Tendering Issues and Improvement in Public Infrastructure Project Through Public-Private Partnerships (PPP)/ Private Finance Initiative (PFI)

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Abstract. In recent year, there have been an increasing market of Public-Private Partnerships (PPP)/Private Finance Initiative (PFI) for the development and operation of public infrastructure projects in Malaysia. The aim of PPP/PFI is to encourage greater participation of private sector in delivering public services. However, due to lack of knowledge on PPP/PFI procurement bring it being criticized especially in tendering process. Some PPP/PFI projects are the subject of lengthy political debate before they go to tender, causing further delay in their execution. Though, very little empirical studies have been conducted in the area of its overall implementation and tendering process. Therefore, the objectives of the research are to identify and understand the PPP/PFI implementation and practices in public infrastructure project in Malaysia; to determine issues and challenges in PPP/PFI tendering stage; and to propose PPP/PFI tendering improvement. The overall research process and methodology is divided into three phases: The first phase starts with extensive literature search on the current state and issues regarding to tendering in PPP/PFI public infrastructure projects and analysed the relevant documents of PPP/PFI. Based on these searches appropriate problem statement, research aim and objectives are established. The second phase deals with questionnaire survey. The study mainly focuses on concessionaires who are involved in PPP/PFI projects in Malaysia. The third phase is to synthesize the data collected from the literature review, document analysis and questionnaire survey. Finally, is to report the findings, conclusion, recommendation and further research based on the final outcomes. Expected outcomes from the research project are to provide new insight on the theoretical perspectives on tendering for public infrastructure project through PPP/PFI implementation.

1. Introduction
During the 10th Malaysian Plan, the Government plans to expand the implementation of PPP-based projects to increase the opportunity for the private sector to participate in infrastructure and utility development. This measure will also contribute to the growth of the construction industry, which has contracted in the past eight years. PPP/PFI is now first introduced in Malaysia, but in the United Kingdom (UK) it has been practiced for nearly 22 years. The PPP / PFI concept was introduced in the United Kingdom in 1995 and was used as a mechanism to procure public services from administrative bodies and to exploit the private sector ’s expertise in financing, design, construction and operation during the provision of public services [1]. The PPP / PFI concept was introduced in the United Kingdom in 1995 and was used as a mechanism to procure public services from administrative bodies and to exploit the private sector ’s expertise in financing, design, construction and operation during the provision of public services [1]. The PPP / PFI concept was introduced in the United Kingdom in 1995 and was used as a mechanism to procure public services from administrative bodies and to exploit the private sector ’s expertise in financing, design, construction and operation during the provision of public services [1]. The PPP / PFI concept was introduced in the United Kingdom in 1995 and was used as a mechanism to procure public services from administrative bodies and to exploit the private sector ’s expertise in financing, design, construction and operation during the provision of public services [1]. The PPP / PFI concept was introduced in the United Kingdom in 1995 and was used as a mechanism to procure public services from administrative bodies and to exploit the private sector ’s expertise in financing, design, construction and operation during the provision of public services [1]. The PPP / PFI concept was introduced in the United Kingdom in 1995 and was used as a mechanism to procure public services from administrative bodies and to exploit the private sector ’s expertise in financing, design, construction and operation during the provision of public services [1]. The PPP / PFI concept was introduced in the United Kingdom in 1995 and was used as a mechanism to procure public services from administrative bodies and to exploit the private sector ’s expertise in financing, design, construction and operation during the provision of public services [1].
Several studies have suggested that PPP / PFI has benefited from conventional procurement in the public sector [4]. For instance, a survey of PPP/PFI projects by the National Audit Office revealed that only 22% of projects experienced increasing construction costs after the contract had been awarded [1]. According to [5][4][6], many of the constraints that occur in PPP/PFI projects in Malaysia are due to the failure in the tendering process. It is crucial to adapt the open competitive tendering process to select the most qualified contractor based on their expertise and experience. This problem also arises in other countries like the UK and Australia.

A study conducted by [1][2][7][8][9][5] has shown that the most critical stage in the implementation of PPP/PFI projects is at tendering stage. Among the things that have identified, a lengthy negotiation period for a decision and the high cost involved in the process and the tender price. The very high value of the bidding process is not only a waste of resources that could invest in buildings and services, but also a barrier to the entry of all but a small number of important players into the PFI market. This has led to a reduction in competition in the sector, which many specialists, niches and innovative organizations are now turning away from PFI projects. Furthermore, given the increasing complexity of bids, the time required to undertake the bidding process is now excessively long, with subsequent project delivery delays. The PPP / PFI procurement process requires a complete systematic approach compared to the traditional procurement method.

2. Literature Review

2.1 Issues in PPP/PFI Tendering Process

The tendering process is crucial for the public customer to obtain the value for money in PPP / PFI venture procurement. It relies upon the existence of a competitive bidding process. The guideline of the significance of value for money and whole life costing would require the government to emphasize the best value, and not necessarily the lowest initial price. In this way, the bidders must guarantee that their costs are the lowest for the whole life of the concession, not just at the initial of construction. There is an issue where the contractors often said that high bid costs prevent them from bidding for more PFI projects. There is a healthy number of contractors in PPP/PFI market, but the number of bidders for each project is falling according to Great Britain Parliament: House of Lords [10].

The Construction Industry Council [11] stressed that the bidding for PFI projects is intrinsically complicated and initially expensive. Once the bidder has the experience, the following bids should be cheaper. [12] mentioned that the PFI projects had awarded through competitive bidding. It is a necessity to process in extracting value for money from the PFI. It is significant for both public and private sector partners to recognize the importance of an effective procurement competition as bidding costs for PFI projects. PFI/PPP explicitly designed for large-scale, high-value projects such as road/rail infrastructure networks or hospitals. It is a result of the shift toward privatization. A construction company looking for a long-term involvement needs to formulate a strategy to deliberate over the type of PFI projects to be a focus on.

PPP/PFI tendering procedure is more complicated and costlier compared to traditional process [13]. As an example, in UK’s PFI project tender costs, Design and Build and traditional method reveal high total project cost as compared to PPP/PFI (higher range between 0.48% to 0.62%). The surveys by [9] showed that the bidding cost is a significant problem in PFI. This review additionally upheld by the Contract Journal and Knowles survey in the same year showing that the respondents rated the price and the bidding process in the scale of 8 from 10 for PFI as being unattractive [8] stated that high bidding costs represent opportunities and a high risk of entering the market for companies, act as barriers to market participation and reduce market competitiveness. [14] expect that the bid cost for a PFI project could be as much as £0.5m, contingent upon the project size with even the biggest contractors discouraged. Due to tendering cost risk, most of the contractors have refused to become engaged with PPP/PFI work.

The lengthy procurement period and a high-cost impact on the negotiation of PPP/PFI deals. The average procurement time for PPP / PFI companies in the UK is about 22 months and in Australia between 12 and 18 months [15]. An acceptable transfer of risks, payments and other terms has taken a long time for both sectors. In some cases, the main reasons for the delay were either preventable or could
have been mitigated by the public sector without jeopardizing the value for money, such as insufficient marketing specifications, changes in the scope and design of projects and poor management processes [16]. In most PFI projects, for example in the case of the road project in Scotland, the risk of procurement, time and cost overruns was part of. Due to a large meeting with bidders, the procurement period had to be revised between 17 and 27 months [17] cited that the National Audit Office [18] showed that, due to this and other unforeseen events, the procurement costs for the public sector procurer from £ 1.3 million to £ 2.85 million.

2.2 PPP/PFI Tendering Process Improvement

Many authors have proposed an alternate arrangement of policy to enhance PPP bidding process. All phases of a project need to be overseen well, including the tendering stage. Many authors have reviewed several proposals to strengthen the skills and support of the public sector and to reduce procurement times and costs for both the public and private sectors. These incorporated a more prominent accentuation on the readiness of projects before they go to the market, increased monitoring and scrutiny of projects, including a new stage of investigation before selection of the preferred bidder. PPP procurement development takes long-time than numerous traditional types of procurement imported into the construction industry previously. To reduce the bidding cost which will not affect the value for money of the PPP/PFI projects, there are few strategies recommended for the government.

[19] had classified three strategies as to avoid a premature projects announcement and allowing enough time for pre-tender phase arrangement as a following; a proper PPP market study is required before any project plan is issued. Next, release the demand for a structured proposal once all the necessary preliminary works have completed, so that it can lower the need for addendum and re-bids. Another strategy to be adopted is to reduce the amount of bid design work required by bidders instead of relying more on project requirements.

The government should also assure more financial institutions to participate in PPP/PFI to facilitate the issue of adequate finance facilities faced by the concessionaires. It may divert the scepticism in providing financial support for PFI projects. An education programme on the mechanism of PPP/PFI should be held to all parties to make it more attractive. After so much constraints derived respecting PPP/PFI matters, the best way forward is to improve the PPP/PFI procurement commonly and tendering procedure undoubtedly in the future. According to Reeves et al. [20], the history of PPP procurement in the United Kingdom recommends that efforts to improve the execution of the tendering process be continued since the beginning of the PFI. The official report of the PFI, HM Treasury [16] has, over time, emphasized the objective of strengthening the procurement procedure.

3. Research methodology

3.1 Method of Data Collection

The importance of research methodology is to explain the research process and tools used to analyse its objectives. This research consists, in general, of two mixed approaches, PPP / PFI studies from previous studies and quantitative research. First, the investigation began with a review of relevant literature covering materials from journals, magazines, government agencies, seminar reports, conference proceedings, and web trawl. The purpose of the early literature review was to identify the current status and tendering issues in public infrastructure projects in PPP / PFI. Then a quantitative research approach was conducted.

Quantitative research usually involves the collection and conversion of data into a numerical form, so that a statistical calculation can be carried out and the conclusion drawn. Questionnaires are the most popular method for obtaining the data required for research. The distribution of questionnaires is an example of primary data to strengthen the report findings. This quantitative method will identify problems and challenges in the PPP / PFI tendering phase and propose improvements in the PPP tendering. A flow chart in Figure 1 shows the research methodology process.
3.2 Questionnaire Survey

The objective of the survey is to collect primary, relevant and up-to-date information on the issues and challenges associated with the implementation of the PPP / PFI tendering stage, to support and validate the knowledge gained from the literary review. A questionnaire survey was carried out to gather information from a construction company (concessionaires and contractors), which involve in PPP/PFI projects in Malaysia. They were selected because they have reasonable capacity in both financially and expertise to participate in PPP/PFI projects. In this study, the survey based on four section names Sections A, B C and D. In section A, the questionnaire describes the information of the respondent. Section B requires information related to PPP / PFI projects, knowledge level, and PPP / PFI mechanism. Section C required respondents to identify the issues and challenges reported in tendering for PPP/PFI, common procedures used in tendering for PPP/PFI, criteria and reasons for withdrawal from competition. Section D aims to identify the solution to the problems associated with the tendering procedures for PPP / PFI. Respondents must provide some advice to alleviate the issues. The Likert Scale is used in Sections C and D to ask respondents about their perception of the questions listed in the questionnaire. The researcher uses scale 1 with strong disagreement and scale 5 with strong agreement. Typically, there are five categories of response, from (for example) 1=mighty disagreement to a 5=mighty agreement, although there are arguments in favor of scales with 7 or even numbers of response categories. A total of 100 sets of questionnaires have been distributed to the correspondents. All the questionnaire was spread via email and manually send to concessionaire and contractors office. Among 100 set that had been distributed, only 30 sets were duly answered and given back. One of the limitations of this research is there is a small scale of respondents that involved in PPP/PFI projects which not all of them were exposed with the implementation of PPP/PFI.

The software used in the data analysis is version 22.0 of the Statistical Package for Social Science (SPSS). Some results derived from the SPSS software questionnaire analysis, such as descriptive statistics; bivariate statistics; prediction for numerical results; and prediction for group identification. In this research, even many features can access from the method, only frequencies statistics, cross-tabulation and descriptive have been used to obtain the frequency of problems and improve the tendering stage for public infrastructure projects in PPP / PFI.
4. Research Findings

4.1 Issues and Challenges in PPP/PFI Tendering Process
Although all the respondents aware of the benefits and advantages of adopting PPP/PFI in managing public infrastructure project tendering, still PPP/PFI must face various challenges in its use. The primary data showed that there is a high degree of agreement on issues such as high tendering costs due to its process, the complexity of the negotiations because it took a long time to conclude a deal, the length of the tendering periods and the high bidding costs. Practically, projects taking the PPP/PFI route are often more involved in public infrastructure projects. It, therefore, requires a more complex form of procurement, technology, and specification which leads to a much more extended period of negotiation before the work begins. Most of the respondents (mean score of 4.51) 85 percent strongly agree that the crucial issues relating to PPP/PFI are high tendering costs and complicated negotiation. This medium is because PPP/PFI is more complicated than traditional procurement and the conclusion of an agreement took a long time. This situation can lead to the unattractive participation of PPP/PFI in the private sector and can lead to less market competitiveness.

PPP/PFI took longer than other types of traditional procurement due to many reasons, including the need for the government not only to identify and articulate a long-term requirement for a short term but also to consider it before calling for tenders. It can also say that the customer must list bids before requesting detailed proposals. Not all bidders will invest in the cost of preparing a comprehensive plan if the field of potential bidders is not reduced. Most of the types used in the Malaysian PPP/PFI tender are invited to tender in comparison with PPP/PFI in the United Kingdom, which use open competition. One respondent indicates that the reason why the Malaysian PPP/PFI tender has adopted such procedures is to reflect transparency and good governance while ensuring that only capable and financially stable firms are involved. It is essential for a concessionaire to have the most appropriate criterion for winning the PPP/PFI tender to meet the specification, to provide a secure financing term and to be a coherent consortium, all of which have been rated by the respondent as strongly agreed.

4.2 Suggestions to Respond to the Issues Discussed
After so many problems and challenges arise about the PPP/PFI issue, this is the best way to improve the PPP/PFI procurement in general and the tendering process in public infrastructure projects. All respondents strongly agreed that enough time and resources should be allocated to procure authorities to develop and prepare their plans before formal commitments are made to attract more private sector participation in PPP/PFI projects. The reasons for this are that the structure of PPP/PFI projects involves various parties carrying out a different project task and risks. It also shows that most respondents also agreed that standardized contractual guidance needs to be developed and enforced. This medium is essential to ensure that every building expertise has clear concepts of PPP/PFI and attracts the PPP/PFI market. A standard guideline should be followed to ensure that all procedures are carried out accordingly so that the products and services provided represent a good value. It will also increase the total number of private sector participants in the provision of public infrastructure. The government should even persuade more financial institutions to participate in the PPP/PFI to alleviate the problem of the concessionaires’ inadequate financing facilities. This factor can probably change the way of being sceptical about financing the PPP/PFI project.

5. Conclusion
The research methodology was established to achieve the research objectives. A set of questionnaires developed in the quantitative method based on the findings from the literature review. The survey was designed using the Likert scale of five ordinal measures of agreement. The results analysed from the collection of data could then be used to justify and validate the facts of the literature reviews. The findings and recommendations are finally made to conclude the investigation.

The methodology approach showed that most of the problems and challenges associated with the implementation of PPP/PFI procurement in Malaysia is concessionaires who are not trained and may not be familiar with the process, detailed and tedious. The tendering procedures faced high tendering
costs and problems that are more complicated than conventional procurement, complexity in negotiations because it took a long time to conclude an agreement and high tender costs. From this study, it can find that the procedures of PPP/PFI tendering process for public infrastructure project might differ from one to other countries that implement it. The method used in awarding the private sector (concessionaire) also can vary due to the complexity of the PPP/PFI projects. Thus, contractors must have an effective plan and mechanism in place to produce a winning bid for PPP/PFI contract. Overall this paper provides the explanation and sound reasoning to the selection of the research methodology. Subsequently, the description as to how the quantitative approach will use in the context of this study through literature review and questionnaire method presented.

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