

THE PROVISION OF INFRASTRUCTURE VIA PRIVATE FINANCE INITIATIVE

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Abstract

The infrastructure delivery worldwide has recently shifted to a new paradigm where the government as the public procurer begins to rely on the private sectors' sources in providing assets and services at no cost to the government. This revolution ensues due to the government's dilemma in handling various globalisation issues of the belt-tightening government's budget, the escalated world oil prices, pressure in confronting abandoned public projects, intention in reducing government's financial burdens as well as increased taxpayers' demand on the quality of infrastructure assets and services. Thus, in facing those problems whilst maintaining the control over the infrastructure, an alternative procurement approach known as Private Finance Initiative (PFI) has been introduced. Nevertheless, history has proven that not all infrastructure assets or services are amenable to PFI, indeed experience in other jurisdictions has suggested that in some circumstances infrastructure provided via PFI can lead to poor public accountability, a reduction in competition as well as the development of monopolies. With the facts that different countries practise distinguished concepts and philosophies of PFI for their infrastructure provision based on the nature of their construction industry as well as different countries necessitate diverse types of infrastructure for their nation's development of their, the urgency of determining the principles of infrastructure to be provided via PFI is significant. Therefore, this study investigates the features and characteristics of infrastructure that is suitable to be provided via PFI with the particular references to Malaysia's construction industry as Malaysia's version of PFI emerges in unique forms e.g. DBFO (Design, Build, Finance, Operate), BOO (Build, Own, Operate), BOOST (Build, Own, Operate, Subsidise, Transfer) and BOL (Build, Operate, Lease). Although the Malaysia's version of PFI is theoretically claimed as merely prompt in providing selected economic infrastructure for both physical assets and services, this study demonstrates that Malaysia's PFI is also duly implemented for social infrastructures.

Keywords: Malaysia, Private Finance Initiative (PFI), Infrastructure.

1. Introduction

Infrastructure is perceived as the most talked-about form of construction as it interests society at large (Duffield, 2001). Infrastructure has been delivered through various procurement approaches, namely traditional, design and build, and project management. These procurement approaches have been productively regulated with the intention to suit the current construction practices and infrastructure needs. As the management and procurement of infrastructure construction have changed significantly in

recent years, new practices have been introduced for reasons of efficiency, accountability for performance, productivity and monetary policy. The latest is implementing Private Finance Initiative (PFI), which track records have disclosed that the involvement of private firms in the provision of infrastructure yields environment value and acceptable return for investment.

PFI is favourably implemented worldwide for the provision of infrastructure projects despite industrial, commercial and residential building. Thus, it is unquestionable if the term infrastructure and PFI are often being used simultaneously in various studies in conferring the provision of asset and services to the members of the public e.g. (Grimsey and Lewis, 2002) who carry out research on presenting a framework for PPP/PFI risk assessment, (Hall, Holt and Graves, 2000). who investigate the supply chain in PFI highway construction exclusively in design, build, finance and operate (DBFO) as well as (Clifton and Duffield, 2006) who explore the management and governance of PFI/PPP projects carried out via the integration of alliance contract by investigating the contract structure of both PFI/PPP and alliance as well as some other elements of risk and concession contract features, yet the most fundamental study focusing on the provision of infrastructure via PFI is (Duffield, 2001). who evaluates the ideal and doable framework for privately funded infrastructures project provided via PFI by concentrating on social and economic infrastructure delivery process at the initiation stage in Australia.

In comparison with Malaysia who has recently streamlined the provision of public infrastructure via PFI from the preceding Public Private Partnership (PPP), the growth of studies related to infrastructure delivery especially procured by PFI or PPP is negligible. The scenario has come to worst when the national framework of PFI implementation in Malaysia has not been established as promised by the Economic Planning Unit (EPU) where this most-awaited framework is expected to guide the instigation of PFI in Malaysia's construction industry which is perceived as a similar animal with privatisation and build, operate and transfer (BOT).

Although (Khairuddin, 2007) is remarked as the solely Malaysia's study exclusively deliberates the PFI implementation in Malaysia, this study undertakes insufficient research on the infrastructure aspects of PFI, yet centring more on the concept and method of procuring PFI in construction projects as a whole. Thus, these deficiencies have encouraged this paper to be materialised with the aim to investigate the features and characteristics of infrastructure that is suitable to be provided via PFI with the particular references to Malaysia's construction industry. Prior to the literature review of the features and characteristics of infrastructure, the discussion of PFI with particular deliberation on its concept and philosophy is thoroughly undertaken in reference with the current PFI implemented in Malaysia's construction industry especially in undertaking public infrastructure projects as an attempt to give an in-

depth understanding of PFI to the construction players. Despite the fact that this paper merely provides a literature review of the infrastructure provided via PFI which represents a partial part of the on-going PhD research undertaken on PFI, this review guides the provision of infrastructure project in Malaysia while waiting for the PFI guidelines announced by the EPU. The outcome is beneficial to the government in streamlining the provision of infrastructure projects to the nation towards the viable Ninth Malaysia Plan (9MP) as a part of its prospect realisation towards the Vision 2020.

2. Private Finance Initiative in Malaysia

This section explores the conceptual and philosophical of Malaysia's version of PFI which is perceived as two different animals from the archetypical PFI implemented worldwide. The PFI definition and concepts, characteristics as well as the evolution in the Malaysian construction industry perspectives especially in the provision of public infrastructure are looked at whilst simultaneously some significant reasons supporting the necessitation of PFI in providing public infrastructure are highlighted.

a. *Philosophies*

PFI in Malaysia is defined as "involving the transfer of the responsibility of financing and managing capital investment and services of public sector assets to the private sector including the construction, management, maintenance, refurbishment and replacement of public sector assets, in return for lease charges that commensurate with the level, quality and timeliness of service provision as well as an amount sufficient to ensure returns on investment where the asset and facilities will be transferred to the public sector at the expiry of the concession period" (EPU, 2006). The level, quality and timeliness of service provision are assessed via the implementation of key performance indicators (KPIs).

Although the aforementioned definition of PFI conceptually demonstrates that PFI stands under the umbrella of concession based on Merna, and Smith (1993) who suggest concession as "an agreement based on granting a concession by a principal, usually a government, to a promoter, sometimes known as the concessionaire, who is responsible for the construction, financing, operation and maintenance of a facility, at no cost to the principal, a fully operational facility where during the concession period, the promoter owns and operates the facility and collects revenues in order to repay the financing and investment cost, maintain and operate the facility and make a margin of profit", (Abdullah, 2006) in Yong, and Chew (2006) claims that PFI that Malaysia promoting today is a different animal from the concessions of the past. Nevertheless, the differences conferred are subjected merely on the implementation processes, not on the conceptual and philosophical of PFI.

In terms of the PFI evolution, PFI in Malaysia is rooted from the privatisation of the Forth Malaysia Plan (4MP) Incorporated Policy, the Fifth Malaysia Plan (5MP) Privatisation Policy 1985 and the Sixth Malaysia Plan (6MP) Privatisation Master Plan 1990 (Syuhaida and Aminah, 2007) before being streamlined as the Public Private Partnership (PPP) in the Eighth Malaysia Plan (8MP). Then, in the Ninth Malaysia Plan (9MP), PPP, the broader ownership structure of PFI (Yong, and Chew, 2006) is re-branded as PFI given that PFI is the most frequently used initiative of PPP (Khairuddin, 2007) that specifies a method in providing financial support for PPP (Infrastructure,2007). Based on the fact that PFI is originated from privatisation, PFI in Malaysia context is also perceived as the extension of the previous privatisation implementation (Abdullah, 2006) although theoretically privatisation focuses on the utility and transport sectors as well as on selected services of local governments whilst PFI serves wider economic sectors of utility and transport, education, health, office accommodation, housing, defense equipment and other types of public buildings and infrastructures (Khairuddin, 2007). Nevertheless, the terminology of “extension” here means that PFI continues in providing the on-going privatisation projects where the procurement method and financing tool (if any) of privatisation are concurrently changed to PFI during the transformation period. In addition, the most important is that the continuation of privatisation projects via PFI retransforms the private monopoly from initially public monopoly in the traditional procurement approach to the increased competition of private enterprise (Jomo, 1995) especially the Bumiputera participation.

Having conferred the PFI as a procurement method which is referred to by many e.g. (Construction Industry Council, 1998; Duffield, 2001; Leiringer, 2003; Broadbent and Laughlin, 2000; Syuhaida and Aminah, 2008), procurement method as defined by (Duffield, 2001) is “a method selected to achieve the creation of, or improvement to, an infrastructure asset, which includes, but is not limited to, the arrangements adopted for the design, construction and commissioning of the asset”. It is apparent that there is a strong correlation between PFI as a procurement method and infrastructure asset as the mechanism created or improved by the procurement method, thus the deliberation on the features and characteristics of infrastructure provided via PFI is significant.

b. Concepts

PFI in Malaysia is currently preferred in delivering all kinds of work for the public sector although other countries around the globe have initiated the implementation for other individual’s, private sector’s and semi-government’s projects. Despite providing services of financing, constructing, managing, maintaining, refurbishing and replacing the public sector assets to the government as the client, PFI also provides the associated operational services at no cost to the government. In return, the private

sector receives payment from the end-users, above the price that the public sector could have achieved the work, linked to its performance in meeting the agreed standards of provision (Syuhaida and Aminah, 2008). Therefore, in achieving these win-win situation advantages between the private concessionaire, government as well as the members of the public as the end-users, a detailed and transparent procurement process with competitive tenders that demonstrates value-for-money (VFM) is crucial in increasing the healthy competition among the Malaysian private enterprises.

In attracting the participation of private concessionaires especially Bumiputera, the fair allocation of risks to the party best able to manage and bear which is one of the fundamental features of the archetypical PFI has been revised. Most of the risks including the construction risks are borne by the government or other third parties e.g. EPF as the financier as the government came out with the idea of utilising the EPF in attracting private constructors undertaking public projects although under the pressure of curtailed expenditure. Nevertheless, given that the EPF refuses to expose themselves to any construction risks whilst at the same time provide financial assistance to the private enterprise in carrying out PFI projects, the status of whether the Malaysian employees' money in the EPF will be used or vice versa is vague until the establishment of the PFI guidelines by the EPU.

3. Infrastructure

As the conceptual and philosophical of Malaysia's version of PFI are dissimilar from the archetypical PFI, the features and characteristics of infrastructure provided by the Malaysia's version of PFI is consequently affected to be different. Hence, this section reveals the infrastructure recognised internationally before proceed in depth towards the infrastructure defined by Malaysian version of PFI.

a. Philosophies and Concepts

As infrastructure comprises the capital works required in urban areas for households to have access to major economic and social services (Duffield, 2001), the interest of society towards the improvement of infrastructure has expanded. Many definitions arise in pace with the growth of public awareness e.g. namely "basic services to industry and households (Martini, and Lee, 1996)", "key inputs into the economy (Threadgold, 1996)", "a crucial input to economic activity and growth (East Asia Analytical Unit, 1998)", "a set of interconnected structural elements that provide the framework supporting an entire structure (*PFI*)" etc yet the most prompt definition is proposed by (Johnson, Gostelow, Jones, and Fourikis, 1995) as "the productive capital structures that underpin the economy and society and contribute over time to the achievement of its economic and social goals".

In reference with the economic and social goals to be achieved via the provision of infrastructure highlighted by (Johnson, Gostelow, Jones, and Fourikis, 1995), it is obvious that the infrastructure is categorised into two types i.e. economic infrastructure and social infrastructure. Industry Commission (1993) defines economic and social infrastructures respectively as the networked services that highlight the economic production e.g. hydraulic facilities, highways, transport, communications, water supply, sewerage and energy distribution; as well as facilities that provide community services through quality of life as well as social and equity consideration e.g. education, health, leisure, law and order. Nevertheless, (Duffield, 2001) adds that the economic infrastructure includes the underlying framework of assets associated with the economic production due to the complex interrelationships between the infrastructure impact on macroeconomics, the environment and the provision of services that collectively add to the quality of human lives.

Yet, Duffield (2001) is not alone in perceiving the infrastructure in a different perspective rather than blunt definition as the ABS (2001) also includes another category of infrastructure known as engineering infrastructure, which is defined as “a subset of engineering construction that comprises roads, highways and subdivisions, bridges, railways, harbours, water storage and supply, sewerage and drainage, electrical generation, transmission and distribution, pipelines, recreation and telecommunications”. In accordance with the definition of economic infrastructure and engineering infrastructure, this paper suggests that engineering infrastructure is similar with economic infrastructure given that all forms in engineering infrastructure are conspicuously analogous to economic infrastructure albeit in different perspective based on the mentioned definition. These categorisations of infrastructure are demonstrated in figure 1.

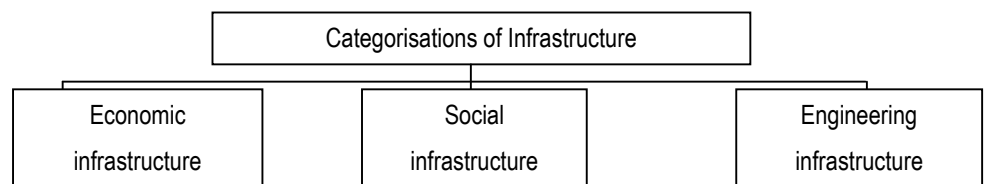


FIGURE 1. THE CATEGORISATIONS OF INFRASTRUCTURE.
Source: Duffield (2001), Industry Commission (1993), ABS (2001)

In addition, as this study suggests that engineering and economic infrastructures are similar despite the brands given by various parties, table 1 shows the types of infrastructure merely under the headings of economic and social infrastructures.

TABLE 1. THE TYPES OF INFRASTRUCTURE.

Infrastructure Category	Economic Infrastructure	Social Infrastructure
Hydraulic services	Water supply Sewerage mains Sewage treatment Drainage	
Energy	Electricity Gas	
Solid Waste disposal	Prescribed waste Clean fill Hazardous waste	
Transport	Toll roads Freeways Arterial roads Local streets Rail Light rail Trams	Buses Shipping Ports and harbours Airports Bridge Tunnel
Communication	Telephone/fax Television/radio Postal/courier	
Education		Tertiary Secondary Primary Pre-school
Health		Hospitals Community health centres Nursing hostels
Community support		Special community/neighbourhood centres Child care Infant health centres Senior citizens Youth centres/facilities Law courts Prisons Museum
Emergency		Police Fire Ambulance
Recreational		Open space Leisure centres Indoor sports Cultural facilities Meeting places
Housing		Public rental Special needs Community
Private infrastructure	Mines Petrochemical facilities Land development	
Military	Bases Hardware and equipment	

Source: Duffield (2001) and Grimsey and Lewis (2002).

b. Infrastructure Provision via the Archetypical Private Finance Initiative (PFI)

The dynamic transformation of infrastructure provision trends worldwide from traditional tendering, contracting out, privatisation to the latest, PFI is taken place due to the fact that PFI is jump-started to balance between the pursuit of profit and the need to provide infrastructure that meets the needs of society in an equitable and sustainable manner (Duffield, 2001). This is in contrast with Industry Commission (1993) who claims that PFI usually delivers physical asset and service of merely economic infrastructure. In addition, current practices also prove that archetypical PFI implements not only the economic infrastructure that emphasizes the economic generation e.g. Highway 431 in Israel, Sydney Airport rail link in Australia, AirTanker provision to the UK's Royal Air Force, Heimlich heating system in Germany, Pekanbaru water supply in Indonesia, Kinnegar sewerage treatment in Republic of Ireland etc, but also the social infrastructure that serves the needs of society e.g. all-women's prison in Ashford, UK, Salford High Schools in UK, Latrobe Hospital in Australia, Victoria Country Court in Australia etc.

TABLE 2. DISTRIBUTIONS OF 474 PRIVATISATION PROJECTS BETWEEN 1983 AND 2003.

Projects	Percentage of Distribution
Transport, storage and communications	12.5
Electricity, gas and water	7.8
Construction	14.6
Manufacturing	14.2
Mining and quarrying	4.2
Agriculture and forestry	7.0
Government services	6.7
Finance, real estate and business services	11.9
Wholesale and retail trade, hotel and restaurant	11.7
Other services	9.5
Total	100.0

Source: EPU (2006)

Nevertheless, given that PFI in Malaysia is still at her infancy stages, it is noteworthy to appraise PFI project in Malaysia through privatisation projects, the origin of the current PFI implementation although privatisation and PFI are two different procurement approaches. The differences are supported by (Khairuddin, 2007) who claims that privatisation centers on the selected economic infrastructure especially the utility, transport and services of local governments as illustrated in table 2 whilst PFI is preferred in undertaking wider economic infrastructure. Again, the claim by (Khairuddin, 2007) upon Malaysia's version of PFI is similar with Industry Commission (1993) yet distinct from the current PFI implementation worldwide.

Therefore, in reference with the various examples of PFI projects around the globe, the present archetypical PFI is appeared as apt for all kinds of infrastructure. Although archetypical PFI provides all

kinds of infrastructure in comparison with privatisation, yet the current PFI implementation in Malaysia perceived as focusing more on mega projects particularly the economic infrastructure as demonstrated in table 3 (Jayaseelan, 2007). Yet, it should be highlighted that those mega projects fall under the PFI 2 scheme which are funded by private concessionaire or shared by both the government and private (Syuhaida and Aminah, 2008).

TABLE 3. PROJECTS UNDER PFI 2 SCHEME.

Projects	Cost
Ipoh – Padang Besar double-track railway	RM 10 billion
Penang monorail	RM 1.2 billion
Extension of existing LRT line	RM 10 billion
High-speed train to Singapore	RM 8 billion
River cleaning project	RM 1 billion
Inter-state water transfer	RM 4 billion
Hulu Langat water treatment plant	RM 5 billion
Bakun undersea cable	RM 9 billion
Trans-peninsular oil pipeline	RM 25 billion
West-Coast Highway	RM 3.05 billion
Total	RM 76.25 billion

Source: Jayaseelan (2007)

Thus, having conferred the PFI 1 scheme which is financed by the government e.g. via the Employees Provident Fund (EPF), Pensions Trust Fund (PTF) etc, most of the projects are categorized as the social infrastructure i.e. 93.5 percent of the total RM 20 billion provided under the 9MP, whereas merely 6.5 percent is categorized as economic infrastructure. The expenditure of the government for the PFI 1 scheme under the 9MP is shown in table 4.

TABLE 4. PROJECTS UNDER PFI 1 SCHEME.

Types of Infrastructure	Projects	Cost
Social infrastructure	Education	RM 9472 billion
	Housing	RM 1565 billion
	Healthcare	RM 878 million
	Defense	RM 1582 million
	Internal security	RM 2694 million
	General services	RM 2515 million
Economic infrastructure	Transport	RM 634 million
	Agriculture	RM 350 million
	Commerce	RM 310 million
	Total	RM 20 billion

Source: EPU (2006); Jayaseelan and Tan (2006)

Therefore, as Malaysia's PFI emerges in two schemes i.e. PFI 1 and PFI 2, the types of infrastructure provided are influenced by the parties involved in financing the infrastructure projects. This is due to the fact that different parties have different interests while undertaking a particular project e.g. the private

concessionaire prioritises the shareholder's interest of maximizing the profit generated from the investment (Chen, and Subprasom, 2007) whilst the government aims in reducing their burden as public procurer, optimally utilising the belt-tightening budget, encouraging Bumiputera participation in undertaking public projects, confronting the high-profile problems of privatisation projects via Incorporated Policy 1983 - Privatisation Master Plan 1990s, streamlining the national economies and ultimately providing the infrastructure that is value-for-money to the end-users (Syuhaida and Aminah, 2008).

4. Conclusion

This paper attempts to investigate the features and characteristics of infrastructure that is suitable to be provided via Malaysia's version of PFI. Although both the archetypical and Malaysia's version of PFI are claimed by many e.g. Industry Commission (1993) and (Khairuddin, 2007) as appropriate in delivering selected economic infrastructure for both physical assets and services, this study demonstrates that Malaysia's PFI is also duly implemented for social infrastructures.

Nevertheless, the selection of the types of infrastructures is essentially affected by the PFI schemes in Malaysia which are distinctive from the archetypical PFI. It is concluded that the PFI 1 scheme funded by the government is preferred in providing social infrastructure whereas the PFI 2 scheme financed by either the government or private concessionaire or mutually government and private sector is ideal in delivering economic infrastructure although both schemes can undertake all kinds of infrastructures.

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