant construction management and legislation.

The chapter starts by highlighting the research findings from the literature review and data collections that were used as a basis for the conceptual framework. This is followed by an explanation of the process of developing the conceptual framework that form the basis for developing based the research framework.

The combination of protocol mapping and maturity frameworks was justified by highlighting the advantage of each framework and by describing why it is suitable for addressing the research problem.

7.2 Findings from Literature Review and Data Collection

Findings from the literature review and data analysis are central in the development of the research framework. The following are the key findings from both the literature review and data analysis that were conducted.

7.2.1 The key findings from the literature

- Literature on economic modelling in Chapter 2 indicated that the construction industry can be used to manipulate and stimulate economic growth during an economic downturn.
- However, the economic equilibrium can be disrupted by leakages in the form of savings and investments. If kept in a proper channel, savings will not be considered to be a form of economic cash flow cycle leakage because they enable bankers to offer bank loans to firms to expand or establish their businesses.
- In Chapter 3, the literature confirms that the construction industry, because of its special character and high dependency on labour, is an important sector in the economy to stimulate economic growth via government spending.
- As indicated in Chapter 3, most of the construction firms opt for minimal monthly liabilities. This is to ensure a sufficient financial flow for them to complete their on-going projects. However, due to this constraint, the construction firms opted for the cheapest solution to offer low wages to the construction workers. As a consequence, local labour refuses to join the

workforce and means that the immigrant workers have to fulfil the labour supply.

- Although it was found in Chapters 3 and 4 that there are requirements for a minimum standard of accommodation for immigrant workers, it was not fully regularised. Many of the construction firms opt for low-cost on-site temporary accommodation known as ‘kongsi’. This is due to the fact that the provision of decent accommodation for immigrant construction workers was not been included in the projects’ contract documents.
- The CIDB of the Malaysian construction industry authority has introduced the Green Card with all construction workers required to acquire the card before they can work and enter any construction site. This is to inculcate a safety culture among the workers as well as to reduce the number of accidents on site.
- The construction workers are paid on a daily basis. This is related to the transient nature of construction projects. Hence, the immigrant construction workers do not have minimum monthly wages.
- To improve the quality of the construction products CIDB has made it mandatory for immigrants who wish to extend their permits to undergo competency tests conducted by their subsidiary, ABM.
- With regard to the management of immigrant workers, the Malaysian government concentrates only on the related security measures. This offers immigrant workers, especially in the construction industry, the opportunity to remit as much of their wages as they desire.
- The main contribution brought to the Malaysian economy by the immigrant construction workers is the supply of huge labour to the Malaysian construction

industry. Without them, millions of ringgit (MYR) worth of construction projects would not be completed, which has contributed to the nation's development.

7.2.2 The key findings from the data analysis

- Findings from pilot study interview surveys and interviews with various respondents in charge in managing immigrant construction workers showed the same pattern of immigrant workers' remittances. It has been noted that the high tendency to remit is attributable to the nature of the construction industry and its heavy dependence on immigrant construction labour.
- The transient nature of the construction projects has contributed to the current lifestyle of the immigrant construction workers.
- Analysis of the immigrant construction workers' household disposable income showed that their expenditure in Malaysia is minimal. This is due to the fact that they do not receive income on a steady basis but are paid according to quantity and productivity on site. This leaves them feeling insecure about spending money locally, instead saving for their family in their country of origin.
- The immigrants also do not need to pay for their accommodation as the construction firms provide them with temporary on-site accommodation complete with water and electric supplies. However, the immigrant construction workers have to pay for their work permits through annual levy payments.
- When asked about their most preferable economic, management and legislation measures, the immigrant construction workers' reactions are mixed. Some of them agree with the suggested measures and some of them reject the suggested measures.

- The suggested measures were derived from Chapter 2 that extracts the suitable tools to manage the cash flow economic leakage within the Peninsular Malaysia's construction industry.
- Opinions from the authorities in charged in managing immigrant construction workers were also extracted to assists in the development of the framework. The approach was done to validate the framework through formative evaluation method.

In summary, there is a need to control cash flow economic leakages made by immigrant construction workers to sustain the function of the construction industry in the Malaysian economy. It is the concern of this research to address economic cycle leakage in the form of savings not kept in a proper channel, such as a bank.

It can be concluded that the construction industry could help the government to stimulate the economy through government spending on public buildings and infrastructure. This alliance is possible because of the unique characteristics of the construction industry to help stimulate the economy through a multiplier-accelerator model. However, this research does not only address to safeguard the Malaysian government but also seeks to improve the well being of immigrant construction workers during their employment in Malaysia. To address this problem, the government could impose several economic measures to manage leakage and regulate it through management and legislation channels.

7.3 Development of the Conceptual Framework

It is the aim of this research to manage cash flow economic leakage in the Malaysian construction industry using the preferred economic measures from both immigrant construction workers and the authorities in charge of managing immigrant construction workers in Malaysia. The results of the analysis also revealed that economic cycle leakage can be managed using economic tools, the effective management of immigrant construction workers and the transparent implementation of the rules and regulations imposed on them.

There are no direct economic measures imposed on immigrant construction workers because of their low incomes. Hence, certain economic measures should be put in place that not only address the issue but also help improve the working conditions and welfare of immigrant construction workers. Therefore, an integrated framework that reflects the specific context of economic measures, better management and the implementation of regulations is proposed.

The basic conceptual framework was based on the findings mentioned above from the literature and data collection findings as depicted in Figure 7.1.

Literature Reviews

CHAPTER 2

Review of economic tools to manage economy

- Different economic tools to manage economy; either through provision to promote and discourage spending
- The needs to understand household disposable income to manage economy at micro level.

CHAPTER 3

Review on Construction Industry, its characteristics and its function to stimulate economy

- The industry has been proven to be importance to stimulate the economy
- The special character of Construction Industry shaped the way the business was conducted
- the industry is very fragmented, thus creates challenge to improve
- Poor image and low pay led to heavily dependent on immigrant workers

CHAPTER 4

Review on characteristics of immigrant workers, the authorities in charge, the management and regulations imposed to immigrant construction workers in Peninsular Malaysia

- duplication of responsibilities among authorities
- no economic measures imposed to immigrant construction workers
- poor lifestyle and well-being of immigrant construction workers during their employment in Malaysia
- regulations imposed should tackle the issue and given some times to be introduced and regularized

Exploratory Study

- Conducted to study the most suitable research instruments for data collections. found out that interview is the best tools to ensure data validity explained in **Chapter 5**
- found out that immigrant construction workers do remit most of their wages to their country of origin

Initial Research Framework Developed

Findings & Supported Documents

CHAPTER 6

Investigation of integration of economic, management and legislation measures to manage cash flow economic leakage within the Peninsular Malaysia's Construction Industry

- Immigrant construction workers' income disposal showed high remittance made.
- This was shaped by their motivation to work in host country and poor management of their well-being during their employment
- The immigrant construction workers opinion on preferred economic, management and legislation measures showed a mixture of reactions. Some of the suggested measures were accepted with conditions and some were rejected. data was used to generate framework
- The authorities were also asked on the effective and preferable measures to be imposed to immigrant constructions workers and once again responses were beneficial.
- The responses were combined and polish through formative evaluation to develop the framework

Conceptual Framework Development

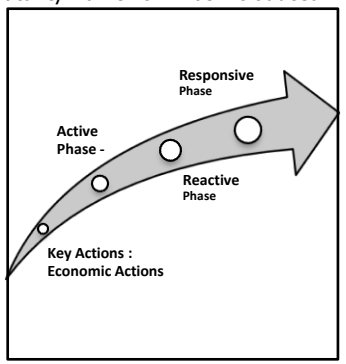
CHAPTER 7

Develop a framework for integrating economic, management and legislation measures

- Process protocol map and maturity framework was introduced:

Process Protocol Map Identifies key actions to address the problem namely;

1) Economic measures - integration of tools to promote and discourage spending
2) Management - justify areas for improvement
3) Legislation - regularise the measures to ensure efficiency of proposed measures



Develop Framework of the Integration of Economics, Management and Legislation

CHAPTER 8

Framework evaluation conducted through formative evaluation

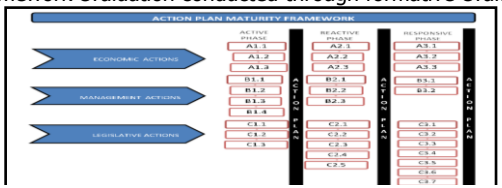


Figure 7.1 Overview process and linkages between research findings towards the development of research framework

7.4 The Process of Developing the Conceptual Framework

Based on the findings discussed in chapter 6, a conceptual framework to manage cash flow economic leakage in the Malaysian construction industry can then be formulated. A framework that combines economic tools to control and manipulate the economy with suggestions for improving the management of immigrant construction workers and construction projects is designed to encourage immigrant construction workers to spend locally as well as to improve their living conditions.

The conceptual framework was further defined with details on specific economic, management and legislation measures to help manage economic cycle leakage. The parties involved in the implementation of the framework were identified in terms of delegating the correct tools to the appropriate parties. The measures will be implemented in stages to allow the transition of the introduction, implementation and improvements in the proposed framework.

7.5 Features of the Conceptual Framework

The integrated economic, management and legislative conceptual framework can be used to manage economic cycle leakage within the construction industry in Peninsular Malaysia. The conceptual framework is to be developed as an economic guideline targeted at immigrant construction workers to manage economic cycle leakage in the Malaysian construction industry.

This conceptual framework is targeted for use by the Malaysian government authorities responsible for managing immigrant construction workers. The conceptual framework should address:

- practical and preferred economic tools to reduce the cash flows of immigrant construction workers and to manage the percentage of workers' income allocated to remittance to other countries as demonstrated in the findings of high level of remittance made in Chapter 6;
- practical and preferred economic tools to increase immigrant construction workers' spending in Malaysia to stimulate the local economy as suggested in Chapter 4 where successful regulations imposed to should be simple and accepted by the immigrant construction workers themselves;
- practical legislation on setting minimum requirements and guidelines as suggested in Chapter 4 that regulations will be successful with appropriate monitoring; and
- the provision of benefits to both immigrant construction workers and the Malaysian authorities responsible for managing them.

7.6 Potential Benefits of the Conceptual Framework

This conceptual framework provides a win-win situation for controlling economic cycle leakage caused by immigrant construction workers, especially regarding remittances, and promotes local spending among the respondents.

It provides an in-depth understanding of the lifestyle of immigrant construction workers' at construction sites and a basis for the best practical economic tools for these workers while maintaining economic benefits to the Malaysian construction industry.

7.7 Objective and Choice of the Process Protocol and Maturity Framework

From the proposed conceptual framework, a combination of a protocol action model and a maturity framework was developed. This combined framework was designed to allow the Malaysian government, particularly the agencies responsible for managing immigrant construction workers, to plan strategies and execute the proposed framework. Therefore, each governing body is allowed to adapt and receive feedback for improvements.

This is similar to the Taylorism theory of scientific management regarding the need to improve economic efficiency (Bain, Watson, Mulvey, Taylor and Gall, 2002; Peaucelle, 2000). Findings from interview surveys were used to identify the most appropriate measures to manage economic leakage in the form of remittances made by immigrant construction workers in the Malaysian construction industry. The aim of this framework is to provide unbiased economic measures for both the immigrant construction workers and the Malaysian government to manage economic leakage resulting from remittances.

Hence, the main scope of this research is to determine the most appropriate measures to be used to manage economic leakage. Additionally, any other issues involved specifically in managing immigrant construction workers by the organisations in charge were considered as within the scope of conditions that need to be improved to manage economic leakage in the Malaysian construction industry.

The following sections explain the types of available frameworks and models that can be adopted for the purpose of framework development. Rather than describing the economic models, which were discussed in Chapter 3, this chapter concentrates on the character of the process protocol model and the maturity framework. Each of the models and frameworks was further elaborated to explain their function, their content and the processes involved in developing them. Justifications for the selection of the appropriate framework are offered in section 8.6.

7.8 Introduction to the Process Protocol Framework

In explaining an approach to re-engineering the UK construction industry, Kagioglou et al. (1998) developed a process protocol to improve the performance of the construction industry by adopting appropriate manufacturing practices. According to Kagioglou et al. (1998), the concept of the process protocol was based on several components. Some of the components are as follows:

- there is a need for a model that is capable of representing the various concerns of all of the parties involved in the construction process or that is able to provide a complete overview;
- there is no other way for all of the conditions to be met other than through a basic and adjustable set of principles that allow a consistent application of principles in a repeatable form;
- there is a need to articulate a clear set of process-related principles as a new process standard that can be controlled and assessed across the breadth and depth of the industry. The process should focus on adjusting and systematising the strategic management of potentially common management processes in

construction and at the same time accommodating the practice of fragmented production; and

- there is a need for the ability to provide uniform deliverables and functions related to achieving, managing and reviewing the process.

From examples of the components of the process protocol, it can be observed that the concept can be adapted to develop a model or framework to provide guidelines for uniform standards to integrate the management of several parties to achieve, manage and review the current process. In other words, this approach helps to provide a comprehensive management system by reducing the fragmented and redundant processes performed by several parties with similar aims and objectives.

7.8.1 Development of the Process Protocol Framework

To develop the process protocol, several key principles need to be established as a basis for improving the current management process. In a study conducted by Kagiogolu et al. (1998) seeking a way to re-engineer the UK construction industry, several principles were outlined to develop the process protocol. The key principles are the following:

- a comprehensive project view
- a consistent process
- progressive design fixity - continuous design improvements
- co-ordination - between all parties
- stakeholders

Each of the principles is further elaborated to justify the basis for the process protocol development. In addition, there are four stages embedded in the process protocol, namely, the pre-project stage, the pre-construction stage, the construction stage and

the post-construction/completion stage (Kagioglou et al., 1998). Each of the stages consists of different objectives to handle different agencies. For instance, at the pre-project stage, the process protocol aims to address the client's needs by considering the strategic business considerations of any potential project (Kagioglou et al., 1998).

7.8.2 Activity Zones within the Process Protocol Framework

The process protocol framework consists of not only the project development stages presented on the X-axis but also the participants involved categorised according to their primary responsibilities presented on the Y-axis of the process model. The model further groups the participants in any project into 'Activity Zones' that represent a multi-functional structured set of tasks and processes to guide and support the tasks to achieve a common objective (Kagioglou et al., 1998). The activity zones are presented in several labelled diagrams to not only ensure a clear presentation of the model but also to facilitate the understanding of the model. Details of each Activity Zone are provided in a user's manual. Figure 7.2 illustrates the process protocol map prepared by Kagioglou et al., (1998).

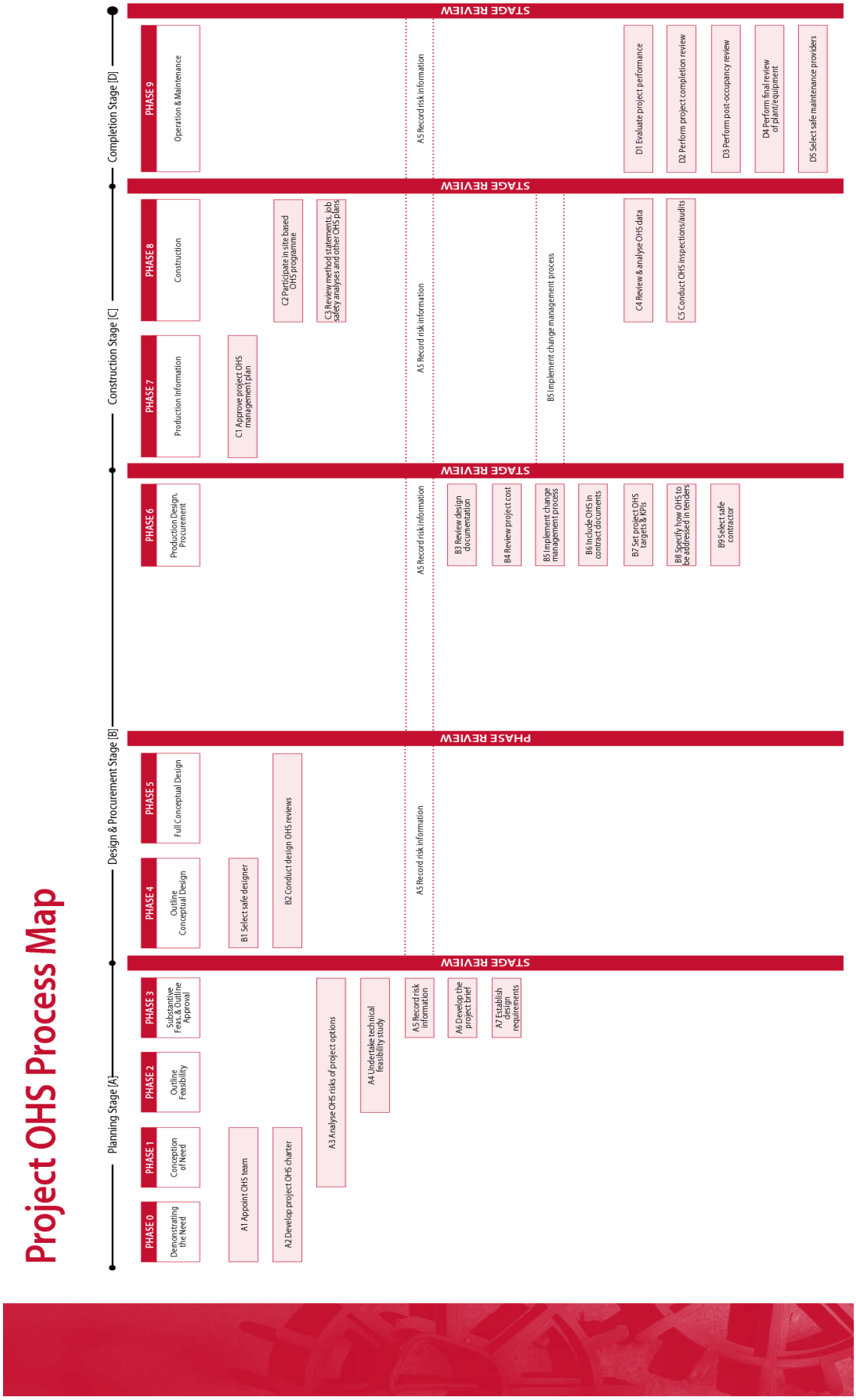


Figure 7.2 Adopted from A Generic Guide to the Design and Construction Process Protocol (Kagioglou et al., 1998 (www.processprotocol.com)

A review of the function, process and key elements of the process protocol model concludes that the model can be applied to achieve similar goals and objectives of the various parties. This review helps to reduce duplication and fragmentation of the process and also categorises different tasks into several activity zones according to the various stages of construction development.

Although some of the cited requirements were obtained from different areas of study, the concepts are applicable to this research. Hence, these requirements can be adopted for this research because several parties are involved in managing and regulating immigrant construction workers in Peninsular Malaysia.

7.9 Introduction to the Maturity Framework

Maturity models were developed by the Software Engineering Institute of Carnegie Mellon University in the late 1980s. Since the development of these models, many organisations from industries and disciplines other than software organisations have developed maturity frameworks (Mullaly, 2012).

Much of the literature has indicated the function of maturity model as a tool for organisational improvement (Mullaly, 2012). Similarly, a maturity framework provides an opportunity for any organisation to establish a system to measure the promotion of certain activities (Hurwitz and Associates, 2007). From the perspective of software development, the framework allows any software organisation to assess its own capabilities and identify the most critical areas for improvement (Humphrey, 1998). In addition, according to Mullaly (2012), organisations will employ maturity models for at least one of the following purposes:

- as an instrument to comprehend the organisation's current aptitudes;
- as a means of identifying practices that can be adopted successfully by the organisation;
- as a technique for comparing the organisation's performance with that of another organisation; and,
- as an outline for assessing a supplier's qualifications and performance.

Thus, it can be concluded that the maturity framework can be used by an organisation not only to evaluate its own performance but also to improve its performance by comparing its success to that of other organisations.

7.9.1 Elements of the Maturity Framework

Humphrey (1998) noted the need to examine the characteristics of the software development process from the perspective that the ideal approach should include statistical control through repetition of work until similar results are produced (Humphrey, 1998). Moreover, to produce a practical maturity model, there are three elements that need to be considered, namely, the people or organisation involved, the processes and the technology (Hurwitz and Associates, 2007).

Additionally, most maturity frameworks feature the following:

- several discrete stages or levels - each level will demonstrate a series of overall maturity of the organisation. This process usually comprises five levels: the ad-hoc; non-repeatable process; an exceedingly mature; robust; and, tightly structured capability.
- several areas of capability - a set of tasks are investigated that jointly identify how the overall discipline of project management should be performed.

- a tendency to be organisationally focused - because of the stages of a maturity framework, the models typically focus on the organisation or an organisational unit more than on individuals.
- suggestions that are prescriptive of the processes to be adopted by an organisation - the model does not specify how tasks should be accomplished but defines the activities that need to be performed at different levels (Mullaly, 2012).

7.9.2 Development of the Maturity Framework

The development of the maturity model is based on several elements, namely, the dimensions of the maturity stage, knowledge activity, management area and assessment (Paulzen et al., 2002). Similarly, according to Humphrey, the five maturity levels should consist of the initial level and the levels in which tasks are repeated, defined, managed and optimized (Humphrey, 1998). An additional level in a maturity framework is active, efficient, responsive and business driven (Hurwitz and Associates, 2007). The framework proposes and describes specific maturity levels that characterise different levels of efficiency and effectiveness (Hurwitz and Associates, 2007).

Similarly, the development of a software maturity framework should be treated as a process that can be controlled, measured and improved (Humphrey, 1998). In other words, to improve their software capabilities, an organisation should employ the following five steps:

a. recognise the existing status of their development process or processes;
b. develop a vision of the preferred procedure;

c. establish a prioritised list of required procedure enhancement of actions;

d. produce a plan to achieve actions; and

e. assign the resources to perform the plan.

An example of a maturity model is shown in Figure 7.3.

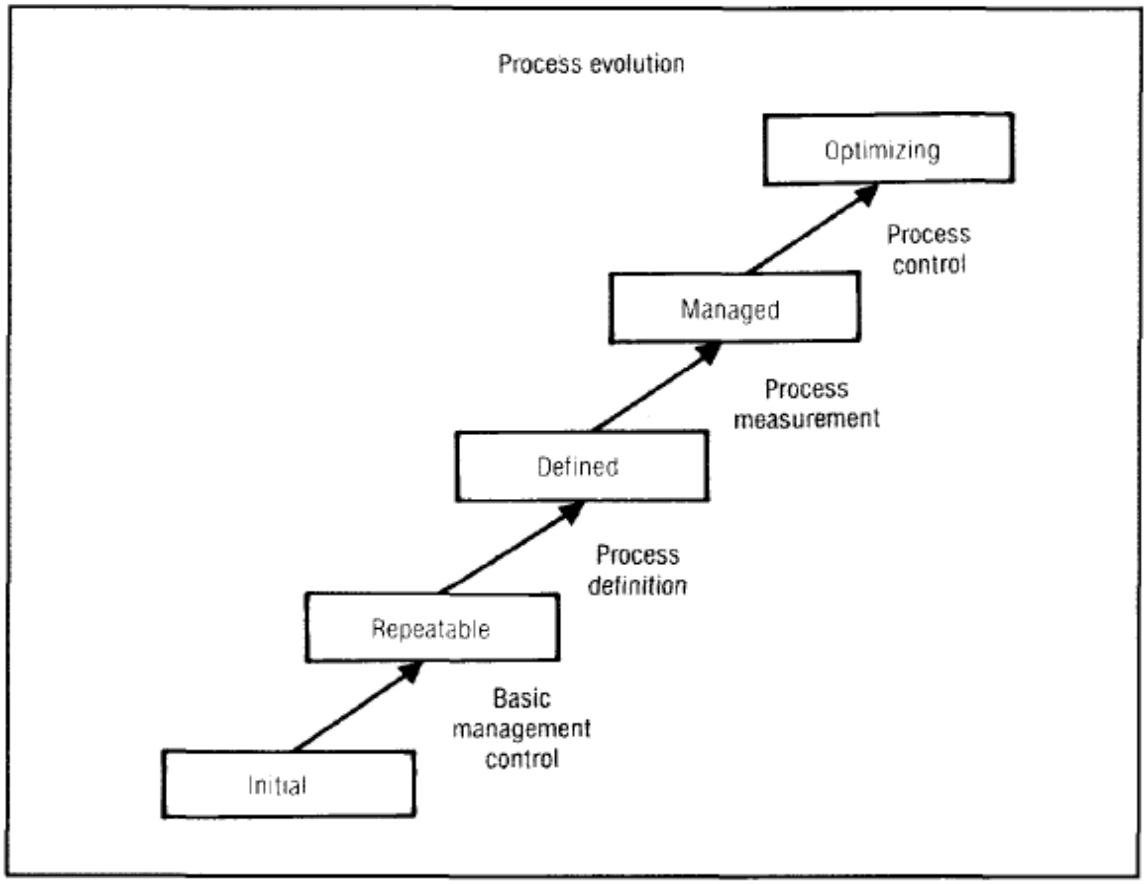


Figure 7.3 A sample of stages in a maturity framework. Adopted from Humphrey (1998)

The different levels of maturity framework address different levels of efficiency and effectiveness (Bloor, 2009). For example, Bloor (2009) describes 4 typical levels of a maturity model, namely: the active; efficient; responsive; and, business driven levels.

Each of the stages describes a different level of achievement. For instance, according to Paulzen et al. (2002), the levels are as follows:

Level 1: Initial Stage - the current condition of the activity, which is not properly planned and is in a disorganised state.

Level 2: Awareness Stage - the condition in which awareness of improving the activity is identified and in which the first structure has been implemented to ensure high quality.

Level 3: Established Stage - at this stage, the focus is on improving the activity to react to special needs.

Level 4: Quantitatively Managed Stage - at this stage, activity to enhance the current process is conducted by measuring the performance to plan and track progress.

Level 5: Optimising Stage - at this stage, the focus is on establishing the structures for continued improvement and self-optimisation.

Similarly, Bloor (2009) identified four levels as follows:

Level 1: Active - specific issues are addressed and it is expected that the current system or activity will be isolated.

Level 2: Efficient - at this level, slight improvement has been achieved and information regarding the need to improve the organisation or process has been identified.

Level 3: Responsive - this level indicates further improvements in terms of defined management, and performance is monitored with slight weaknesses in unintegrated processes.

Level 4: Business Driven - this stage indicates an ideal stage in which most processes are automated and integrated into a cohesive set of activities. This stage is primarily business driven.

In addition, Humphrey (1998) accordingly indicated five levels of maturity process as: initial; repeatable; defined; managed; and, optimising.

The model described above is general, and an individual organisation will not necessarily fit into a specific category (Humphrey, 1998). Although some of the cited arguments were attained from different areas of study, the concepts are applicable to this research. For instance, the purpose of the framework is to study the activities conducted within the organisation to either balance or improvise certain activities that are slightly more advanced than others. This framework also suggests certain improvements that can be made through calculated levels of improvement by tackling different elements, namely, the people or the organisation, the processes and technology.

7.10 Issues and Challenges in the Development of the Integrated Process Protocol and Maturity framework

The proposed process protocol maturity framework was designed to tackle different issues at different levels of management. For instance, at the level of the immigrant construction workers, the challenge is to manage the high remittances they make to

sustain the function of the construction industry as an economic multiplier-accelerator to the Malaysian economy. At the level of the construction industry as well as the construction project, the challenges are to reinforce the image of the construction industry by aiming to attract local employees to join the workforce to improve the image of the '3Ds' and addressing the problem of immigrant construction workers dominating the construction industry.

At the managerial level of immigrant workers' governing agencies, challenges are observed in the number of organisations involved in managing immigrant construction workers at different stages of entry, duplication in the handling of responsibilities, and inconsistency in the rules and regulations imposed on immigrant construction workers of different nationalities.

Hence, the proposed framework consists of three stages: the active phase; the reactive phase; and, the responsive phase. Each of the stages is further divided into several phases to improve implementation: the introductory; implementation; review; revisit; and, regulatory phases, which are indicated on the X-axis of the framework referring to the stages of maturity phases.

The Y-axis of the framework consists of several labelled key actions that represent the parties responsible for executing the tasks and activities. Details of the activity zones and their corresponding stages and responsible parties are further described in the following sections.

7.11 Concluding Remarks

This chapter has explained the effort to integrate economic tools coupled with improvised management of immigrant construction workers to better manage economic cycle leakage in the Peninsular Malaysian construction industry. A review of the literature and the data analysis revealed that there are no direct economic measures such as income tax and levy payments exercised among immigrant construction workers. This chapter has highlighted the key features that need to be addressed in developing a framework to manage economic cycle leakage in the construction industry in Peninsular Malaysia. The next chapter further elaborates the development and implementation of the proposed framework.

Chapter 8 Framework Development & Validation

8.1 Introduction

This chapter describes the developed framework which intended to encourage the authorities responsible in managing immigrant construction workers to adopt economic measures to manage cash flow economic leakage within Peninsular Malaysia's construction industry. The framework was based from literature review findings and data analysis findings.

The result of the data collected from immigrant construction workers household disposable income highlighted high tendency to remit among the immigrant construction workers due to their motivation as well as the contributing factors from the current management of immigrant construction workers as well as its special characteristics. However, the framework is not designed to be prescriptive. It includes a set of key actions to guide the user in using the framework to manage the immigrant construction workers in terms of economics, management and legislation.

The chapter explains the framework background, as well as its aims, features, benefits, conceptual description and contents. The chapter also demonstrates the use of the framework from the process protocol and maturity approach by highlighting the details of the different approaches to the levels of the maturity framework and the significance of the maturity stages. Then, the operation of the framework and the details of each different activity zone were explained and elaborated.

8.2 Research Background

The influx of immigrant construction workers has become a trend in the Malaysian labour industry for the past few decades due to a critical labour supply in the Malaysian construction industry due to the refusal from the local workers to participate in the construction sector (Mohd Yusof, 2005). Immigrant construction workers dominate the total workforce in the Malaysian construction industry. It was reported that in 2010, there were 187,743 legal immigrant construction workers in Malaysia (Department of Statistics, 2010).

The availability of immigrant construction workers to fill in the gap in the construction sector has created a mixture of responses from various parties. For example, their existence has managed to save the construction industry from a critical labour supply, especially in the skilled trades. It is also believed that immigrant workers are diligent and easy to manage (Asia Pacific Migration Research Network, 2006).

However, coupled with the benefits, there are some drawbacks associated with the employment of immigrant labour. The presence of immigrant workers is said to be the main reason that the average rates of construction wages have been driven down, in part because the principal aim of immigrant workers to work abroad is to help with financial support of their families in their home countries.

The scenario of high levels of remittance is also faced by the Malaysian government and has become a major issue under discussion. Hence, this research was designed to attempt to understand the underlying scenario that causes the problems associated with immigrant labour and aims to address these problems using economic theory to balance the high remittance levels.

8.3 The Aim of the Framework

The framework is designed to manage immigrant construction workers in Peninsular Malaysia from three main aspects namely: the economic; management; and, legislation. This improvement can be achieved by utilising economic measures namely, the tools to encourage spending and tools to differ spending. It also looks at other means to improve the well-being of immigrant construction workers through better management of immigrant construction workers. Thus, this framework is hoped to help the authorities in charge in managing immigrant construction workers to effectively manage the immigrant construction workers from economics, management and legislation aspects.

8.4 Developing the Process Protocol Maturity Framework

After reviewing the findings from data analysis and understanding the background of the applicable theories, a maturity protocol action plan is prepared with the goal of improving the research objectives and thus providing solutions to problems related to the research. The maturity framework is depicted in Figure 8.1. However, because of the complexity of the proposed solutions that tackle different aspects and stages, the key activities are indicated in the specified labelled nodes.

Three main measures proposed are: economic actions; management actions; and, legislative actions. Each of the proposed measures will undergone several maturity phases to allow time to introduce, improve and regularise the measures. Phases of maturity have been assigned including the active protocol plan, the reactive protocol plan and the responsive protocol plan.

Each phase was designed with a different plan and mode of execution. However, all of action plans designated at each phase were designed with the single aim of managing economic leakage in the Malaysian construction industry's multiplier-accelerator model. The three levels are as follows:

Level 1: Active Phase

This stage allows for the introduction of different processes and responsibilities to the respondents. It also involves additional responsibilities for several parties to reduce the fragmentation and duplication of tasks and responsibilities. It is believed that by adopting these maturity stages, any rejection or adjustment can be made during the active phase itself. This level is typified by the fact that the introduction of the new economic measures and improvised management and legislation will be difficult to fully implement because the current management consists of a patchwork of isolated activities that often address different objectives.

Level 2: Reactive Phase

This level differs from Level 1 in that it is expected that the implementation of new economic strategies and improvised management and legislation is fundamentally more coherent. In other words, the parties involved in executing the measures have an understanding of the objectives and tasks outlined. This stage will show some improvement in the three economic, management and legislation aspects. The motivation behind the stages was the need to revise some of the activities to improve the implementation of the three main features of the framework. However, it is predicted in this phase that several areas such as the economic measures and improvised management and legislation need to be reviewed to understand the challenges associated with full implementation.

Level 3: Responsive Phase

This level is considered ideal, in which the implementation of all of the tasks and objectives is achieved in a cohesive set of activities. This level aims to achieve comprehensive implementation of the three key elements of the framework to provide a total solution that benefits both the immigrant construction workers and the Malaysian government, particularly the agencies in the government responsible for managing these workers.

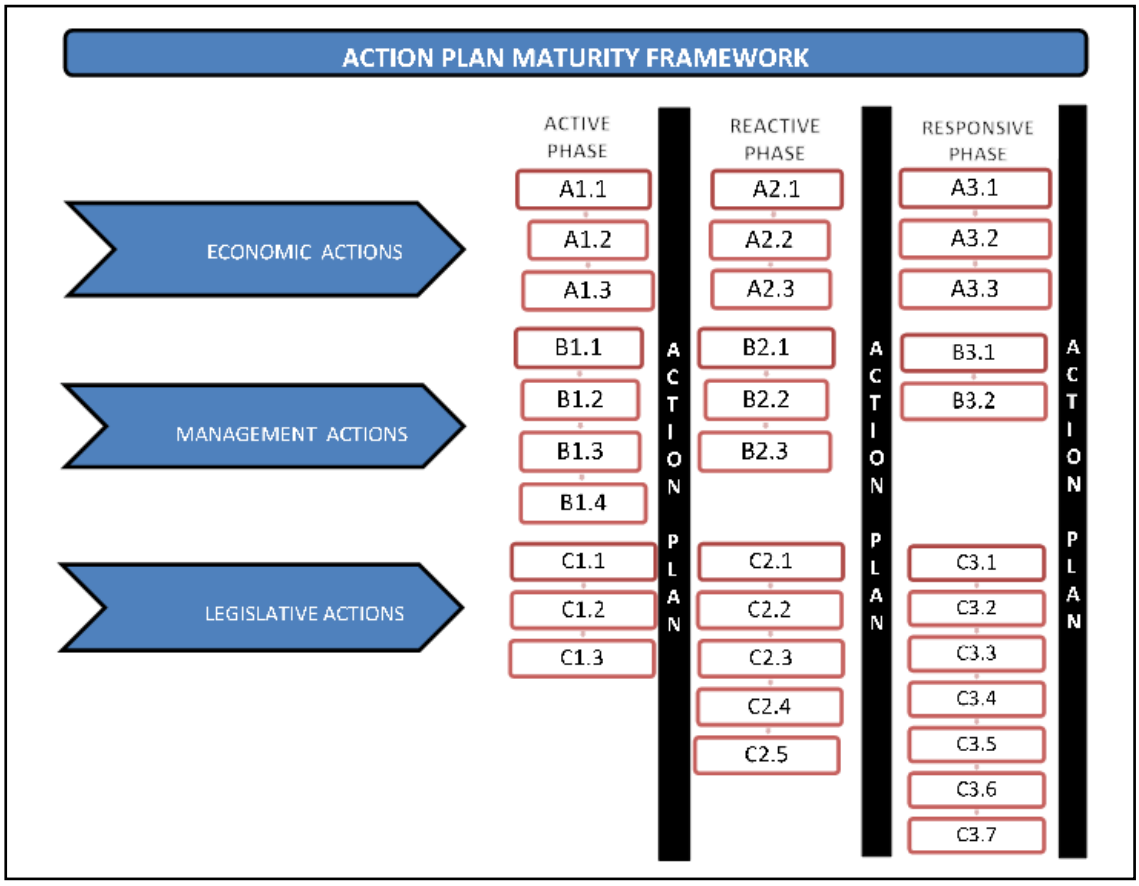


Figure 8.1 Protocol Action Plan to Manage Cash Cycle Flow within the Peninsular Malaysia Construction Industry

In Figure 8.1, the action plan for the maturity framework protocol is subdivided into three action levels, namely, economic action plans, management action plans and legislation action plans. Each of the action plans was further subdivided into three main phases, namely: the active plan; the reactive plan; and, the responsive plan. Each of the phases was further divided into several phases to demonstrate the maturity of each protocol plan. The followings are the details of each protocol plan.

8.5 The Framework Process

The following section describes the functional representation of the framework at economic actions at Active Phase of the proposed framework. The framework starts at addressing economic issues on the far left of the process protocol maturity framework. It started with active phase where, as earlier mentioned is the phase where introduction on measures will be carried out. Any rejections from the either the target group or the authorities should be addressed. Within this key action, the authorities are further provided with the description on the objective of the action, its desirable and its key benefits. The process of the protocol for key actions A1.1 is illustrated in Figure 8.2.

Three main themes of measures which was derived from literature and data collections analysis aims at either managing the immigrant construction workers from economic, management and legislation perspectives. The main idea of the economic measures is to either promote local spending or differ spending. In the case of immigrant construction workers, the idea to differ spending concentrates on reducing the percentage of remittance made.

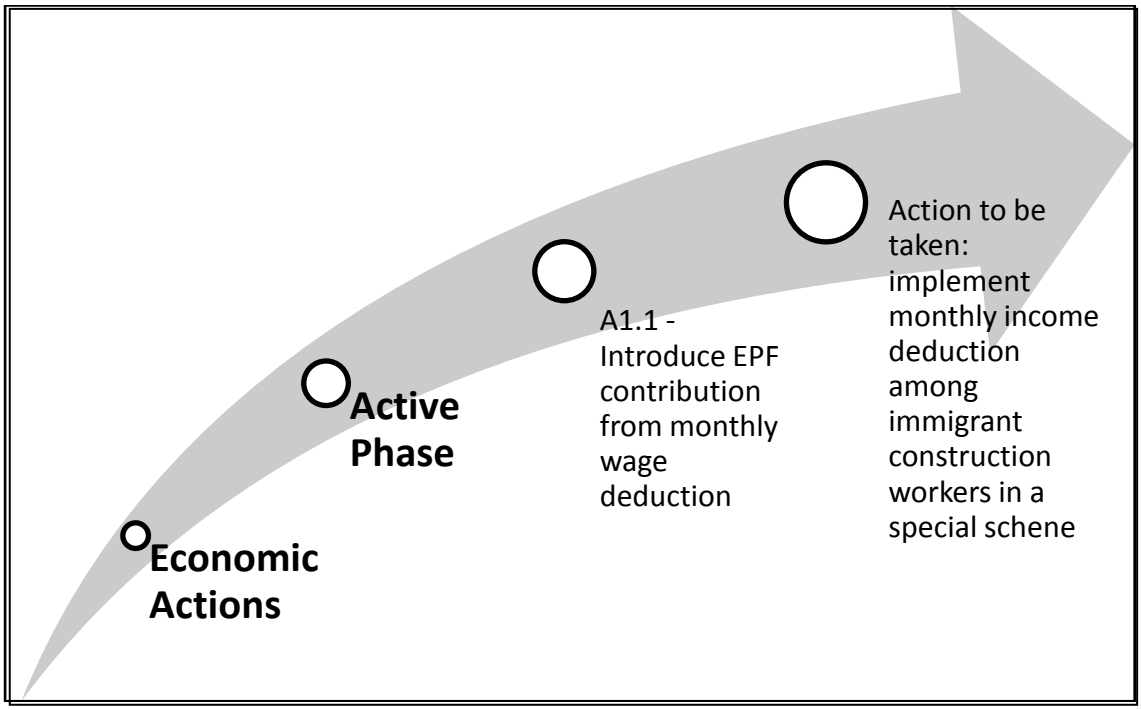


Figure 8.2 The process protocol for Economic Action at A1.1- Active Phase

On the second level of economic actions, the process protocol should proceed to reactive phase. In the framework, it has been classified as A2.1. This is where the introduction of economic actions that is more advanced from the previous protocol. At this stage, the authorities and the target group should have familiar with the objective of the action plans. A more coherent action plan is expected. For instance, an improvement on the monthly EPF contribution from the immigrant construction workers' monthly income should have been regulated. This means that the authorities as well as the target group should have implemented the key actions almost to the full implementation. The process is depicted in Figure 8.3 that follows.

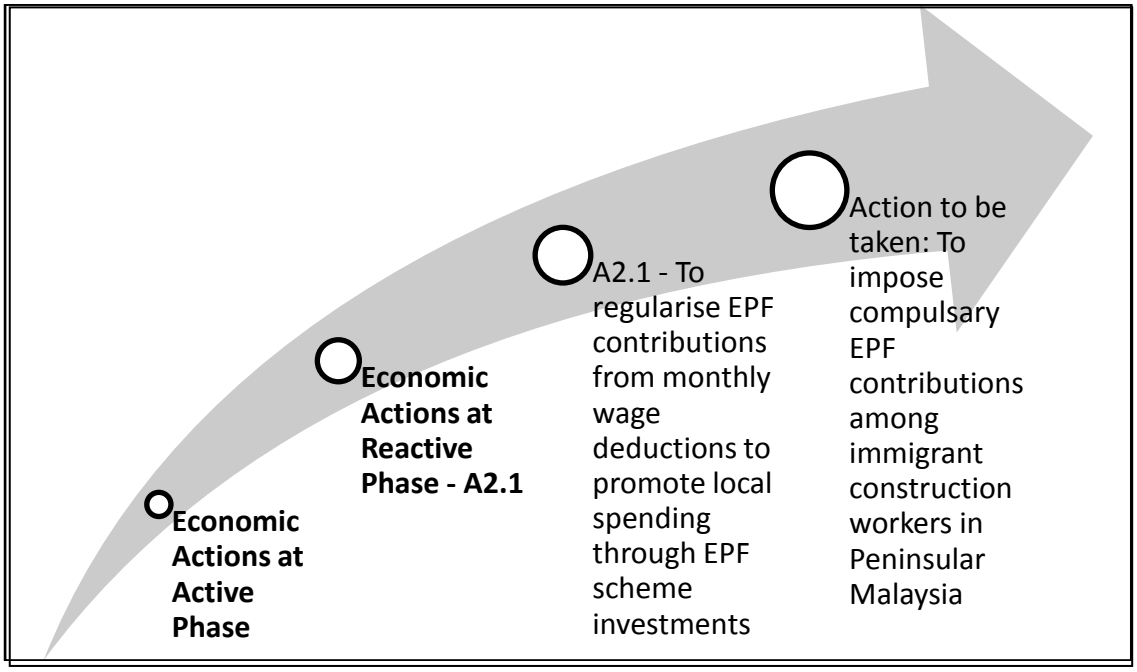


Figure 8.3 The process protocol for Economic Action at A2.1 – Reactive Phase

The last stage for economic actions is at responsive stage. Using the same example from the economic actions, the proposed actions should have reached its maturity level where the implementation of all tasks and objective is achieved cohesively. This stage is considered a comprehensive stage where all the target groups and the authorities have understood the objective and the implementation process fully.

For example, at responsive stage, the EPF contribution has been made compulsory to all immigrant construction workers. This is indicated as A.3.1 in the process protocol maturity framework. The process from key economic actions at reactive stage towards responsive stage is depicted in Figure 8.4.

The whole process protocol will be repeated from other measures namely the managerial actions and legislative actions. For each of the key actions, it will go through the same three stages similar to the key economic actions explained earlier.

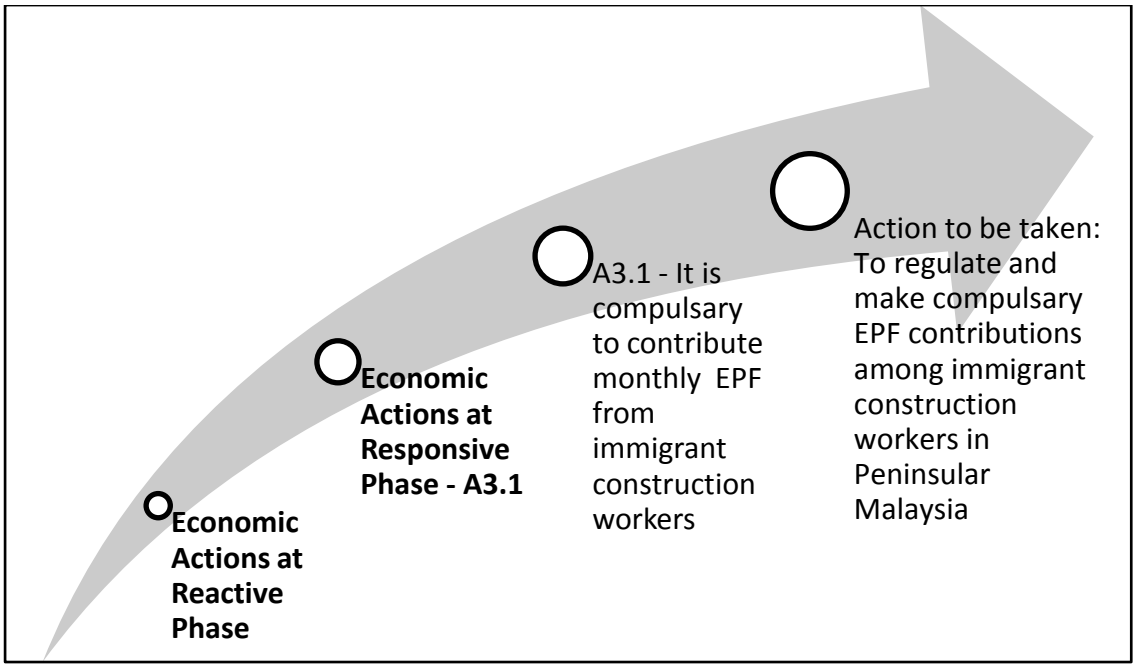


Figure 8.4 The process protocol for Economic Action at A3.1 – Responsive Phase

The followings are the details of each protocol plan at Active phase, Reactive Phase and Responsive phase.

8.6 KEY ACTIONS AT ACTIVE PHASE

Economic Actions		Action	Description	Desirable	Key benefits
A1.1	**Introduce EPF Contribution from monthly wage deduction**	Implement monthly income deduction among immigrant construction workers in a special scheme	This will influence the workers' disposable of the income and will reduce their monthly income, although by only a small amount. This will enable workers to save some of their monthly income, which they will not be able to withdraw until the end of their stay/working period in Malaysia.	To influence the disposal of the income of immigrant construction workers by imposing certain liabilities during their employment in the host country	To control the outflow of money in the form of monthly remittances
A1.2 B1.1	**Competency test for all immigrant construction workers conducted by ABM to improve their skills and promote local spending**	To conduct and implement competency testing among immigrant construction workers before and after their entry into Malaysia	Conducting competency testing of immigrant construction workers will ensure that only skilled workers are being exported to Malaysia. This will help improve the quality of construction projects and also generate a small amount of income from the fees charged to immigrant construction workers to undergo the testing.	To influence the income disposal of immigrant construction workers by imposing certain liabilities during their employment in the host country	To generate skilled immigrant construction labour and promote local spending from the small amount of income generated from the fees charged
A1.3	**To promote local the establishment of bank accounts among all immigrant construction workers**	To ensure that all immigrant construction workers hold local bank accounts for purposes of managing their wages	Ensuring that all immigrant construction workers have their own local bank account will generate small amounts of savings among the workers. By implementing monetary policies, specifically by introducing special interest rates for foreigners, these workers will be encouraged to save rather than to export their wages/monthly income to their home country. The savings kept in the local bank can be used by the bank to make loans and to invest in the nation's economy, thus regulating and strengthening the economy.	To influence the income disposal of immigrant construction workers by imposing certain liabilities during their employment in the host country	To promote savings and local spending and reduce the monthly remittances made by immigrant construction workers

Management Actions		Action	Description	Desirable	Key benefits
KAB1.2	**To make Green Cards compulsory for all immigrant construction workers and to promote local expenditures**	To ensure that each immigrant construction worker possesses a CIDB Green Card	By having the CIDB green card, immigrant construction workers are registered with the governing agencies. This will enable the CIDB to monitor and maintain legal immigrant construction workers on-site as well as generating a small amount of income for the Malaysian economy as fees when workers apply for the Green Card. Additionally, having a Green Card safeguards workers' well-being by insuring them during their employment in Malaysia. The aim is to monitor the number of skilled and unskilled immigrant construction workers in the Malaysian construction industry as well as to promote local spending.	To monitor the number of skilled construction workers and to ensure that all of the immigrant workers on-site are registered to track illegal immigrant workers. Additionally, the action will promote local spending and safeguard immigrant construction workers' health and safety by insuring them through the purchase of the CIDB Green Card.	To monitor the number of skilled and unskilled immigrant construction workers in the Malaysian construction industry as well as to promote local spending
KAB1.3	**To increase the quality of temporary on-site accommodations for immigrant construction workers to promote local spending**	To upgrade the standard of living of the on-site accommodations currently provided by the Malaysian construction industry	By up grading and imposing certain standards for on-site accommodations, the well-being of immigrant construction workers during their employment in Malaysia, a healthy lifestyle will be maintained and will then encourage the workers to spend locally. The image of the construction sector will also be improved by slowly reducing the current on-site 'kongsi' accommodations provided for immigrant construction workers.	To diminish the current conditions of unhealthy lifestyles of on-site accommodations among immigrant construction workers. This will help to upgrade the health and safety issues usually associated with the unhealthy and dirty conditions of living on-site.	To improve the image of the construction industry

KAB1.4	**To reduce the duplication of tasks among authorities in charge in managing immigrant construction workers**	To reduce any duplication of tasks among the governing agencies responsible to managing immigrant construction workers	Reducing the duplication of tasks among the authorities responsible for managing immigrant construction workers will reduce bureaucratic and other resources needed. This will expedite any process involving immigrant construction management as well as reducing government expenditures.	To reduce bureaucracy and save governments pending on resources	To centralize and reduce any redundancy in managing immigrant construction workers in Malaysia

Legislations Actions		**Action**	**Description**	**Desirable**	**Key benefits**
KAC1.1	**To introduce minimum monthly wages with a reduced daily basis rate**	To introduce minimum monthly payments among immigrant construction workers on a reduced daily basis according to workers' skills and competency	Introducing fixed minimum monthly wages/ income among immigrant construction workers will provide them with a certain income guarantee. Thus, workers will feel secure enough to plan the disposal of their monthly personal income. This will promote savings and locals pending.	To influence the income disposal of immigrant construction workers by giving them a level of security regarding their monthly income and hence encourage them to plan their savings and expenditures	To promote local spending with the aim of multiplying the national economic flow
KAC1.2	**To include additional items with minimum standard requirements for on-site accommodations in every contract document, which allows contractors to opt for on-site or off-site accommodations**	To introduce an additional item into the minimum standard requirements for on-site accommodations in every contract document, which allows contractors to opt for on-site or off-site accommodations	Introducing a special item in contracts defining a minimum standard for on-site accommodations will improve the image of on-site accommodations in the Malaysian construction industry. However, there will be a slight increase in the cost of projects to upgrade the current state of on-site accommodations.	Improving the current state of on-site accommodations will help to improve the image of the construction sector as well as attracting local workers to join the workforce. Additionally, this action will reduce accidents or incidents involving the health and safety issues associated with the poor conditions of on-site accommodations among immigrant construction workers.	To upgrade the image of the construction industry and attract local workers to join the workforce

C1.3	**To eliminate different legislation for different immigrant construction workers according to their nationalities**	To design and implement rules and regulations applicable to all nationalities involved in the construction sector	Imposing similar rules and regulations will help the governing agencies to monitor immigrant construction workers easily without having to check different sections in the law for different nationalities. This simplification of the regulations also helps to expedite any legal actions that might be taken towards immigrant construction workers.	To increase the productivity of the governing agencies as well as reduce the resources needed to design different rules and regulations for different nationalities among immigrant construction workers	To increase the productivity of the governing agencies by designing and implementing similar rules and regulations for different nationalities of immigrant construction workers in Malaysia

8.7 KEY ACTIONS AT REACTIVE PHASE

Economic Actions		Action	Description	Desirable	Key benefits
A2.1 C2.1	**To regularise EPF contributions from monthly wage deduction to promote local spending**	To impose compulsory EPF contributions among immigrant construction workers in Peninsular Malaysia	Imposing compulsory EPF contribution will have a direct impact on the income disposal of immigrant construction workers. This will promote local spending as well as reduce the percentage of remittances made monthly.	To influence the income disposal of immigrant construction workers by imposing certain liabilities in the host countries as well as promoting a local economic multiplier	To retain money outflow caused by high remittances. This is by allowing a small percentage of immigrant construction workers' income to be kept in a special fund until the end of their employment in Malaysia.
A2.2 C2.2	**To regularize minimum standards for accommodations during contract employment to promote local spending among immigrant construction workers**	To regularize the minimum standards for on-site accommodations at all construction sites during a contract	Imposing minimum standards for on-site accommodations will eventually diminish the typical 'kongsi type of accommodations currently in use at every construction site in Peninsular Malaysia. Standard definitions will force construction firms and contractors to find alternative accommodations for their immigrant construction workers. This will force them to charge a small fee for worker accommodations.	Having to pay for their accommodations will influence the income disposal of immigrant construction workers by imposing certain liabilities during their employment in Malaysia	To promote local spending among immigrant construction workers
A2.3 C2.3	**To regularise minimum monthly wages with a reduced daily basis rate to promote local spending and savings**	To impose minimum monthly payments with a reduced daily basis rate among immigrant construction workers	Introducing fixed minimum monthly wages /income among immigrant constriction workers will provide some income guarantees among the workers. Thus, they will feel secure enough to plan the disposal of their personal income monthly. This will promote savings.	To influence the income disposal of immigrant construction workers by providing them some security regarding their monthly income and hence encourage them to plan their savings and expenditures	To promote local spending with the aim of increasing the national economic flow

Management Actions		Action	Description	Desirable	Key benefits
B2.1	**Increase the function of the Green Card as a medium to check EPF balances**	To use the Green Card produced by CIDB by enhancing its function from registering and insuring construction workers to providing services for them to check their EPF contributions	Increasing the function of the Green Card to check EPF contributions among immigrant construction workers will promote workers' interest in contributing some of their monthly wages to the proposed scheme. This will reduce the percentages of remittances made because the scheme will encourage local savings rather than exporting of Malaysian money.	To promote local savings among immigrant construction workers and the circulation of money within the Malaysian economic cycle	To promote local savings among immigrant construction workers
B2.2	**To abolish on-site accommodations on all construction sites, with exemptions only for sites located in remote areas, to promote improved conditions in the life styles of immigrant construction workers and to promote local spending**	To abolish and prevent on-site accommodations on all construction sites, with exemption to be made only for sites located in remote areas	Preventing on-site accommodations at construction sites will promote a better lifestyle among immigrant construction workers and improve the image of the construction sites. The action will also promote local spending among immigrant construction workers by requiring them to rent local accommodations during their employment on a construction project.	To influence the income disposal of immigrant construction workers by creating incentives for them to spend locally as well as increasing the local economic flow	To promote local spending and increase the economic flow in areas near construction sites
B2.3	**Increasing the function of CLAB as a one-stop centre to bring in, house and re-distribute immigrant construction workers**	To improve and increase the function of CLAB as a one-stop centre to manage the process of bring in, housing and redistributing immigrant construction workers in the Malaysian construction industry	Enhancing the function of CLAB will save Malaysian government resources by reducing any duplication of tasks and responsibilities involved in managing immigrant construction workers among different governing agencies. The action will also help the government control and monitor the number of immigrant construction workers employed in Malaysia.	To reduce the redundancy of tasks among the governing agencies in charge of managing immigrant construction workers in the Malaysian construction industry	To increase the productivity of the governing bodies involved in managing immigrant construction workers and to monitor the numbers of immigrant construction workers in the Malaysian construction industry

Legislations Actions		Action	Description	Desirable	Key benefits
C2.4	**To include compulsory items for minimum on-site requirements in every contract**	To create a new compulsory item in every contract for a minimum standard for temporary accommodations for construction workers	Creating a new item in contract documents will require implementation and will create an obligation for every contractor. This wills slowly reduce the current practice of on-site temporary accommodations that are usually provided by contractors for employed immigrant construction workers.	To improve the image and reduce health and safety issues related to construction sites	To improve the image of construction sites and to improve health and safety issues often associated with temporary on-site accommodations for immigrant construction workers
C2.5	**To enact similar legislation for all nationalities**	To impose and regularise similar rules and regulations for all immigrant construction workers regardless of nationality	To impose similar rules and regulations immigrant construction workers of all nationalities	To reduce the need of the governing agencies to create and implement different rules and regulations for different nationalities of immigrant construction workers	To increase the productivity of governing agencies by creating, monitoring and regulating similar rules and regulations for different nationalities of immigrant construction workers

8.8 KEY ACTIONS AT RESPONSIVE PHASE

Economic / Legislation Actions		Action	Description	Desirable	Key benefits
A3.1 C3.1	**Compulsory EPF contributions to promote spending among immigrant construction workers**	To regulate the EPF monthly contributions of immigrant construction workers	Making EPF contributions compulsory will have a direct impact on immigrant construction workers' personal income and consumption. This will also help to stimulate the local economy by allowing the EPF to invest the money contributed by immigrant construction workers to other business ventures.	To influence the income disposal of immigrant construction workers by imposing certain liabilities during their employment in Malaysia. This action also aims to reduce the percentage of monthly income made in remittances.	To promote local savings and stimulate the local economy
A3.2 C3.2	**To issue a multifunction Green Card to promote savings among immigrant construction workers**	To impose and make compulsory the increased function of the CIDB Green Card for all immigrant construction workers	To issue a compulsory enhanced-function CIDB Green Card for all immigrant construction workers	To influence the income disposal of immigrant construction workers by imposing certain liabilities during their employment in Malaysia. This action will also reduce the percentage of monthly income made in remittances.	To encourage local savings among immigrant construction workers and to reduce the impact of high levels of remittance made among immigrant construction workers

A3.3 C3.3	**To impose a minimum monthly pay for all immigrant construction workers to promote local spending and savings**	To impose a minimum monthly income for immigrant construction workers with a reduced daily basis according to their level of expertise	Imposing a minimum monthly income with a reduced daily basis will provide security to immigrant construction workers. This will influence their monthly spending, remittance and savings during their employment in the host country.	To influence the income disposable of immigrant construction workers by creating financial security in the form of the receipt of monthly payments. In return, this action is hoped to influence the remittance, spending and savings patterns of immigrant workers during their employment in Malaysia	To create financial security among immigrant construction workers during their employment in Malaysia. This will influence their spending, remittance and savings pattern and will help to influence the local economy

Management / Legislation Actions		**Action**	**Description**	**Desirable**	**Key benefits**
B3.1 C3.4	**To abolish on-site accommodations at all construction sites with exemptions only for sites located in remote areas to promote improved conditions of the lifestyles of immigrant construction workers and to promote locals pending**	To abolish all on-site temporary accommodations at construction sites with exemptions only for sites located in remote areas	Abolishing all on-site accommodations at construction sites will improve the image of construction sites. This will force construction firms to prepare other means of temporary accommodations for immigrant construction workers. Eventually, this action will improve and influence the lifestyles of immigrant construction workers.	Improving the lifestyles of immigrant construction workers will influence their spending and remittance patterns during their employment in Malaysia. Living outside the construction sites will force workers to spend money on rent and transportation to the construction site. This will generate income for the local economy.	To improve the image of construction sites and to improve the lifestyles of immigrant construction workers in Malaysia

B3.2 C3.6	**To appoint CLAB as the sole entity responsible for controlling the entry and exit of immigrant construction workers**	To appoint CLAB as the sole governing agency in control of the entry and exit of immigrant construction workers in Malaysia	Giving all of the responsibility to CLAB to control the entry and exit of immigrant construction workers in Malaysia will reduce any duplication of tasks and responsibilities held by different governing agencies in charge of managing immigrant construction workers	To improve the productivity of the governing agencies in charge of managing immigrant construction workers. The reduced number of agencies in charge will help immigrant construction workers with limited educational backgrounds to identify the appropriate agency in charge.	To reduce the duplication of tasks among the governing agencies responsible for managing immigrant construction workers. This will help reduce the Malaysian government resources needed.
C3.5	**To include a compulsory item for minimum on-site requirements in every contract**	To include an additional compulsory item for a minimum standard for on-site temporary accommodations for construction workers	Including a compulsory item in every construction contract for a minimum standard for on-site accommodations for construction workers will improve the image of construction sites and influence the lifestyles of immigrant construction workers in Malaysia.	To improve the image of construction sites and to improve the lifestyles of immigrant construction workers in Malaysia. This action will also influence the spending and remittance pattern of immigrant construction workers by imposing obligations for them to pay monthly rental and costs for transportation to work.	To improve the image of construction sites and to improve the lifestyles of immigrant construction workers in Malaysia
C3.7	**To enact similar legislation applicable to all nationalities**	To create and implement similar rules and regulations for different nationalities of immigrant construction workers	Creating and imposing similar rules and regulations for different nationalities of immigrant construction workers will help to reduce misunderstandings among immigrant construction workers as a result of their educational backgrounds. This will also increase the productivity of governing agencies by forcing them to create similar rules and regulations.	To improve the management of rules and regulations among immigrant construction workers in the Malaysian construction industry	To reduce any misunderstandings associated with different rules and regulations among immigrant construction workers and to increase the productivity of the governing agencies

8.9 Validation of the Framework

The framework was validated through a formative evaluation approach, in which the appropriateness and functionality of the framework was developed through a thorough literature review on the appropriate economic tools to balance leakage in the economic cycle. The framework was validated at the conceptual framework through formative evaluation where all the preferred economic, management and legislative actions was taken into account during the framework development. This was explained in Chapter 6, section 6.8, where the in-scope findings and partially in-scope findings was identified as a basis to develop the framework.

The validation process starts during the analysis of opinions of immigrant construction workers on the most accepted and appropriate economic tools. This was done to ensure the success of the implementation of the framework. The findings showed that most immigrant construction workers reject the idea of personal income tax and levies charged to them.

However, they like the idea of contributing a certain amount of their monthly wages to a fund known as the Employees' Pension Fund (EPF) used by Malaysian employers and employees. The EPF is a scheme in which both the employer and the employees contribute a certain percentage of the employees' monthly income to the fund.

The fund then contributes to several investments and developments to multiply the fund. Dividends are distributed for each employer and employees at the end of the year. Employees have access to the fund at the end of their working period or when they reach their pension age.

However, there are certain cases in which employees can withdraw their accumulated funds earlier than at the end of their pension period. This suggests the idea of having immigrant construction workers contribute a small percentage of their monthly income to the scheme to allow them to amass savings during their employment in Malaysia. At the same time, this scheme will reduce the impact of remittances made by workers to their home countries. It is proposed that immigrant construction workers would be able to withdraw their money at the end of their working period in Malaysia. The normal working period for immigrant construction workers in Malaysia is 5 years from the date of their first entry.

To further strengthen its validity, the framework was validated through a combination of sources. For instance, opinions were gathered from various parties responsible for managing immigrant construction workers regarding the best economic tools to be implemented among these workers. Additionally, opinions from construction firms were also obtained. The respondents were asked questions regarding their preference among several economic tools that might be possible to implement.

The framework was also validated through a series of interviews with immigrant construction workers and authorities in charge of the management of these workers in Peninsular Malaysia. The respondents were encouraged to suggest improvements to the current system of immigrant construction worker management. All of the responses received were taken into consideration in the development of the framework.

8.10 Concluding Remarks

The proposed framework has attempted to address all aspects of the economics of immigrant construction workers in Peninsular Malaysia. A combination of economic theory and measures, coupled with managerial improvisation and legislation, is key to ensuring better management of cash flow economic leakage in the Peninsular Malaysian construction industry.

The proposed framework is designed in such a way that the implementation of each specific action takes place at a different point in time to allow adjustments and full implementation within the industry. A review of both the process protocol model and the maturity framework reveals the potential benefit of integrating the two systems to form a comprehensive framework to address the issues related to immigrant construction workers in Peninsular Malaysia.

The process protocol enables several parties to integrate the management of these workers to achieve, manage and review the current process. The maturity framework allows for an organisation to not only evaluate its own performance but also improve its performance by comparing its success with that of other organisations in several stages. The use of this framework will allow the organisation to address the problems that arise during the different implementation stages.

Chapter 9 Conclusion & Research Implications

This chapter concludes by presenting a summary of the research through a discussion of how the aim and objectives of the research were achieved. The next section presents the benefits of the framework and describes the contributions and achievements of the research. The chapter discusses recommendations for future research topics, based on this thesis, that might hold the promise of important results. The last section provides a set of closing remarks on the issue of immigrant construction workers in Peninsular Malaysia from an economic perspective. This section summarises the overall findings of the research, highlights the key conclusions and provides recommendations for future research. It also notes the limitations of the research.

9.1 Summary of the Research

This research constitutes a preliminary attempt to examine immigrant construction workers in Malaysia from an economic perspective by integrating economic theory and tools to balance the host country's economic cycle with the existing management and legislation imposed on immigrant construction workers without jeopardising the need and well-being of the immigrant construction workers.

In general, several economic measures are exercised by the government to control the economy at the national level. Some of the economic measures undertaken by the Malaysian government include taxing, control of interest rates and control of prices for certain commodities.

The Malaysian government also exercises a manageable deficit to stimulate the economy, especially during economic downturns. This is usually implemented through the development of public buildings and infrastructure, known as public good provisions.

The rationale and motivation for this expenditure are usually derived from the unique character of the construction industry, which facilitates economic expansion through the multiplier-accelerator model. This model supports an increase in expenditure by multiplying it by other economic sectors. For instance, the development of a construction projects require several other outputs from other economic sectors, such as quarrying, manufacturing and others that ultimately multiply expenditures. This model also considers the contribution to the GDP by taking into account the contributions of government consumption and expenditures. In addition, expenditure and investment in the construction industry creates jobs, which expand to other economic sectors.

The influence of the construction industry on economic cycles in the national economy was the main focus of this research. This study considered the function of the demand for construction projects in providing a stimulus to other economic sectors through the application of an economic theory known as the multiplier-accelerator model. This research attempted to identify factors that could potentially hamper this theory by examining the economic cycle of the construction industry.

The investigation suggested that the high monthly remittances made by the immigrant construction workers in peninsular Malaysia produced some of the leakage in the construction industry cycles. This finding was demonstrated by several economic

reports, newspaper clips and surveys on monthly remittances made by immigrant construction workers in Peninsular Malaysia.

The motivation for conducting this research was to investigate the much-debated issue of the high remittances by immigrant construction workers in Malaysia. This motivation led to the development of the research aim of promoting better understanding of immigrant construction workers by defining the most appropriate economic measures and frameworks to manage the leakage in economic cycles caused by high levels of remittances for the Malaysian construction industry.

To determine a solution to this problem, an in-depth analysis of the current management of Malaysian construction projects was conducted to identify any weaknesses in managing the people involved in the construction sector, especially in the construction projects.

A study was also conducted to understand the current management of immigrant construction workers in Malaysia. This study examined the rules and regulations imposed on immigrant construction workers as well as the agencies involved in creating and implementing these rules. This analysis was conducted to capture any double handling of tasks between the agencies involved and to attempt to identify any problems in managing the immigrant construction workers in Peninsular Malaysia.

In addition, this study also looks at the well-being of the immigrant construction workers in Malaysia to understand their lifestyle and treatment received in the host country, especially in Malaysia. Current economic measures imposed on these workers were also studied to determine the degree of the economic measures imposed and their effect on immigrant construction workers.

Additionally, this study examined appropriate economic measures to manage leakage in economic cycles in an attempt to understand the reasoning behind each measure. The study compared current economic measures by the Malaysian government as well as economic measures implemented by developed countries with similar economic backgrounds.

9.2 Aim and Objectives of the Study

This research aims to promote a better understanding of immigrant construction workers by defining the most appropriate economic measures regarding both their motivation to migrate and the constraints of the host country. It also aims to develop a framework for policymakers in the Malaysian construction industry, so that they can manage the high levels of remittance from these workers.

The aim was achieved through several specific objectives that were translated into the following tasks:

1) provide a detailed review on the management of economic leakage in general and within the construction industry to understand appropriate economic measures to manage leakage within the economic cycle;
2) investigate the relevance and potential of integrating economic tools to improve the management of economic leakage in the Malaysian construction industry;
3) identify inefficiency and ineffectiveness in existing management systems of immigrant construction workers in Peninsular Malaysia to determine any potential for improvement;
4) investigate the immigrant construction workers' spending and remittance patterns to understand their socio-economic background, and thus select the appropriate economic measures; and,

5) develop and evaluate a framework that assists policymakers in efficiently managing remittance among immigrant workers in the Malaysian construction industry.

9.3 Achievement of Research Objectives

The outcomes of the specific tasks undertaken in this research, with respect to the research aim and objectives, are summarised as follows:

Objective 1: provide a detailed review on the management of economic leakage in general and within the construction industry.

A review of the literature and theories on managing economic leakage in the national economic sector in general and within the Malaysian construction industry revealed that the economic cycle was disturbed by several factors, particularly the retention of profits, known as savings, among the construction firms and construction material suppliers.

However, these types of leakages are known as positive leakages as the construction firms and the construction materials suppliers will eventually use their profit and savings to either invests or spend in order to sustain their business. In addition to savings, overseas investments are one of the factors that contribute to disturbances in the economic cycle. However, the literature suggests that one of the factors that contributes most significantly to the leakages is the monthly remittances made by immigrant construction workers as they made up almost 70% of the total employment in the Malaysian construction industry and that the provision for construction wages made up 35% of typical construction budget.

Objective 2: Investigate the relevance and potential of integrating economic tools to improve the management of economic leakage in the Malaysian construction industry.

This objective was achieved by studying the economic theory and measures currently practiced by the Malaysian government to manage economic leakage. This study also examined other economic measures currently practiced by developed countries with similar economic market backgrounds. Chapter 2 considered existing economic theories that are appropriate for manipulating the economic cycle. Possible economic measures to manage economic leakage were discussed, and the most practical and appropriate measures for use in the construction industry in Peninsular Malaysia were identified.

Objective 3: Identify inefficiency and ineffectiveness in existing management systems of immigrant construction workers in Peninsular Malaysia.

This objective was realised through an understanding of the various government agencies responsible for managing immigrant construction workers in Peninsular Malaysia based on a literature review and a series of interviews. The current roles of each government agency were examined to identify any duplication of responsibilities that could reduce efficiency and increase processing time between the agencies and the immigrant construction workers. It can be concluded that there is some redundancy in responsibilities within the agencies, which results in wasted time for construction workers as well as the agencies that handle matters such as registrations and the extension of stay application process. There also appears to be a gap in monitoring the immigrant construction workers once they have completed their contract period for a construction project.

This scenario creates an opportunity for overstaying among the immigrant construction workers, making it difficult for agencies to record the exact number of immigrant construction workers currently residing in Malaysia. The solution to this problem is to fully utilise the functions of CLAB to properly record, import, store and manage the incoming and outgoing immigrant construction workers in Peninsular Malaysia. CLAB should also be given the opportunity to monitor the payments made by construction firms to immigrant construction workers and to maintain satisfactory standards for temporary accommodations for these construction workers. Details of the agencies involved in managing the immigrant construction workers can be found in Chapter 4.

It was also found that there is no standard or guidelines that protect the well being of the immigrant construction workers during their employment in host countries. Most of the measures were designed towards the security of entrance and exit as well as the process for the immigrant construction workers to extend their stays and several other limitations with regards to security, penalties and charges.

Objective 4: Investigate the immigrant construction workers' spending and remittance patterns to understand their socio-economic background, and thus select the appropriate economic measures.

The fourth objective was achieved by conducting a series of interviews among the immigrant construction workers currently working in Peninsular Malaysia. The interviews were conducted either in groups or individually. The interviews were conducted in two sessions, with the completion of a set of questionnaires in the first part and responses to additional questions in the second part. Due to education levels and communication barriers, the immigrant construction workers were assisted during

the session by at least one experienced and fluent immigrant construction worker of a similar nationality as the interviewee.

This approach was intended to achieve a true representation of the current lifestyle and the spending and remittance patterns of the immigrant construction workers in Malaysia. Opinions on the preferred economic measures were also asked among different types of respondents to collect the most preferred economics measures to be exercised among the immigrant construction workers to manage the economic cycle leakage. investigating the lifestyle of immigrant construction workers have managed to justify the high remittance made and that the immigrant construction workers should not be blame solely upon as they was not given the adequate living conditions for them to spend in the host country unlike the locals. The interviews provided a thorough understanding of the limitations and the most appropriate economic measures for immigrant construction workers in Peninsular Malaysia.

Objective 5: Develop and evaluate a framework that assists policymakers in efficiently managing remittance among immigrant workers in the Malaysian construction industry.

The final objective was achieved by combining the recommendations for best practices in managing immigrant construction workers in Peninsular Malaysia with the most suitable economic measures for implementation among these construction workers. The framework was evaluated through formative evaluations approach through a series of interviews with the immigrant construction workers and staff members of the various agencies responsible for managing these construction workers.

Some of the interviewed personnel were sceptical of the framework, but they did not reject the possibility of implementing the proposed framework. Adjustments to the framework were made according to comments received and justification from literature reviews and interviews.

The following sections present the limitations of the research and the conclusions and recommendations for future work.

9.4 Research Implications

Because this study is the first attempt to examine the impact of remittances on the economic cycle of the Peninsular Malaysia construction industry, it has produced both theoretical justifications and empirical data that may have practical relevance for the construction industry. Accordingly, this section reviews the implications of this research.

9.4.1 Implications for the Construction Industry

The present research fills an important gap in understandings of both the construction sector and the economic cycle of peninsular Malaysia. The primary contribution of this study is that it presents new information for the agencies governing the construction industry about the impact of monthly remittances by immigrant construction workers to the economic cycle of the construction industry. This information is important because the numbers of declared and undeclared immigrant construction workers within the construction sector are substantial. Any changes regarding the use of immigrant construction workers could trigger changes in the duration of construction projects and could slow construction progress and also affect the economic flow of the nation's economy.

Second, this research provides a comprehensive understanding of the current situation of immigrant construction workers, the agencies involved in managing them and the rules and regulations imposed on both the construction workers and their employers. This information is derived from reports of the high remittances made by immigrant workers in Malaysia.

Third, this research on immigrant construction workers adds a new dimension to understandings of engaging and managing immigrant construction workers in Peninsular Malaysia. No previous studies have examined the lifestyle and disposable household income of immigrant construction workers. In addition to presenting a current view of the management of immigrant construction workers, this research is the first of its kind to employ a rigorous methodology to explore the impact of remittances using a substantial sample population from various construction sites in Peninsular Malaysia.

9.4.2 Implications for Immigrant Construction Workers

This study may benefit immigrant construction workers because it was designed to understand their current lifestyle and to improve their current management and welfare. The discussion on management and regulations provides ethical guidance for the agencies involved in managing immigrant construction workers. These agencies must determine whether to pursue the proposed framework to improve the current conditions of these workers. Moreover, by understanding the nature and character of immigrant construction workers, better regulations could be designed to address their problems and limitations.

Additionally, an examination of the current employment process suggests that new measures should be taken to produce better living conditions for immigrant construction workers during their employment contracts in Peninsular Malaysia.

9.4.3 Implications for Policy Makers

The policy makers involved in managing immigrant construction workers should consider changes to the current agency rules and regulations for the management of immigrant construction workers. These changes could promote better understanding among immigrant construction workers about the scope of their work. As noted in this research, because these agencies have the power to affect the way construction workers are managed by construction firms, it is important to inculcate responsibility among the construction firms to safeguard immigrant construction workers and to understand their significant contribution of manpower for the construction sector.

This information will increase awareness among construction firms of the importance of ensuring justice and virtue in human endeavours and affairs and create a harmoniousatmosphere between the agencies, construction sectors and the immigrant construction workers.

This research calls for relevant agencies, such as CIDB, CLAB, MoHR and the Immigration Department, to develop practical economic measures to manage the economic leakage and to improve the living situations of immigrant construction workers. These improvements include providing a framework or opportunity for immigrant construction workers to contribute to specific types of national schemes, such as EPF, to help these workers establish savings during their employment in Peninsular Malaysia. Such attempts may require the CIDB to co-operate with CLAB to

ensure that all immigrant construction workers are recorded and safeguarded, both physically and economically.

Additionally, monitoring and enforcement should be performed more thoroughly and efficiently. Initiatives should be provided for construction firms to improve the conditions of temporary site accommodations, and additional items should be included in the contract documents identifying minimum standards of accommodation for immigrant construction workers. This procedure will slightly increase construction costs, but it will help to dampen the effect of economic leakage and allow immigrant construction workers to live similarly to the locals in their host countries.

9.5 Limitations and Future Research

Despite efforts to ensure that this research provides practical measures to manage leakage caused by remittances, this study is not without limitations. The fact that there were no economic measures imposed on immigrant construction workers due to their irregular and low income makes it difficult for the Malaysian government to impose taxes on these workers. Additionally, due to the nature of construction work, in which work duration is short and geographic locations are temporary, immigrant construction workers must travel between sites. Hence, it is difficult to impose standards for accommodations for construction labourers.

Second, the present research focused on reducing the impact of economic leakage on the Malaysian construction industry. This study suggested that the way forward is to establish local spending among the immigrant construction workers. One way to achieve this goal is to create an atmosphere in which immigrant workers will spend money on basic necessities, similar to the locals. One aspect that proved difficult to

penetrate was the current liabilities faced by these immigrant construction workers in their home countries. Most of the income they receive is exported to help their families. Although almost half of these workers are unmarried, they often feel the responsibility to support their parents and siblings. Some of these workers admit that they had to obtain loans to support the cost of travelling to work in Malaysia. Hence, promoting local spending is not the best way to retain the money cycle. Instead, special types of taxes should be imposed that can be reclaimed upon these workers' return to their home countries at the end of their contracts.

The third limitation in this study comes from the current practice in the construction sector of seeking immigrant construction workers from various sources. This situation creates difficulties in managing the immigrant construction workers currently residing in peninsular Malaysia. Most construction firms refuse to use CLAB as a means to locate construction workers; they prefer to find their own supply from neighbouring countries and to abandon them at the end of their contract period. This creates the potential for undeclared immigrant construction workers who are left without support in applying for working permit extensions.

Another problem regarding immigrant construction workers is that there is no proper channel to pay their wages. Most of these workers receive either weekly or daily pay due to the nature of construction work. Thus, these workers are often unaware of their monthly income, limiting their ability to plan their monthly expenditure. Therefore, immigrant construction workers should receive at least minimal monthly payments.

Finally, the survey was limited to the Peninsular Malaysian construction sector due to geographical and regulatory differences in immigrant construction employment in East Malaysia. Thus, this research does not present a Malaysian perspective; rather, it presents a snapshot of the problems occurring within Peninsular Malaysia. Moreover, there is little employment of immigrant construction workers in East Malaysia. Hence, future studies should conduct similar research in the East Malaysia region to identify similarities or differences in this issue.

Despite these limitations, this study has yielded preliminary evidence on the level of remittances made by immigrant construction workers that contributes to the leakage in the economic cycle in the construction sector. Because this study is a first attempt to acknowledge the importance of managing the economic leakage among immigrant construction workers using theoretical and empirical perspectives, this research naturally involves the aforementioned limitations. However, as one of the first studies of the construction industry, the findings of this study may create substantial opportunities for further research.

9.6 Concluding Remarks

Economic theory and economic tools are central in managing a country's economy. Each of the tools has been designed to manage the economy at both the micro and macro levels. It is also important to recognise the effect of certain economic activity on overall economic performance to maintain balanced economic performance. The function of the economic sectors, particularly the economic players, is crucial for these tasks. Hence, the economic function of the construction industry is central, especially when the industry promotes economic expansion through the economic multiplier-accelerator model.

However, the over reliance on immigrant construction workers, who account for almost 80% of the total workforce in the Peninsular Malaysian construction industry, has dampened the ability of the construction industry to provide a multiplier-accelerator function. This is due to the high levels of remittances by immigrant construction workers, which are mainly due to their motivation to work in Malaysia. There are no specific economic measures designed for immigrant construction workers in Peninsular Malaysia, which leaves these workers with no economic obligations except for levies and visa payments.

Moreover, the high level of remittances among immigrant construction workers is due in part to inefficiency in the management of these workers by the authorities in terms of monitoring their movements of as well as poor on-site accommodations.

The findings of this study suggest the development of the aforementioned process protocol maturity framework for managing the high level of remittances made by the immigrant construction workers and to improve the management of these workers in Peninsular Malaysia and their well-being in the host country.

The application of this framework can help the authorities in charge of the management of immigrant construction workers in Peninsular Malaysia to better manage these workers in terms of economic, managerial and legislative issues while enabling these construction workers to live better lifestyles. This application also contributes to the host countries in terms of economics and the labour supply.

REFERENCES

Abd. Rahman, N. (2009, August 13). *Amaran tarik lesen agensi asing*. Retrieved August 14th, 2009, from Utusan Online: http://www.utusan.com.my/utusan/info.asp?y=2009&dt=0813&pub=Utusan_Malaysia

Abdul Rashid, R. (1998). *A Model for An Effective Implementation of the Government Technology Transfer Policy in the Malaysian Construction Industry.* Reading: University of Reading.

Abdul Rashid, R. (2011, June 9-11). The Economics of Construction Project. *2 days High Impact Workshop* , pp. 1-7.

Abdul-Aziz, A. A. (2001). Foreign workers and labour segmentation in Malaysia's construction industry. *Construction Management and Economics* , 789-798.

Abdullah, F. (2004). *Construction Industry & Economic Development: The Malaysian Scene.* Johor, Malaysia: Universiti Teknologi Malaysia.

Adams Jr, R. H. (2003). *International Migration, Remittances and Poverty in Developing Countries.* Washington: World Bank Policy Research Working Paper.

Ali, K.N. (2004). *An Online Knowledge Management System for Reactive Maintenance Projects in the UK.* Salford: Salford University.

Amaratunga, D., Baldry, D., Sarshar, M., and Newton, R. (2002). Quantitative and Qualitative Research in the Built Environment: Application of 'Mixed' Research Approach. *Work Study*, 17-31.

Asia Pacific Migration Research Network. (2006). *Migration Issues in the Asia Pasific: Issues Paper from Malaysia.* Retrieved March 8th, 2007, from Unesco: http://www.unesco.org/apmrnwp9.htm

Asian Development Bank (2006). *Worker's Remittance Flows in South East Asia.* Geneva: ADB.

Auerbach, C. F. (2003). *Qualitative Data: An Introduction to Coding and Analysis.* New York: New York University Press.

Bernama (2008). 1 setiap 5 Pekerja Asing. In the Bernama, 20th October 2008.

Balch, A., and Geddes, A. (2006). *UK migration policy in light of sectroal dynamics: the case of the consturction sector.* Liverpool: University of Liverpool.

Blaxter, L. H. (2001). *How to Research.* Berkshire: Open University Press.

Bloor, R. (2009, September 3rd). *Client Management: A Maturity Framework - From fragmented management to business driven management.* Retrieved September 3, 2009, from Hurwitz & Associates: http://www.ca.com/us/~/media/files/whitepapers/client_management_a_maturity_framework.aspx

Bon, R. (1992). The Future of International Construction: Secular Patterns of Growth and Decline. *Habitat International*, 119-128.

Bronfenbrenner, M., Werner, S., and Gardner, W. (1987). *Macroeconomics: 2nd Edition.* Boston, United States of America: Houghton Mifflin Compony.

Brown, V. (1996). Macroeconomic Modelling: Aggregate Demand and Stabilization Policy. In M. Mackintosh, V. Brown, N. Costello, G. Dawson, G. Thompsom, and A. Trigg, *Economics and Changing Economies, 1st Edition* (pp. 557-591). London: International Thomson Business Press.

Brownlee, P., and Mitchell, C. (1997). Migration Issues in the Asia Pasific: Issues Paper from Malaysia. *Asia Pacific Migration Research Network (APMRN).* Bangkok: Asia Pacific Migration Research Network (APMRN).

Burns, R. B. (2000). Introduction to Research Methods, SAGE, London.

Case, K., and Fair, R. (2004). *Principles of Macroeconomic, 7th Edition.* New Jersey: Pearson Prentice Hall.

Chapman, B. (2000). Immigration: An Overview of Information Resources. *Reference Services Review* , 268-289.

CIDB (2006). *A Macro-Economic Assessment of the Construction Industry in Malaysia.* Kuala Lumpur: CIDB Malaysia.

CIDB (2007). *Kajian Jumlah Peratusan Pekerja Asing Dalam Industri Pembinaan.* Kuala Lumpur: Bahagian Pembangunan Personel Binaan, CIDB, Malaysia.

CIDB Malaysia. (2007). *Construction Industry Master Plan 2006 - 2015.* Malaysia: Construction Industry Development Board.

CIDB, Bahagian Pembangunan Personel Binaan. (2007). *Kajian Jumlah Peratusan Pekerja Asing dalam Industri Pembinaan.* Kuala Lumpur: CIDB Malaysia.

Creswell, J. W. (2005). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research.* New Jersey: Pearson Education.

Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative and Mixed Method Approaches.* Thousand Oaks, California: SAGE Publications, Inc.

Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches.* Thousand Oaks: Sage Publications.

Dainty, A. (2007). A Call for Methodological Pluralism in Built Environment Research. *The 3rd Scottish Conference for Postgraduate Researchers of the Built and Natural Environment (PR0BE07)* (pp. 1-10). Glasgow: Glasgow Caledonian University.

Dainty, A. (2004). *Methodologies for Construction Management Research: Lecture of Research, Innovation and Communication at the Department of Civil and Building Engineering.* Loughborough: Loughborough University.

Dainty, A., Ison, S., and Briscoe, G. (2005). The construction labour market crisis: the persepctive of small-medium-sized firms. *Construction Management and Economics*, 387-398.

Dainty, A., Ison, S., and Root, D. (2004). Bridging the skills gap: a regioanlly driven strategy for resolving the construction labour market crisis. *Engineering, Construction and Architechtural Management* , 275-283.

Dietz, T and Kalof, L (2009). Introduction to Social Statistics. West Sussex, Wiley-Blackwell.

Dusuki, A. (2005). *Corporate Social Responsibility of Islamic Banks in Malaysia: A Synthesis of Islamic and Stakeholder's Perspective.* Loughborough: Loughborough University.

El-Mokadem, A. M. (1973). *Econometric Models of Personal Savings: the United Kingdom 1948-1966.* London: The Butterworth Group.

Fathi, M. (2009). *Micro and Macro-Level Context-Aware Information Delivery for Construction Programme Managers.* Loughborough: Loughborough University.

Fellows, R. L. (2003). *Research Methods for Construction.* Oxford: Blackwell Publishing.

Friedman, M. B. (1975). *Economic Stabilization Policy: Methods in Optimization.* New York: North-Holland Publishing Company.

Gammeltoft. (2002). Remittances and Other Financial Flows to Developing Countries. *International Migration*, 181-211.

Glazer, A., and Rotherberg, L. (2001). *Why Government Succeed and Why It Fails.* London: Harvard University Press.

Grbich, C. (2007). *Qualitative data analysis: An Introduction.* London: Sage Publications.

Guthrie, G. (2010). *Basic Research Methods.* New Delhi: SAGE Publications India Pvt Ltd.

Hai, C.T. (2006). A Methodology for the 'Live' Capture and Reuse of Project Knowledge in Construction. Unpublished PhD Thesis, Loughborough University, Loughborough.

Harvey, J. (1988). *Modern Economics: An Introduction for Business and Professional Students: 5th Edition.* Hampshire: Macmillan Education Ltd.

Herman, S. E. (2006). Triangulation in Action: Integration of Qualitative and Quantitative Methods to Research Environmental Leadership. In A. Bryman, *Mixed Methods Vol. IV* (pp. 177-197). London: SAGE Publications Ltd.

Hillerbrandt, P. M. (2000). *Economics Theory and The Construction Industry: Third Edition.* London: Macmillan Press Ltd.

Holdem K, Peel, D.A and Thompson, J.L, (1982), *Modelling in the UK Economy: An Introduction,* Martin Robertson & Company Limited, Oxford

Holliday, A. (2002). *Doing and Writing Qualitative Research.* London: SAGE Publications Ltd.

Hosein, R and Lewis T.M (2005), Quantifying The Relationship Between The Relationship Between Aggregate GDP and Construction Value Added in a Small Petroleum Rich Economy: A Case Study of Trinidad & Tobago, *Construction Management and Economics*, Vol. 23, pp. 185-197.

Humphrey, W. S. (1998, March). Characterising the Software Process: A Maturity Framework. *Software Management*, 73-79.

Hurwitz and Associates. (2007). *Client Management: A Maturity Framework: From fragmented management to business driven management.* Newton: Hurwitz & Associates.

Ishida, A., and Shahid Hassan, M. (2000). Why Do Migrant Workers Intend to Extend Their Stay in Host Countries. *International Migration* , 99-115.

Lafayette County, (2006) *Addressing Economic Leakage at the County Level*, web site available from: http://www.uwex.edu/ces/cty/lafayette/EconomicLeakage.html

Ibrahim, R. (2009, June 30th). *Pekerja asing hutang RM3.055juta*. Retrieved August 18th, 2009, from Utusan Online: http://utusan.com.my/utusan/info.asp?y=2009&dt

Immigration Department Malaysia. (2007, June 17th). *Control of Entry into Malaysia*. Retrieved June 17th, 2007, from Immigration Department Malaysia.

Immigration Department, Malaysia. (2007, January 15th). *Pekerja Asing Separa Mahir & Kurang Mahir*. Retrieved January 15th, 2007, from Immigration Department, Malaysia: www.imi.gov.my/bm/perkhidmatan/im_separa.asp

International Labour Office (2004). Towards a fair deal for migrant workers in the global economy. *International Labour Conference, 92nd Session* (pp. 1-208). Geneva: International Labour Office.

Ive, G. J., and Gruneberg, S. L. (2000). *The Economics of Modern Construction Sector.* London: Macmillan Press Ltd.

Jabatan Tenaga Kerja Semenanjung Malaysia, Kementeria Sumber Manusia (2006). *Buku Panduan: Dasar, Prosedur dan Syarat-syarat Penggajian Pekerja Asing di Malaysia.* Putrajaya: Jabatan Tenaga Kerja Semenanjung Malaysia, Kementeria Sumber Manusia.

Jalil, Z. (2010, January 16th). *Pati dibendung secara holistik*. Retrieved February 1st, 2010, from Utusan Online: http://www.utusan.com.my/utusan/info.asp?y=2010&dt=0116&pub=Utusan_Malaysia

Joseph A, M. (2005). *Qualitative Research Design: An Interactive Approach.* California: SAGE Publications.

Kagioglou, M., Cooper, R. a., Hinks, J., and Sexton, M. a. (1998). *A generic guide to the design and construction process protocol.* Salford: University of Salford.

Kagioglou, M., Cooper, R., and Aouad, G. (1998). Re-engineering the UK Construction Industry: The Process Protocol. *Engineering, Construction and Architectural Management*

Kasim, R., K, A., & Hudson, J. (2008). *A Choice of Research Strategy for Identifying Community-Based Action Skill Requirements in the Process of Delivering Housing Market Renewal.* Manchester: University of Salford.

Kogiku, K. (1968). *An Introduction to Macroeconomic Models.* USA: McGraw-Hill.

Legal Research Board. (2006). *Immigration Act 1959/63 (Act 155) & Regulations and Orders & Passports Act 1966 (Act 150).* Petaling Jaya: International Law Book Services.

Levy, S. M. (2010). *Construction Process Planning and Management: An Owner's Guide to Successful Projects.* Oxford: Elsevier Inc.

Lu, S., & Sexton, M. (2004). Appropriate Research Design for Investigating Innovation in Small Knowledge-Intensive Professional Service Firms. *20th Annual ARCOM Conference* (pp. 733-739). Edinburgh: Heriot-Watt University.

Lueth, E., & Ruiz-Arranz, M. (2006). *IMF Working Paper: Asia Pasific Department: A Gravity Model of Workers' Remittances.* Geneva: International Monetary Fund.

Mandel, M. (2009). *Economics: The Basic.* New York: McGraw-Hill Companies, Inc.

May, T. (2001). *Social Research: Issues, methods and process: 3rd Edition.* Maidenhead : Open University Press.

MacKenzie, C. (2005). Labour Migration in Asia: Protection of Migrant Workers, Support Services and Enhancing Development Benefits, International Organization for Migration, Switzerland.

Mertens, M. D. (2005). *Research and Evaluation in Education and Psychology: Integrating Diversity with Quantitative, Qualitative and Mixed Methods: 2nd Edition.* California: SAGE Publications Inc.

Miles, M. B., and Huberman, A. (1994). *An Expanded Sourcebook: Qualitative Data Analysis, 2nd Edition.* Thousand Oaks: SAGE Publications.

Mingguan Malaysia. (2006, October 22nd). 1.9 Juta *Pekerja Asing bawa pulang RM500 juta Sebulan*. In the Mingguan Malaysia, 22nd October 2006

Ministry of Human Resource, M. (2006). *Induction Course for Foreign Workers Working in Malaysia.* Putrajaya: Ministry of Human Resource, Malaysia.

Mohamed, S. F. (2006). Improving Site Management Practices through Knowledge Management. *Doctor of Philosophy Thesis* . Loughborough, Leicestershire, United Kingdom: Loughborough University.

Mohd Daud, Z, Ahmad, M H, Adnan, R, Syed Jamaludin, S S, Yusof, F and Mohamad, I. (2005), Statistics Workbook for Sciences and Engineering, Skudai, Jabatan Matematik, Fakulti Sains, Universiti Teknologi Malaysia

Mohd Yusof, Z. (2005). Ke Arah Pengurangan Kebergantungan Tenaga Kerja Asing di Sektor Binaan. *Jurnal Alam Bina, Jld. 07 No.1* , 71-86.

Mullaly, M. (2012). Retrieved February 21, 2012, from The Information Technology and Telecommunications Specific Interest Group.

Mustapa, F., and Pasquire, C. (2007). Immigrant Construction Workers and Economic Leakages: The Third Scottish Conference for the Postgraduate Researchers of the Built and Natural Environment (PROBE 07). Glasgow Caledonian University.

Mustapa, F., and Pasquire, C. (2008). Immigrant Construction Workers' Spending and Remittance Pattern: The Malaysian Perspective. *CIB Joint International Symposium 2008 (W055 & W065).* Dubai: Heriot-Watt University.

Mughal R & Padilla L. (2005). Workers Migration in Asia: Protection of Migrant Workers, Support Services and Enhancing Development Benefits. In: McKenzie, C. (Ed.) International Organization for Migration, Switzerland: International Organization for Migration

Manning, C. (2001). The East Asian Economic Crisis and Labour Migration: A Set-back for International Economic Integration? Departmental Working Papers with number 2001-3. Australian National University, Economics RSPAS.

Narayanan, S., and Lai, Y. (2005). The Causes and Consequences of Immigrant Labour in the Construction Sector in Malaysia. *International Migration*, 31-57.

Navamukundan, A. (2006). *Labour Migration in Malaysia - trade union views.* Retrieved May 16th, 2007, from International Labour Office: http://www.ilo.org/public/english/dialogue/actrav/publ/129/21/pdf

NST Online. (2008). Foreign Workers: Are They Being Treated Fairly. In the News Stratis Time, 22nd January 2008.

Ofori, G. (1990). *The Construction Industry: Aspects of Its Economic and Management.* Singapore: Singapore University Press.

Ofori, G. (2006). *Working Paper: Foreign Construction Workers in Singapore.* Geneva: International Labour Office.

O'Sullivan, A., and Sheffrin, S. (2005). *Microeconomics: 4th Edition.* New Jersey: Pearson Prentice Hall.

Othman, A. A. (2004). *Value and Risk Management for Dynamic Brief Development in Constuction.* Doctor of Philosophy Thesis. Loughborough, Loughborough University.

Pathirage, C.P, Amaratunga, R.D.G and Haigh, R.P. (2006). Managing Construction Workers and Their Tacit Knowledge in a Knowledge Environment: A Conceptual Framework, 6th International Postgraduate Research Conference in the Built & Human Environment, April 2006, Delft University of Technology and TNO, Delft University, Netherlands.

Paulzen, O., Doumi, M., Perc, P., & Cereijo-Roibas, A. (2002). A Maturity Model for Quality Improvement in Knowledge Management. *AIS Electronic Library (AiseL)* (p. 5). Germany: Australasian (ACIS).

R. Kassim, Alexander, K., and J.Hudson. (2008). A choice of research strategy for identifying community-based action skill requirements in the process of delivering housing market renewal. PhD thesis, University of Salford.

Randolph, J. J. (2009). A Guide to Writing the Dissertation Literature Review. *Practical Assessment, Research & Evaluation* , 1-13.

Root, M. (1993). *Philosophy of Social Science.* Malden: MA: Blackwell.

Rosli, S., and Kumar, S. (2006). 1.9 juta pekerja asing bawa pulang RM500 juta sebulan. *Mingguan Malaysia* .

Russell. (1986). Remittances from International Migration: A Review in Perspective. *World Development* , 677-696.

Salt, J., and Millar, J. (2006). *Foreign labour in the United Kingdom: current patterns and trends.* London: Labour Market Trends.

Samuelson, P. N. (2010). *Economcis: Nineteenth Edition.* New York: McGraw Hill Companies, Inc.

Sears, S. K., Sears, G. A., and H, C. R. (2008). *Construction Project Management: A Practical Guide to Field Construction Management.* New Jersey: John Wiley & Sons.

Seeley, I. H. (1996). *Building Economics: Fourth Edition.* London: Macmillan Press Ltd.

Seeley, I. H. (1998). *Quantity Surveying Practice.* London: Macmillan Press Ltd.

Sharma, J. N. (2007). *Research Methodology: The Discipline and its Dimensions.* New Delhi: Deep and Deep Publications Pte. Ltd.

Silverman, D. (2006). *Interpreting Qualitative Data: 3rd Edition.* London: SAGE Publications.

Sirkin, G. (1970). *Introduction to Macroeconomic Theory 3rd Edition.* New York: Richard D. Irwin Inc.

Sloman, J. (2006). *Economics: 6th Edition.* Essex: Pearson Education Limited.

Sloman, J., and Norris, K. (2005). *Principles of Macroeconomics.* Frenchs Forest: Pearson Education Australia.

Spillane, J. (2005). Construction Industry Continues to Feel the Squeeze of Labour Shortage. *Construction Executive* , pp. 21-24.

Stanlake, G. (1984). *Macroeconomics: An Introduction: 3rd Edition.* Essex: Longman Group Limited.

Stone, P. (1983). *Building Economy: Design, Production and Organisaiton - A Synoptic View, Third Edition.* Oxford: Pergamon Press Ltd.

Syafaat. (2008, October 22nd). *Pekerja Asing bawa pulang RM9 billion*. Retrieved Oct 22nd, 2008, from Utusan Online: http://www.utusan.com.my/utusan/info.asp?y=2010

Taylor, E. J. (1999). The New Economics of Labour migration and the Role of Remittances in the Migration Process. *International Migration*, 63-88.

Office, U. H. (2005). *Illegal Working Taskforce Regulatory Impact Assessement for Immigration, Asylum and Nationality Bill.* Croydon: UK Home Office.

Vosper, C. (1986). *Money-Go-Round: Economcis for GCSE.* Oxford: Blackwell.

Wan Abdullah, W. M., and Ramly, A. (2006). Successful Project Management Leads to Project Success. *Quantity Surveying National Convention Malaysia* (pp. 191-200). Kuala Lumpur: Universiti Sains Malaysia.

Welch, P., and Welch, G. (2007). *Economics Theory and Practice: 8th Edition.* Danvers: John Wiley & Sons, Inc.

Wickramasekera, P. (2002). Asian Labour Migration: Issues and Challenges in an Era of Globalization, 57, Geneva, International Migration Programme.

Wyss, S., and Thieme, S. (2005). Migration Patterns and Remittance Transfer in Nepal: A Case Study of Sainik Basti in Western Nepal. *International Migration* , 59-98.

Zachariah, K., Mathew, E., and Irudaya Rajan, S. (2001). Social, Economic and Demographic Consequences of Migration on Kerala. *International Migration* , 43-71.

APPENDIX 1 – SAMPLE OF QUESTIONNAIRE

A STUDY ON CONSTRUCTION IMMIGRANTS SPENDING HABIT TOWARDS A FRAMEWORK FOR CONTROLLING LEAKAGES IN MACROECONOMICS MODELLING

Questionnaires

This set of questionnaire has been designed for the purpose of a PhD study to control economic leakage in Malaysia. It is intended to collect data as follows:

a) to study the background of immigrant construction workers
b) to observe the spending pattern of immigrant construction workers
c) to look at the correlation between the wages received and their spending habit
d) to identify the percentage of remittances made by immigrant construction workers against the salary received

There are **3 sections** which represents your **personal details**, your **education background** and your **spending pattern**. Please answer all questions accordingly by ticking (√) the choices given. For questions that needs specification, kindly write the answer in **Ink Pen** and write them **clearly**.

Please answer all questions and return it to the researcher.

Note:
Confidentiality is assured and all information provided will be used to for the purpose of research only. No reference will be made to either individuals or their companies
Your kind attention and time allocated to fill in this questionnaire is highly appreciated.

Yours truly;

Fara Diva Mustapa
PhD Research Student
Department of Civil and Building Engineering
Loughborough University
Leicestershire LE11 3TU, UK

PERSONAL BACKGROUND								
1	Name							
2	Sex	Male		Female				
3	Nationality. Please tick where appropriate	BANGLADESH		CAMBODIA		INDIA		
		INDONESIA		LAOS		MYANMAR		
		NEPAL		PAKISTAN		PHILIPINES		
		SRI LANKA		THAILAND		UZBEKISTAN		
		VIETNAM		OTHERS				
4	Age. Please tick to appropriate categories	18 - 25 old		25 - 35 old		35 - 50 old		
5	Working experience in Malaysia	0 - 1 yr		1 1/2 - 3 yrs		3 1/2 or more		
6	Job Title. Please tick to appropriate categories	Skilled		Unskilled		Semi-skilled		
7	Job Trade. Please tick where appropriate	80/360 Plant Operators		Plasterer		Bricklayer		
		Plasterer's Labourer		Carpenter		Plumber		
		Ceiling/Partition fixer		Power Float Operator/Concrete Finisher		Cladders		
		Roofers		Decorator/Paper Hanger		Shopfitter		
		Driver Labourer		Shuttering Joiner		Foreperson/Supervisor		
		Site Agent		Forklift Truck/Tele-Handler Driver (CITB)		Site Engineer		
		General Labourer/Brush Hand		Skilled Groundworker		Hod Carrier		
		Skilled Labourer		Joiner 1st fix to Final		Fix Steelfixer		
		Assistant Engineer (M&E/C&S)		Jr Architect		Assistant QS		
		Engineer (M&E/C&S)		Architect		QS		
8	Current site location. Please tick where appropriate	City		Sub-urban		Rural		

EDUCATIONAL QUALIFICATIONS							
9	Qualifications. Please tick accordingly	No formal education		Primary School		Secondary School	
		BSc		BA		A Level	
		GCSE's		MSc		MA	
		PhD		Others			
SPENDING PATTERNS							
10	Average monthly income in MYR. Please tick accordingly.	0 - 500		501 - 1000		1001 - 1500	
		1501 - 2000		2001 - 2500		2501 - 3000	
		3001 - 3500		3501 - 4000		4001 - 4500	
		4501 - 5000		5001 - 5500		5501 - 6000	
		6001 - 6500		6501 - 7000		7001 - 7500	
		7501 - 8000		8001 - 8500		More than 8500	
11	Do you remit your income to your home country? If yes, please tick 1 (ONE) which represents the most equivalent. Please proceed to the question No.12 if the answer is No.	1 - 3 %		4 - 6 %		7 - 9 %	
		10 - 12 %		13 - 15 %		Others. Please specify	
12	Do you stay at Kongsi House? If your answer is YES, please proceed to question No. 15.	Yes		No			
13	Do you rent a house in Malaysia? If no, please proceed to questions No.15. If the answer is yes, please tick 1 (ONE) which represents the most equivalent basis of payment	Weekly		Monthly		Contract basis. Please specify the duration	
14	How much do you pay for the rent in average?	0 - 100		101 - 150		151 - 200	
		201 - 250		251 - 300		301 - 350	
		351 - 400		401 - 450		451 - 500	
		501 - 550		551 - 600		More than 600	
15	Do you share the house with other colleague?	Yes		No			
16	How many people live in that house?	1 - 5 ppl		6 - 10 ppl		11 or more. Please specify	
17	Do you own a vehicle in Malaysia? If the answer is No, please proceed to Question No. 20 and if the answer is yes, please tick to the appropriate type	Bicycle		Motocycle		Car	
		Van		Lorry		Others. Please specify	

18	How do you purchase the vehicle?	Cash		Installments			
19	If you pay by loans, how much is the how installment monthly?	Less than RM 500		RM 501 - RM 1000		Others, please specify	
20	Do you pay for your utility bills? If the answer is no please go to question No. 21. If the answer is yes, please tick to the appropriate average of your monthly utility bills	Less than RM 30		RM 30 - RM 50		RM 50 and more	
21	Do you have any dependant in your home country? If the answer is Yes, please tick to the appropriate number of your dependant. If No, please go to question No. 23	1 - 2 ppl		3 - 4 ppl		5 or more ppl	
22	What is/are the age of your dependant? Please specify the numbers of your dependant according to the categories	Less than 6 yrs old ( )		6 -17 yrs old ( )		18 and above ( )	
23	Do you have any dependant with you in Malaysia? If No, please go to question No. 25. If Yes, please tick to the appropriate number of dependant	1 - 2 ppl		3 - 4 ppl		5 or more ppl	
24	What is/are the age of your dependant? Please specify the numbers of your dependant according to the categories	Less than 6 yrs old ( )		6 - 17 yrs old ( )		18 and above ( )	
25	Do you have any mortgages in Malaysia? If the answer is No, please go to question No. 27. If the answer is Yes, please tick to the appropriate column on what are the mortgages for	House		Car		Personal Loans	
		Others, please specify					
26	How much do you pay for it every month?	Less than RM 300		RM 301 - RM 500		More than RM 500	
27	Do you have any mortgages in your home country? If the answer is No, please proceed to question No. 29. If the answer is Yes, please tick to the appropriate choices	House		Car		Personal Loans	
		Education		Computers		Others, please specify	
28	How much do you pay for it every month?	Less than RM 300		RM 301 - RM 500		More than RM 500	
29	How much in average do you spend for rations monthly?	Less than RM100		RM 101 - RM 200		RM 201 or more. Please specify	
30	How often do you go out shopping?	Daily		Every fortnight		Weekly	
		Monthly					
31	What are the items you usually buy? Please tick to the appropriate choices. You may tick more than 1 (ONE)	Dry rations		Wet rations		Clothing	
		Electrical goods		Furniture		Others. Please specify	
32	Please rank according to its frequency for items you spend the most. (10 - for MOST FREQUENT, (2) - FREQUENT, (3) OCCASIONALLY, (2) - SOMETIME and (1) for NEVER	Dry rations		Wet rations		Clothing	
		Electrical goods		Furniture		Others. Please specify	
33	How much do you spend for it in average in every month?	Less than RM 300		RM 301 - RM 500		More than RM 500	
		Less than RM100		RM 101 - RM 200		RM 201 or more. Please specify	

34	Do you have any personal savings?	Yes			No		
35	What type of personal savings do you have?	International Saving Account		International Current Account		Personal (Not kept in bank)	
		Saving Account		Current Account			
36	Do you find it difficult to send your money back to your country of origin? If the answer is yes, please specify why and if the answer is no, please go to question No. 38	Yes. Because of ….					
37	How do you send your savings back to your home country?	Bank			Western Union		
38	Do you intend to reside in Malaysia?	Yes			No		
	Respondent's Signature						
Thank you so much for your time and co-operation.							

APPENDIX 2 – SAMPLE OF INTERVIEW QUESTIONS WITH AUTHORITIES

1		Is there any possibility that the immigrants construction workers might receive minimum monthly wages just like the maids despite them receiving daily wages
2		Would you agree on imposing special kind of tax to the immigrant workers (since now they are not obliged to pay the annual levy.
3		Would you agree on regulating minimum amount of EPF among the immigrant construction workers
4		Are you aware that every employer who employs immigrant workers should contribute at least RM5 monthly to each of their immigrant workers.
5		If not/yes, do you agree to the idea on making the employers contribute to their immigrant construction worker's EPF.
6		Would you agree on a proposal to set minimum standard for immigrant construction workers on-site/off-site temporary accommodation during the construction project.
7		Would you agree on imposing special regulations that requires every immigrant workers to have their own bank account in Malaysia
8		Would you agree on regularising compulsary competency test among immigrant construction workers.
9		Would you agree on regularising compulsary basic training among immigrant construction workers before they are allowed to work at construction sites.
10		Would you agree on enhancing the function of Green Card produced by the CIDB to monitor the income received and EPF contribution among the immigrant construction workers.
11		Could you update me on the latest rules regarding the levy payment among the immigrant construction workers. I read in the news recently that the immigrant workers are not obliged to pay levy. The responsibility has been passed on to their employers. How effective the new regulations is and its implementation among the Malaysian contractors.

APPENDIX 3 – INTERVIEW QUESTIONS WITH IMMIGRANT CONSTRUCTION WORKERS

No.	*Additional Questions from the Questionnaire*	Answers	Remarks
1	*Do you wish to spend more than the average of what you spend now?*		
2	*If your answer is yes, on what items of purchase will that be?*		
3	*If your answer is no, could your explain why?*		
4	*Do you feel that by working in construction line limits you to spend in Malaysia?*		
5	*If you think it is the fault of the construction nature, do you wish that you will be given an opportunity to spend more?*		
6	*Are you happy to life the way you are living right now?*		
7	*Do you wish a better working and staying place while working in Malaysia?*		
8	*If the Malaysian government would like to impose certain tax from your wages, will you accept it with several conditions?*		
9	*If you are threaten by the new tax scheme, will you stay or will you try to abide and adjust your living and remittance style and pattern?*		
10	*Will you be prepared to save certain amount of your wages at a proper channel such as bank to weather down any financial contingency?*		
11	*If the Malaysian government were to impose new rules and regulations regarding special requirements on card identity and certain tax. Will you try and adjust the regulations or will you simply protest?*		
12	*Do you have any recommendations on how is best to make you spend more and save in a proper way while you are working in Malaysia?*		
13	*Do you have any other opinion regarding the issue?*		

APPENDIX 4 - PHOTOGRAPH OF INTERVIEW QUESTIONNAIRE SESSIONS

Accommodation for Immigrant Construction Workers at a Construction Site

Overall view of the rooms

Interior view of the accommodation

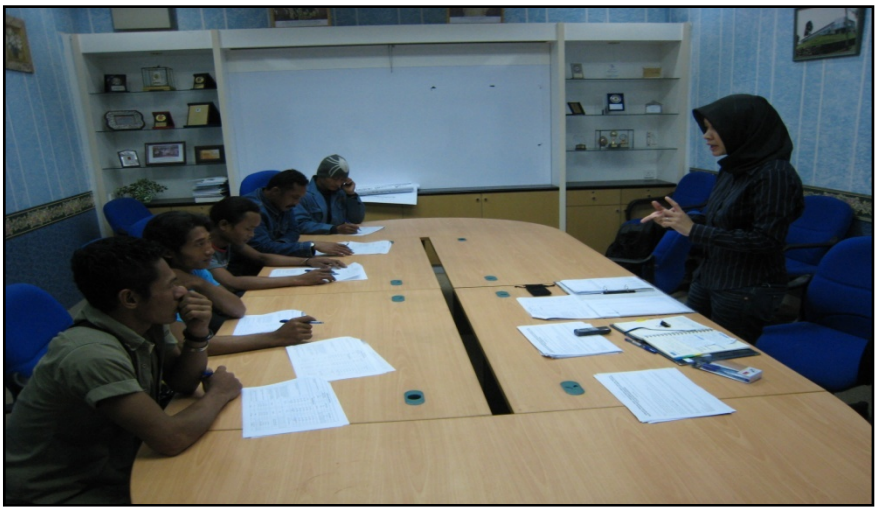
A site canteen providing breakfast, lunch and tea break

Temporary toilets and shower

A number of immigrant workers waiting to be evaluated at ABM, KL

An interview session held at site office with respondents at Penang Port

Survey session with respondents at Alor Star, Kedah site



Interview session with respondents at ABM, Johor Branch Office

APPENDIX 5 - DATA ANALYSIS MAPPING

Data Analysis Mapping
Managing economic leakage from the Malaysian construction industry's multiplier-accelerator model

Interview Questions: JKR

1. Minimum guidelines and standard for on-site accommodation
2. sample of minimum standard in preliminaries
3. percentage distribution of contract value on worker's wages, machineries, etc
4. comment on possibilities to impose minimum standard requirement for on-site accommodation
5. comment on possibilities to include item 4 into the BQ of contract documents
6. comment on possibility to deduct monthly wages among ICW
7. comment on readiness of JKR to impose new regulation on ICW

Interview Questions: Immigrant Construction Workers

1. comment on desire to spend more than current spending
2. what will the items be
3. Explain why?
4. comment on on-site limits current spending
5. comment on construction site affecting spending pattern
6. comment on possibilities of different spending trend at other job/sector
7. comment on satisfaction of current lifestyle
8. Comment on preference to work and stay at better condition
9. comment on tax – to reject or accept with condition
10. any savings at proper channel for contingency
11. Comment on new rules and regulations regarding card identity and certain tax. Accept or reject
12. Any recommendations on factors that promote spending locally and save in a proper channel
13. *Additional opinion*

Interview Questions: CIDB- Megat

1. *Nos of registered ICW according to states in Peninsular Malaysia*
2. *Explanation on data source of current ICW at different states*
3. *the function of CLAB*
4. *comment on measures taken by CIDB to reduce ICW dependency*
5. *Request latest CIDB contract*
6. *comment on possibility to change the current practice of on-site accommodation among the ICW*
7. *comment on possibilities to implement monthly minimum wages to ICW*
8. *Comment on the monthly wage deduction among ICW*
9. *Percentage distribution of contract value for labour wages*

Interview Questions: Contractor

1. *Comment on minimum wages for immigrant construction workers*
2. *Comment on minimum standard for immigrant workers accommodation during contract*
3. *Comment on proposal to implement EPF among immigrant construction workers*
4. *Comment on proposal to include minimum accommodation standard for immigrant construction workers in Document Contract (BQ)*
5. *Comment on possibility of monthly payments to immigrant construction workers*
6. *Comments on problems in managing immigrant construction workers*
7. *Comment on CLAB*
8. *Comment onlevy implementation*
9. *Comment on proposal to ensure all immigrant construction workers to have Malaysian bank account*

Interview Questions: CLAB

1. *explanation about the function of CLAB*
2. *procedure to attain ICW*
3. *procedure to transfer ICW from 1 company to another*
4. *a copy of CLAB profile*
5. *comments on improvement to the system that CLAB bought*
6. *challenges/problems faced by CLAB*
7. *sample form for ICW application*
8. *explanation about the fees charged by CLAB*
9. *explanation of the spending of fees received*
10. *explanation about the promotion made by CLAB to advertise their service*
11. *comment on potential of using CLAB as an entity to manage the monthly wage deduction among ICW*
12. *comments on any minimum standard requirements for ICW*

Interview Questions: KSM

1. *Enquiry on application procedure and partiews local authorities involved*
2. *explanation about responsibility to pay levy*
3. *sample of terms and conditions of work for IW*
4. *enquiry on parties responsible for IW's protection and well-being*
5. *comment on restriction to marry among the IW*
6. *any agreement with labour supply countries*
7. *any difference in the content of the MOU among the labour supply countries*
8. *enquiry on availability of translator*
9. *enquiry on minimum requirements before entry to IW*
10. *who monitor and supervise the Induction Programme for IW*
11. *any exam during the induction programme*
12. *any procedure/regulations to IW upon their arrival in Malaysia*
13. *any inspection made by the MoHR to employers*
14. *what are the normal issues raised at ILO convention*
15. *explain about the 1000 Declarations among ASEAN*
16. *any contract of work applicable to IW*
17. *what is the function of outsourcing agents*
18. *any minimum wages applicable to the IWs*
19. *possibilities to manage economic leakage*
20. *is it possible to tax the IWs*
21. *are there any difference in the minimum wages berween different sectors*
22. *is there any mechanism to compute the actual demand and supply of labour in the country*
23. *possibilities to request assistance in evaluating the future completed framework*

Interview Questions: Local Bank

1. documentations needed to be forwarded to open a bank account
2. the procedure to open a bank account
3. the minimum amount required to open a bank account
4. any differentiation in the procedure to open bank account among local citizens
5. any restrictions on minimum duration of stay in Malaysia to open bank account
6. procedure to close a bank account
7. any problems handling ICW's bank account
8. any preference on best way to open bank account for ICWs
9. documentation on opening bank account in Malaysia as evidence
10. enquire on possibilities of similar procedure among other banks in Malaysia
11. difference between the 2 type of bank account
12. any consultation given to ICW on opening a bank account

Interview Questions: Immigration Department

1. *Latest statistics of ICW according to sectors*
2. *Latest measures & policies taken towards ICW*
3. *comments on possible methods to control economic leakage*
4. *to obtain supporting letter to conduct interview*
5. *request assistance in translation*
6. *comments on tips to interview and obtain info from ICW*
7. *request hard copy/evidence about the management of ICW*
8. *explanation about levy payments & other payments liable to ICW*
9. *enquire on documentations needed to be forwarded to IM by ICW to work in Malaysia*

Understanding the management of immigrant construction workers in Malaysia

- **economic measures**
- **Inflow management**
- **Outflow management**
- **Security management**
- **Well-being management**

Interview Questions: CIDB – Sariah

Latest statistic on immigrant construction workers usage

1. *Latest statistics report about ICW's usage in Malaysia*
2. *acquisition of latest on-going projects in Malaysia (2007-2009)*
3. *current measures towards ICW*
4. *request for supporting letter to conduct interview to be distributed among the randomly selected construction firms*
5. *latest economic report on CI's performance*
6. *discussion on possibilities to permit validation workshop at CIDB office*
7. *enquire on availability of translator*
8. *explanation on levy management (collections & spending)*
9. *comments on control over ICW*
10. *Enquiry on availability of economic experts from CIDB*

2nd interview

1. *explanation about CIPA*
2. *numbers of registered ICW according to states*
3. *Numbers of CIDB branch in Malaysia*
4. *The management and expenditure of levy payments*
5. *explanation about the function of CLAB*
6. *Discussion to implement the monthly wages deduction scheme among the ICW*
7. *Documentation on CLAB's function reports conducted by CIDB*

APPENDIX 6 – SAMPLE OF TRANSCRIBED INTERVIEW

RESPONDENT No.1

This is a recording for mockup interview with En Sungip immigrant worker dated 17th April 2008 and as the following. The questions will be asked in English and later on ill be tranlated into bahasa Malaysia or Indonesia as actually understood by the immigrant workers.

Q1: En Sungip ya, rasa-rasanya soalan ditanya dari soal tanya jawab, rasa-rasanya En Sungip mahu atau tidak berbelanja lebih?

R1: Berbelanja lebih?

Q1: Ya, rata-rata tadi En Sungip katakan berbelanja rata-rata RM500 sebulan

R1: Tak ingin

Q1: Tak mahu?

Q1: Kenapa ya?

R1: Habis susah mahu simpan wang untuk diri sendiri

Q1: Mengganggu pendapatan?

R1: Ya mengganggu pendapatan,

Q1: Mengganggu

R1: Lebih senang dapat gaji disini

Q1: Gajinya dibayar tetap bulanan atau?

R1: Tetap bulanan, senang kerja disini,

Q1: Alhamdulillah la?

R1: Ya

Q1: Tapi memang tidak mahu berbelanja lebih ya?

R1: Tidak

Q1: Kalau gitu, ok, aah, rasa2nya ada tak en sungip merasakan bekerja disini, dalam constructiona, menghalang en sungip untuk berbelanja lebih. atau misalan kata en sungip bkerja di manufacturing ka, mungkin boleh hidup lebih selesa barangkali, jadinya tempat tinggalnya lebih sleelsa

tak keberatan, tak keberatan

Q1: Jadi, mana-mana peluang pekerjaan yang lebih, yg dapat untung?

R1: Ya memang, mana-mana yang menguntungkan

Q1: Rasa2nya mana lebih untung kerja di construction ataupun di manufacuring

R1: Manufacuring itu macam mana ya?

Q1: Bungkus-bungkus, kerja di kilang, di factoring

R1: Suka kerja di construction

Q1: Suka untuk?

R1: Suka kerja construction

Q1: Lebih suka sebab apa? sebab kemahiran?

R1: Ya kemahiran tiada

Q1: Agak-agakkan misal kata kerja di construciton site, ada tak boss bg peluang untuk berbelanja?

R1: Ada, bagi

Q1: Hari apa tu? Macamana kekerapan dia?

R1: Kekerapan, selagi kita mahu , blh keluar beberlanja,

Q1: Jadi tiasa halangan?

R1: Tiada halangan, bila petang ke, beli belanja apa2, senang mahu ke pasar ke mana ke takde kisah

Q1: Kerjanya dari jam berapa hingga berapa?

R1: Dari pukul 8, sampai, kalau OT, sampai pkl 7.

Q1: Itu kalau OT,

R1: Kalau tak OT sampai pkl 5

Q1: Oh, kalau jam biasa smapai jam 5?

R1: Sampai jam 5

Q1: Tapi pkl 12 diberi rehat?

R1: Pukul 12 diberi rehat 1 jam

Q1: 12 rehat 1 jam?

R1: Aah, rehat 1 jam, pkl 10 rehat 1/2 jam, pkl 3

Q1: Oh pkl 10 ada rehat 1/2 jam?

R1: Aah,

Q1: Pukul 3 juga?

R1: Pukul 3 rehat 1/2 jam

Q1: Oh jadinya, adakah masa-masa rehat yg diberi ini yg membuatkan En Sungip suka kerja di construction,sebab rasa bebas?

R1: Bebaslah berbelanja, tiada tekanan, waktu dekat kilang,kan, takde masa di bagi, kalau dekat construction,bila-bila pun mahu rehat, pun bila-bila boleh.. boss bagi

Q1: Oh, boss bg?

R1: Aah, boss bagi

Q1: Jadi kiranya en sungip merasa bahagia bekerja sebagai..

R1: Hahaha, ada sikit kebebasanlah

Q1: Oh, ada kebebasanlah eh, freedom

R1: Erm, saya rasa, macamana... yang selesa? Ha errr...

Q1: Rasa-rasanya dgn keadaan dgn keadaan sekarang, ada mahu penambahbaikan tak?

R1: Mesti mahu penambahbaikan,

Q1: Penambahbaikan dr segi bukan hidup,dari segi mutu kerjanya, suasana kerja

R1: Mestia ada

Q1: Mahu ya

R1: Mesti mahu pembaharuan, mahu pandai terus

Q1: Mahu pandai? Tapi macamana dengan keadaan site, bahaya bukan?

R1: Construction memang merbahaya

Q1: Ada tak mahu kerja di tempat yg kurang merbahaya di masa akan datang?

R1: Kalau tmpt yg kurang bahaya, disini, tinggal lagi 1 tahun la, tgh tahun

Q1: Oh, kemudian bercadang mahu pulang?

R1: Ya mahu pulang

Q1: Misalan kata, saya mahu tanya en sungipla. sekiranya kerajaan malaysia mahu membuat satu undang-undang baru untuk pekerja warga kerja asing, misalan kata sesiapa yg mahu menetap disini, sedikit gajinya diminta diminta potong sedikit,

R1: Dipotong sedikit?

Q1: Ya dipotong sedikit, lepas tu, lepas tu bila En Sungip mahu pulang, baru potongan itu diberi terus untuk pulang, kira dikira simpanan, mahu tak?

R1: Dikira macam insuran la?

Q1: Ya, mcaca insuran, mahu tak?

R1: Boleh juga, mahu2, mahu menetap disini

Q1: sekarang, (sistem) xde kan?

R1: Takde

Q1: Sekiranya, mcm membantu en sungip, mcm kata, ok, daripada gaji, katakan..gaji berapa bulanan?

R1: 1500..

Q1: 1500, katakan daripada 1500 tu, 150 kerajaan malaysia simpan dulu, kira untuk berapa lama En Sungip bekerja, katakan sudah 12 tahun bukan,

R1: Ya, 12 tahun

Q1: Katakan tadi,selama 12 tahun itu, 150 itu, 12 tahun itu, disimpan terus, bila pulang baru duit itu diberi banyak,

R1: *ketawa* itu baik

Q1: Itu senang? suka dgn cara itu?

R1: Senang, suka, dulu ada insuran, tp dia tak keluar

Q1: Oh, x keluar?

R1: Tak keluar, selama 6 tahun tak keluar

Q1: Ah, sebab ini kajian saya, nak membantu warga Indonesia untk membuat itu sistem, jadi setuju?

R1: Setuju, setuju

Q1: Kira dia bagi insuran lah, dan sebagai 1 simpanan

R1: ya, simpanan ya? aah

Q1: Ok, tp ini bukannya, kalau saya bikin sistem ini, memang dijamin wang ini akan diberi semula?

R1: Dikembalikan la?

Q1: Ya dikembalikan,

R1: Itu mahula

q1: Sbb itu mmg duit en sungip

R1: Ya

Q1: terima kasih atas jawapan, ada lg 1,2,4,5 soklan,

ketawa

Q1: jadinya, misalan kata, aah, en sungip misalan kata en sungip diberi 1 sistem cukai, tahu tak cukai?

R1: cukai? tahu

Q1: di indonesia kena bayar cukai tak?

R1: kena bayar cukai, kalau nk masuk sini mesti kena bayar cukai

Q1: oh, jadi kalau masuk sini kena bayar cukai?

R1; ya, bayar cukai

Q1; tapi belum bekerja di malaysia macam mana mau, bisa bayar cukai?

R1: tapi, itu, aah, tak tahulah perintahan mestia ada, mahu keluar negeri kena bayra cukai, mesti bayar cukai

Q1: Oh kena byr cukai, tp misal kata mahu pulang nnti kena bayar cukai tak?

R1: takde

Q1: takde,

R1: Ah, mahu kebarangkatan saja br bayr cukai

Q1: Oh, tp misal kata kerjaan malaysia mengenakan cukai, marah tak?

R1: Kalau byk ya, *ketawa*

Q1: Kalau agak2 dari berapa rata2 dr 1500 gaji diberi,

R1: Ah

Q1: Agaknya berapa yg en sungip sudi bagi?, rasa selesa bg?

R1: Aah, ermmm.... cukai berapa

q1: Kiranya tak suka la

R1: Itu ya,1 hari baru Rm7

Q1: 1 hari 7rm permit cukai

R1: Ya permit cukai, 1 hari 7 rm

Q1: Mmg dikenakan cukai atau?

R1: Mmg dikenakan cukai

Q1: Siapa yg bayar cukai tu?

R1: Yang bayar cukai, tokei separuh, kita separuh

Q1: Oh tokay, kiranya 7rm tu dibagai 2?

R1: Ya ,dibagi dua

Q1: Jadi oh kiranya 3.50 separuh, en sungip , 3.50 tokey

R1: Ya, separuh tokeu,

Q1: Oh, tokey bayar,ah, itu sebnrnya levi bukan?

R1: Ya levi, levi

Q1: Aah levi,

Q1: Aaah rasa2nya kan, erm, mahu ngak kalau en sungip ah, diberi 1 sistem lagi dibuat satu simpaman bank disini?

R1: Simpaanan bank disni?

Q1: Ya, di bukak 1 lg akaun

R1: 1 lg akaun?

Q1: Ya

R1: Itu, aah, mcm mana ya?

Q1: Aah, ssbnya en sungip td ada bank di indonedia bukan?

R1: Aah ada bank di Indonesia

Q1: Sekiranya En sungip diberi peluang utk En Sungip bukak akaun di Malaysia, ada rasa mahu bukak tak?

R1: Sy rasa x mahu

Q1: Tak mau?, kenapa agaknya

R1: Pasal mau balikkan, balikkan kita nanti mau urus sini lg mau masuk, mula-mula, itu yg tak boleh ambil adakan? Bank yg tak blh ambl balance

Q1: Tak bank ini blh amik

R1: Semua blh ambik habis?

Q1: Semua blh ambik, kira buka je dulu

R1: Lepas tu?

Q1: Sekiranya mahu pulang ttp itu akaun,

R1: Aah,

Q1: Blh blk

R1: Aah..

Q1: Mahu tak diberi kesempatan?

R1: Kalau dia punya sisa blh keluar, aah, tp kdg ada balancekan x blh amibil kan?

Q1: Aahah

R1: Kalau sikit x de hallah, kalau byk tiu.. *ketawa*

Q1: Aah, kira, tp lazimnya kalu bykkan En sungip, mmg kita blh keluar itu, ssb itu adalh wang en sungip

R1: Aah, hhmm, kalau blh keluar pun kadang rasa2 nk simpan sendiri jugak

Q1: Aah

R1: Tapi kadang-kadang mau balik, ingat senang kirim sekali, 1 kali

Q1: Tp En sungip tak rasa ke kalau misal kata yg hantar di indonesia hanya keluarga di indonedia saja yg bisa gunakan wang tersebut, sekiranya en sungip buka akaun di malaysia,

R1: aah

Q1: En sungip punya wang lbh selmat

R1: Aah,

Q1: Tp, dan dan en sungip pun bnlh kelaur wang dan belanja di sini?

R1: Kalau di malaysia, tiada siapa yg blh usik itu sy punya wang *ketawa*

Q1: Takde sp yg blh usik

Q1: Tapi dia, aa, kira, sebenarnya, kira dr segi kalau letakn wang dibank, interestnya pun blh dpt juga

R1: Blh cr disinilah, kalau apa2hal sini blh amik senang

Q1: Er,aah, x rase ke itu satu sistem yg membantu?

R1: Itu mmbantula, kadang kita ada bahaya ke, kalau kita ada kecemasan ke

Q1: Aah, kalau kaluau ada kad tu blh kita cucuk duit senang kan?

R1: Aah, itu boleh jugalah

Q1: Kalau ada bank yg blh keluar tu, blh jugakla

Q1: Sekiranya, kan misalan kata, ah, kerajaan malasyia, erm, buat sistem baru dimana En Sungip kena ada 1 kad khas

R1: 1 kad khas?

Q1: Kad identiti, ID kad

R1: Aah, itu mahu tu suda ada

Q1: Itu suda ada?

R1: Ada

Q1: Itu kad yg CIDB keluarkan ke?

R1: CIDB tu kad?

Q1: Yang greeen card

R1: Aah, yg greeen card itu

Q1: Green card..

R1: Green card, itu CIDB punya, lg yg merah itu, yg baru

Q1: Kad yg merah itu? kad merah itu apa ya?

R1: Kad merah itu macam permit itu kad la

Q1: Permit kad? Permit kerja? Dari jabatan imigresen ke?

R1: Dari jabatan imigresen, belum siap sekarang, sekarang baru pembaharuan

Q1: Aah

R1: Pembaharuan sekarang

Q1; Oh, ok

R1; Itu baru-baru di...keluarkan..

Q1: Keluarkan?

R1: Belum siap lg

Q1: Aah, apa fungsi kad tersebut?

R1: Itu mmberi kebebasan kita berjalan la

Q1; Aah, jadi misalan kt 1, selain bw pasport, jd bw kad sahaja

R1: Ya, bw kad sahj

Q1: Aah, jadi dia ada gambar, dia butiran-butiran peribadi

R1: Ya, dia butiraan peribadi ada semua

Q1: Oh, ok, en sungip sy mau tanya pendapatan peribadi ya, sori pendapat peribadi, slh sebut

R1: Yalah-yalah

Q1: Rasa-rasanya ada pendapat sendiri yg En Sungip mahu tambah tanya, mahu tambah drpd soalan-soalan dr saya, ini ckp dgn ikhlas ya, sbb sy nk membantu warga asing

R1: Ya, yela pendapat sendiri?

Q1: Ya, ada rase tak puas hati ke dengan sistem baru, mungkin boleh di bagi satu cadangna..

R1: Macam mana ya? Kadang yang selalu berlaku tu insuran la,

Q1: Insuran?

R1: Insuran kita dah buat, kita dah buat, kadang nk urus tu payah sgt

Q1: Insuran kerja?

R1: Ya insuran kerja

Q1: Insuran kena bikin sendiri?

R1: Macam CIDBla, cidb itu insuran kan? kdg dah buat, dah buat, kadang kita ada 1 kecelakaan, mahu urus itu dia punya claim, mahu claim tak dpt

Q1; Oh, kenapa x dpt?

R1: Lecelhla, dpt pun kdang sikit

Q1: Aah..

R1: Dapat pun lecehla, entah, siapa, entah pihak CIDB ke pihak tauke ke?

Q1: Aah, tapi kira rasa-rasa sebenarnya, kalau diberi 1 peluang, insuran tu jadi mmbantulah

R1; Membantulah, patunya insuran tu mmbantula

Q1: Untuk claim balikla, aah,

R1: Kadang susah tu, masuk CIDB kan, kita dah buat itu kad, lagi pulak potong lagi sekolah, lagi itu ada 1 kecelakaan itu x blh cliam mahu claim leceh

Q1: Tapi dibagi 1 borang la semua isi

R1: Ya,

Q1; Tapi claim tu tak dapat?

R1; Tak dapat, dapat pun kadang separuh, kadang pun baru berapa, 10% paling banyak pun,

Q1; Daripada yg kita claim?

R1; Ya dr yg kita claim

Q1; Ohh... ok selain daripada insuran, apa agaknya mahu cadangan?

R1: Kalau ada itu sistem mcm insuranla, tp yg bertanggunjawab

Q1: Ya yang bertanggungajwb, kiranya kalau kerajaan Malaysia sendiri uruskan, yg saya katakan td mungkin simpannya 150 bulanan,

R1: Aah macam tu, nanti blh ambil balik,?

Q1: Ya berdsedia kalau adalah, sebab saya nak, saya bukannya mahu menghukum, sebab ramai orang yang lihat pekerja Indonesia sebagai 1, fenomeona tidak baik, tapi bagi saya kita perlukan oprg indonesia untuk bekerja,

R1: Ya

Q1: Tapi kita mahu bantu, apa yg kurang, apa yg kurang, apa agaknya selain?

R1: Tempat tidurla, kasi selesa sikitla, kadang kasi tu mcm, selalu tmpt-tempat lain kan, kadang selalu ada control air, ka gas ke, mesti mau control

Q1: Kena control?

R1; Aah kena comtrol

Q1: Agaknya En Sungip mahu tak belanja sendiri untuk bagi tempat tidur itu cantik?

R1: Tak mahu

Q1: Agaknya sebab apa ya? Afgaknya sebab site tu sekejap saja, 12 bln pegi site lain?

R1: Tak tentulah (tempat tinggalnya)

Q1; Jadi kiranya kenaps En Sungip tak mahu belanja lebih? Sebab site tu tak lama?

R1: Ya tak lama, Sekejap-sekejap, setahun, kdg 6 bln

Q1: Aah

R1: Lepas tu dihantar ke termpat lain

Q1: Oh, ok, Saya rasa itu sahaja, ada benda lain?

R1: Itu sahaja

Q1: Itu shj?

R1: Ya

Q1: Terima kasih banyak diatas En sungip, makluman, sebabnya ini akan disusulkan kepada kerajaan Malaysia,

R1: Aah kerajan Malaysia

Q1: Erm, jadi saya mohon tandatangan En Sungip tanda tgn juga lg 1, sebab ini bukti yang saya tanya soalan yg tambahan tadi.

R1: Aah

Q1: Dan tarikh juga ya?

R1: Ya traikh juga

Q1: 11 4 08, terima kasih byk en sungip

R1: Aah, sudah xde apa2 soklan?

-end of interview-

APPENDIX 7 – LIST OF PUBLICATION ARISING FROM RESEARCH

Year of Publication	Title of Paper	Publication Type	ISBN No.	Conference /Convention /Book Name	Author/s
20 – 22 November 2007	Immigrant Construction Workers and Economic Leakages	Conference Proceedings	Glasgow Caledonian University. ISBN No.: 978-1-905866-17-5	The Third Scottish Conference for the Postgraduate Researchers of the Built and Natural Environment (PROBE 07)	Fara Diva Mustapa and Christine L Pasquire
3 – 5 December 2007	Economic Leakage in the Multiplier-Accelerator Model in the Construction Industry Due to Utilisation of Immigrant Construction Workers	Conference Proceedings	Faculty of Built Environment, Universiti Malaya. ISBN No.: 978-983-2085-90-4	Asean Postgraduate Seminar in Built Environment 2007 (ASEAN PGS 2007)	Fara Diva Mustapa and Christine L Pasquire
15 – 17 November 2008	Immigrant Construction Workers' Spending and Remittance Pattern: The Malaysian Perspective	Conference Proceedings	Heriot-Watt University. ISBN No.: 978-0-956167-0-4	CIB W055 (Building Economics) & W065 (Organisation and Management of Construction) CIB Joint International Symposium 2008	Fara Diva Mustapa and Christine L Pasquire