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Payment issues in Malaysia Industrialised Building System (IBS): A Research Framework

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ABSTRACT

The existence of Industrialised Building System (IBS) has gained much attention from Malaysia government. The utilization of IBS would lead to reducing project cost and time, enhancing productivity and quality of project outcomes, reducing on workers and increasing environmental and construction site cleanness. Since 2003, numerous of effort has been undertaken to promote IBS adoption among the construction players. However, till date the level of IBS adoption among the construction players in Malaysia is still low and far from the government expectation. It is evident that one of the main barriers to IBS adoption in Malaysia is the current procurement and payment mechanisms. This due to the domination of traditional method that's widely been practiced in the development of the IBS project, which is not parallel with the initial concept of IBS. Thus, this study attempt to address this issue and suggest an improvement for procurement and payment process in the current IBS practice in Malaysia.

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INTRODUCTION

Numerous of IBS advantages have been discussed in the construction management literatures such as better construction quality and productivity, increasing the efficiency of construction site clean, reducing cost and project period, increasing project safety and optimized onsite production[2]–[5]. Form literature, theoretically the concept of IBS has promised numerous of advantages and can be considered as an effective solution to construction problems. In addition, much effort has been undertaken by government through its Construction Development Board (CIDB) to promote the adoption of IBS among the industry players in Malaysia. For example is exemption or levy reduction, research and development (R&D) center, training scheme and lesson by government [1], [6], [7]. Furthermore, government has introduce a new policy that highlighted that any government project that worth more than 10 million Ringgit Malaysia need to use at least 70 percent IBS components. On the other hand, based on IBS Roadmap 2011-2015, Malaysia has widely implemented a policy for any project by private project required to utilize at least 55 percent of IBS components. CIDB were given responsibility to monitor the implementation of this policy through Act amendment 520. Despite all the advantages of IBS and government effort in promoting IBS, but the adoption of IBS is still far from mature and still at low level.

Problem Statement:

In IBS literature, some of researchers have discussed IBS in term or overview of IBS in Malaysia [8]; Advantage and disadvantages of IBS in Malaysia [4]; definition and classification of IBS in Malaysia [9]. Furthermore, in order to understand the poor adoptions of IBS in Malaysia, there are also several of researchers

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has investigated the barriers to IBS adoption[3], [7], [10]. However, studies on payment mechanism of IBS in Malaysia are largely neglected.

Based on the concept of IBS, it shows that IBS system has shifted the way of construction process from on fabricated construction component on site (such as beam, wall and roof are cast in situ approached) to manufacturing construction component (off site manufacture) through prefabrication approach. Due to this concept, the strong and established relationship between the stakeholders (clients, manufactured, contractors and etc.) who involve in the project is needed [1], [11], [12]. Unlike, the conventional method, manufacture has dominant influences towards the project development. IBS contractor required to purchase the construction component in advance form manufacture before the actual site progresses [13].

Unfortunately, the current practice in IBS project is an awarded contractor will be paid by client an initial payment between 10% and 25% of contract value [10] Meanwhile, in IBS project, basically manufacture is required 75% of the capital in order to manufacture the IBS component before delivering these components to the construction sites [11]. This current situation is unfair for the both party and negatively affects supply chain of the project. Problem in supply chain such as no payment or delay in payment would also affect progress project. The problem is worsened to small contractors who are not having strong financial background [1]. The needs of new/ improvement in payment mechanism in development of IBS project have been highlighted by few researchers in literature for example Supply Chain Integration Challenges in Project Procurement in Malaysia: The Perspective of IBS Manufacture [11]; Supply Chain for Contractor in Adopting Industrialized Building System (IBS) [12]; The Adoption of Industrialized Building System Construction in Malaysia; The History, Policies, Experiences and Lesson Learn [14] and Industrialized Building Systems: Strategic Outlook for Manufactured Construction in Malaysia [5]. Thus, by considering the aforementioned issues, the objectives of this study is identify as follows;

- To obtain the perception of IBS implementation status in private project
- To identify the barriers and propose a potential solution in IBS adoption on private project, particularly in procurement and payment mechanism.
- To identify critical criteria in the development of procurement systems and payment in IBS project.
- To develop a sustainable business model in the procurement process and payment mechanism of IBS project.

Research Methodology and approach:

This section presents a brief description of research methodology and method for data collection. Research methodology has been defined as "strategies, plan of action, process or design laying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes" [15]**.** Meanwhile, research method is referring to the tools and techniques used for the purpose of data collection and data analyze. On the other hand, research approach is a representation of knowledge claim, the strategies and the method that involves in the study. There are two main research approach which qualitative and quantitative. Each of the approaches has its own advantages and disadvantages. The selection of research approach is depending on the nature of the study. In this research, a mix approach (qualitative and quantitative) of research approach will be used. This is parallel with the research aim which more descriptive and exploratory.

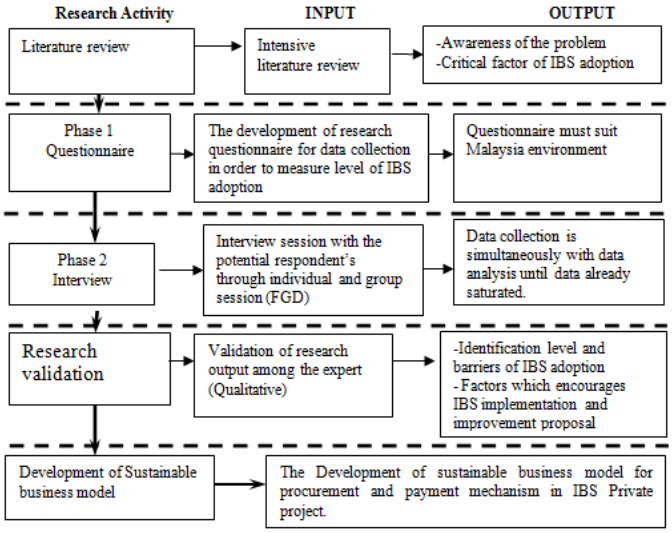

Fig. 1: Research Framework.

In order to illustrate the objectives of this study, a process research framework has been developed. Figure 1 above, shown research framework for the development of sustainable business models in IBS project development. List most of the other research, this study started with the intensive literature review in order to identify the research gap. In this activity, the problem is defined and the scope as well the boundaries of the study are identified.

Data Collection:

In this study, data collection will be categories into two phases. Result of data collection will be analysed through statistical software which SPPS and Atlas 7.1.

- Questionnaire: The first phase is more on quantitative approaches. The development of the questionnaire will be conducted (based on literature) and will be distributed to respondents. The development of the questionnaire will be based on Malaysia environment (culture, social-economic and politics). The questionnaire will consist of respondents demographic, problems and suggestions in IBS project development.
- Interview: Interview is the second phase of data collection in this study, which is a more qualitative approach. Individual and group interview will be deployed among the experience IBS player in Malaysia,

Research validation:

After analysing result thorough SPSS and Atlas 7.0 software, the validation of the result will be conducted through a group interview among the expert of IBS players in Malaysia. Then, the development of the sustainable business model of the IBS project will take place.

Conclusion:

Theoretically, Industrialised Building System should be an effective solution to the Malaysia construction problems such as project delay, overrun cost, foreign workers intensive and low quality and productivity of project outcomes. Research has shown that one significant barrier in IBS adoption is the current practice of procurement and payment mechanism. However, the solution for this problem has largely neglected in literature. It is evident that the current practice of procurement and payment method always negatively influence the development of IBS project, particularly in supply management. Thus, by considering the aforementioned problem, this study attempt to develop a sustainable business model for the IBS project in Malaysia. This study will be conducted within the research framework that has been discussed above. It is expected that this study not only to produce a sustainable business model for the IBS project, but an effective guideline of IBS adoption for private projects.

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