

Adopting a New Housing Delivery System: The Case of Private Housing Developers in Malaysia

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Abstract

For the last 50 years, the housing delivery system in Malaysia has been based on the Sell Then Build or buying off the plan system. A host of problems, such as abandoned projects, unsold housing, late delivery, and shoddy workmanship, have put pressure on the industry to implement of a new housing delivery system to achieve better housing quality and to promote greater prosperity in the housing industry. The aim of this paper is to examine the factors that affect the adoption of a new housing delivery system (the Build Then Sell system) from the viewpoints of private housing developers. Resource-based Theory was utilized in order to examine the capability of private housing developer firms to adopt the BTS system. Possible factors that affect the different levels of Build Then Sell adoption among housing developers were investigated. Using a structured questionnaire and in-depth interviews, data were collected from housing developers located in the major Malaysian cities; where there are many activities conducted by private developers. The findings indicate that factors affecting the adoption of the new delivery system include firm characteristics, types of financial resources, organizational culture, and developers' concerns. The findings also reveal an important factor to help facilitate the adoption of the new delivery system.

Keywords

Housing delivery system, Housing developers, Build then sell, Adoption of new product

1. Introduction

The Build Then Sell (BTS) system essentially means that housing developers must complete their housing projects, including construction of the houses, before they begin selling the unit. Selling cannot begin until the certificate of completion and compliance (CCC) is issued. In other words, the selling activity would only begin after the housing units are completed with the strata title and CCC issued. This will give interested purchasers the chance to look at the housing before committing themselves to purchase the house.

BTS contrasts sharply with the existing Sell Then Build (STB) system. In the STB model, a potential buyer signs a Sale and Purchase Agreement with a developer, usually paying 10% of the sale price before construction begins. The buyer then makes periodic progress payments, normally through a loan arrangement with a bank, as construction continues. Progress payments are released by the bank directly to the project's Housing Development Account when the architect certifies that the house has reached certain stages of completion. Under STB, buyers fund a significant portion of the construction costs of their new homes. Thus, developers generally need very little capital before beginning a project, particularly if no land-holding costs are involved.

In the past two decades, there have been many aborted attempts to institute BTS in Malaysia. The Malaysian government was, and still is, interested in introducing BTS to the property development industry. BTS received unflinching support from the likes of the Federation of Malaysia Consumers

Associations (FOMCA) and the National House Buyers Association (HBA), which makes the case for BTS implementation stronger than ever. A large number of property developers, however, do not welcome BTS implementation. They argue that BTS cannot exist in the Malaysian economic system, as the country's property market has yet to mature and there is still a strong demand for housing. They claim that BTS could only work if the banking sector in Malaysia is willing to accept a higher risk. They noted out that banks will not finance the BTS system, as it is not their policy to finance the construction of buildings that have not yet been sold (New Straits Times, 2005). Nevertheless, amidst this resistance, the Government approved the implementation of the BTS system along with the existing STB system in June 2006. These systems will co-exist in the residential property development industry. To encourage developers to adopt the new system, the government is offering incentives that include fast-track approval for their projects, waivers to developers concerned by having to deposit RM 200,000 with the Ministry of Housing and Local Government before development, and an exemption on stamp duties. Developers who adopt BTS will also be exempted from having to build low-cost housing (The Star, 2006).

After a long debate on the BTS system and much talk about the system's benefits to the industry as a whole, this paper examines the factors affecting the adoption of BTS from the viewpoint of private housing developers. First, it discusses the research framework, which is based on resource-based theory, which is followed by an explanation of the field-work and data analysis methods. The findings from the analysis and a brief discussion are presented at the end of the paper.

2. Research Model

Resource-based Theory (RBT) is used to examine developer firms' resources so as to assess the capability of private housing developer firms to implement the BTS system. In the view of many researchers in various disciplines (Lee *et al.*, 2001; Makhija, 2003), including researchers in the construction industry (Wong, 2003; Ho and Abdul Rashid, 2006), RBT can be used to assess a firm's capabilities and performance with regards to competitive advantages and new ventures. Thus, RBT is considered suitable for use in analysing developers' firm resources for implementing the new BTS system. The resource-based literature focuses on valuable resources possessed by the developer, especially financial resources and firm characteristics. Financial resources and firm size characteristics are tangible assets that Barney (1991) includes in the term "organizational resources." Most studies that utilize RBT focus on these particular resources, which are within the control of a firm and influenced by a firm's competitiveness (Smith *et al.*, 1996). Firm-specific resources, such as financial and other tangible assets, are considered as important factors that help explain a firm's ability to change and succeed in a market (Olavarrieta, 1996). The following section explains firm size characteristics and financial resources in greater detail.

Firm size is one of the main characteristics of companies and enterprises. Firm size is usually categorized by the number of full-time employees in the firm, turnover, and paid-up capital. In terms of full-time employees, most researchers conclude that micro firms have fewer than 10 full-time employees, small firms have 10 to 50 full-time employees, medium firms have between 50 and 250 full-time employees, and large firms have more than 250 full-time employees (Henriksen, 2006). In terms of turnover, small firms have less than RM10 million, and medium firms have RM10-25 million (Ramayah *et al.*, 2001). In terms of paid-up capital, small firms have less than RM5 million, medium firms have RM5-20 million, and large firms have more than RM20 million (Ramayah, 2000). It has been argued that different sizes of developer firms have access to different forms of finance. Hamilton and Fox (1998) found out that the financing preferences of small firms were primarily their own money (e.g., personal savings and retained earnings). After personal financing, small firms' preferences were, short-term borrowings, long-term debt and, least preferred of all, the introduction of new equity investors. Dowdeswell (2004) concluded his research by suggesting that a developer, regardless of size, should always consider taking on debt to purchase and build out sites. By borrowing, the developer can maximize their return on the capital employed in the business. On the other hand, Ooi (1998) argued that large firms do not need to depend highly on external funding. These firms can employ more debt, since they are more likely to have high tax burdens and low

bankruptcy risks. Hence, in the BTS context, it can be argued that firms (especially large firms), who are less depending on external funding, are more likely to adopt BTS.

Types of financial resources chosen by developers to finance housing projects are believed to have influenced developers' decisions to adopt the new BTS system. There are two types of financial resources; namely, internal and external financing (Tan, 2005). As the new system requires developers to self-fund the development project using internal and external financing (excluding end-finance, which plays a major role in funding development projects under the current STB system), developers must search for other financial resources to replace end-finance in order for them to carry out projects successfully. Therefore, dependency on the type of financial resources will affect developers in implementing the BTS system. If developers rely more on external financing, they should be less likely to adopt BTS. Conversely, if developers rely more on internal financing, they should be more likely to adopt BTS.

In addition, past studies have shown that there may be other variables in addition to firm resources that have a positive relationship with the decision to adapt to new things. However, for the other variables, studies that examined these relationships have yielded inconclusive findings. The current research is motivated by a desire to see whether there are other variables that influence the decision to adopt the BTS system.

3. Levels of Adoption

He *et al.* (2006) divided firms into three groups with respect to the adoption decision: Non-adopters, firms that decided to adopt but had not yet implemented the innovation (planners), and firms that currently used the innovation (adopters). The non-adopters are firms with no action or consideration toward implementing the new system, firms who had some discussions but rejected the idea of implementation, or firms with some consideration but no decisions yet made. In an earlier study by Kolodinsky *et al.* (2004), the dependent variables were measured using a four-point ordinal scale representing respondents' use or intentions to use new technology. The scale characterized intentions to use as: 0 = would never use the technology; 1 = unlikely to use during the next 12 months; 2 = likely to use during the next 12 months; and 3 = currently use. Following the work of previous studies mentioned above, the adoption level in this study is classified into four (4) levels, namely BTS adopters, plan to adopt in 6 months, plan to adopt in 12 months, and non-adopters. The adopters include developers who have adopted BTS, developers who have adopted BTS and plan to adopt again, and developers who have adopted BTS and do not plan to adopt BTS again. Planners include developers who plan to adopt BTS in 6 months and in 12 months time. The non-adopters are developers that indicate they do not plan to adopt BTS.

From the above discussions, the model for this research is developed and depicted in Figure 1. The adoption level of BTS is the dependent variable. The independent variables are grouped into three categories; firms' characteristics, financial resources factors, and other factors. In other words, firms that have adopted the BTS system, firms that have planned to adopt in 6 months or in 12 months, and firms who do not plan to adopt the BTS system could be differentiated by firms' characteristics, financial resources, and other factors.

4. Research Method

Both quantitative and qualitative data collection techniques were used in this study. Simple random sampling was selected for the questionnaire survey. A sample of 300 private housing developers in the three major cities in Malaysia (Penang in the north, Klang Valley in the centre, and Johor Bahru in the south) were chosen randomly from the REHDA Directory. The samples varied in size in each of the three cities. These cities were chosen because most housing development activities by private developers are concentrated in these areas, and property development activities are considerably active in these locations. Other cities in other regions of Peninsular Malaysia are not included due to the relative lack of private development activities, as well as time and budgetary constraints. The questionnaire consisted of 54 questions for respondents over 3 pages. A four-point Likert-scale was

used to force respondents to express their opinion, from which they must choose either a positive or negative direction. The questionnaire was pilot-tested to ascertain content and face validity. Finalized questionnaires were mailed and faxed to the selected developers. There were a total of 30 usable questionnaires received, which corresponds to a 10.9% response rate. Reliability test results indicate that the measurements used in this study are statistically reliable, as no items from the measurement were dropped. Since the response rate is low, in-depth interviews were conducted with developers who gave consent so as to supplement and support the quantitative research. The interview data were transcribed and analyzed manually.

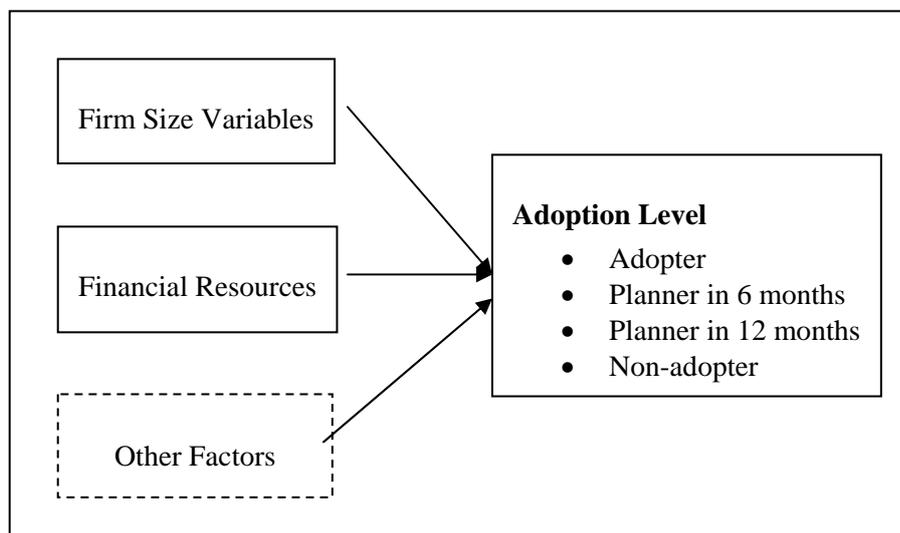


Figure 1: Factors Affecting BTS Adoption

5. Results and Discussion

Of the 30 usable returned questionnaires, there was 1 adopter (3.3%), 3 planners (10.0%) and 26 non-adopters (86.6%). The following sections discuss the results of the study.

5.1 Firm size and adoption level: chi-square test

To test the relationship between firm size variables and BTS adoption, a chi-square analysis was employed using SPSS (Statistical Packages of Social Sciences) software. Chi-square statistical tests were used because the data is nominal and the goal was to determine whether different BTS adoption groups were different from one another. There is another assumption involved in using the chi-square test, whereby each cell is expected to have a frequency of at least five or more cases (Alreck and Settle, 2004). Table 1 shows the chi-square test results of the relationship between BTS adoption-level and firm characteristics variables.

Table 1 indicates that there are significant relationships between firm size characteristics (number of employees, paid-up capital, and total liabilities value) and BTS adoption level. More than 53% of the 26 BTS non-adopters were small firms with 10 to 50 employees. Obviously, this indicates that the small-size developer firms are not able to adopt the BTS system into their housing development projects. Table 1 also shows that firms with lower amount of paid-up capital are not adopting the BTS system, whereby the paid-up capital of 68.0% for BTS non-adopters is less than RM 10 million, 8.0% is RM10-30 million, 8.0% is RM30-50 million, with the remaining 16.0% greater than RM 50 million. BTS non-adoption is also found to be dependent on liabilities. Firms with liabilities less than RM 30 million did not intend to adopt the BTS system. However, there was no significant relationship between BTS adoption status and variables like turnover, asset values, and the ratio of external to internal funding.

Table 1: BTS Adoption Level and Firm Size Variables

Variables	Detail Characteristics	Planners 6 months	Planners 12 months	Non-adopters	Adopters	n	Significance-P
Employees	< 10	0	0	0	0	0	0.002***
	10-50	1	1	14	1	17	
	50-250	1	0	11	0	12	
	>250	0	0	1	0	1	
Paid-up capital (RM mil)	< 10	1	1	17	1	20	0.000***
	10 - 30	1	0	2	0	3	
	30 - 50	0	0	2	0	2	
	> 50	0	0	4	0	4	
Turnover (RM mil)	< 10	0	1	3	0	4	0.511
	10 - 30	1	0	7	1	9	
	30 - 50	0	0	9	0	9	
	> 50	1	0	6	0	7	
Liabilities (RM mil)	< 30	0	1	13	1	15	0.001***
	30 - 50	1	0	4	0	5	
	50 - 100	0	0	4	0	4	
	> 100	0	0	2	0	2	
Earnings to Investment Ratio	0:100	0	1	9	0	10	0.297
	10:90	0	0	3	0	3	
	20:80	0	0	8	0	8	
	30:70	2	0	5	1	8	

Note: *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

5.2 Type of financial resources and adoption level: t-test

In the questionnaire, respondents were asked to rate their degree of agreement with each type of financing in influencing the BTS adoption decision, as drawn from the literature. In order to understand how respondents evaluate how each type of finance influences BTS adoption, means were computed. An independent sample T-test was carried out with the planners and adopters (Group 1) and non-adopters of BTS (Group 2) to see whether perceptions of adopters and non-adopters differed over type of financing in the BTS system. Table 2 shows the mean value and ranking made by the respondents based on their perceptions of the importance of different types of financing in influencing BTS adoption decisions. Table 2 shows that bridging loans (non-adopters=3.02; planners and adopters=3.08) are the most popular type of financing among BTS adopters, planners, and non-adopters. For planners and adopters, bridging loans are followed by external financing (3.07), internal financing (2.88), replacement of end-financing (2.84), and term loans or land banks (2.59). The statistical results reveal that the difference is statistically significant ($p < 0.01$). On the other hand, BTS non-adopters rank replacement of end-financing (2.98) as the major concern behind BTS adoption after bridging loans. This is followed by external financing (2.88), internal financing (2.77), and term loans or land banks (2.74). The statistical results show that this test is also significant ($p < 0.01$). In short, t-tests show significant differences between the perceptions of financial attributes towards BTS adoption by non-adopters and planners and adopters at the $p < 0.01$ level. The differences in various perceptions about the type of housing development finance between the two groups could affect to their BTS adoption status.

Table 2: Significance of Financial Resources within Adopters and Non-adopters

Construct	Non-adopters n = 26		Planners & Adopters n = 4	
	Total mean & p value	Rank in term of their mean	Total mean & p value	Rank in term of their mean
Internal Finance	2.77 .000*	4	2.88 .002*	3
External Finance	2.88 .000*	3	3.07 .000*	2
Term Loan	2.74 .000*	5	2.59 .000*	5
Bridging Loan	3.02 .000*	1	3.08 .005*	1
Replacement of End Finance	2.98 .000*	2	2.84 .002*	4

* p<0.01

To sum up, BTS adoption level is closely related to developers' dependency on end-financing, bridging finance, and internal funds. The results show that, on the whole, external financing, especially end-financing and bridge loans could influence developers' capability of adopting BTS. Strong internal financing could help developers secure bridging loans. Hence, the assumption that indicates that external financing could contribute to developers' BTS adoption capability is supported.

5.3 Other factors affecting BTS adoption level

Follow-up interviews were conducted to further investigate these relationships after the survey research was completed. This is due to the low response rate for the survey, and is the interviews' aim was to validate the research findings. Likewise, the follow-up interviews are believed to provide information on missed events and provide a more complete picture of the issues studied. Respondents from each 'adoption level' who participated in the survey were contacted and asked for an interview. However, only one planner and two non-adopters gave consent to be interviewed.

Our interviews showed that there are other factors besides firm resources that influence BTS adoption among private developers. These factors were classified as organizational culture and developers' concerns. Organizational culture, such as the willingness to take risks, was identified as a factor that could influence the BTS adoption decision. According to Scheinder and Bowen (1993), organizational culture refers to the shared values, beliefs, and practices of people within an organization. BTS is a new housing delivery system for Malaysia and poses a challenge to developers. Members of developers' firms must change their mindset and be supportive of new ideas about work methods or ways of doing business. They must have a culture that is receptive to these risks. Besides, developers who are seeking to adopt BTS must be ready to change quickly in response to the changing needs of their customers. Therefore we may assume that an organizational culture that is optimistic about risk will encourage housing developers to adopt BTS. The interviews revealed that the adopter and planner were willing to try to adopt BTS and support the government's initiatives. They dared to take the risk in hopes of higher profits, and they try this with small units to reduce risks. According to the adopter and planner, the top management will usually play a major role in terms of being directly involved in decision-making. On the other hand, the non-adopter pointed out that they were not willing to take the risk of adopting the new system.

Developers' concerns about adopting the new system was another factor identified by the interviewees with regards to the BTS adoption decision. Developers' concerns can be described as developers' perception of certain issues (Ramayah *et al.*, 2000). Different developers will have different perceptions when embarking on a development project. If the feasibility study shows that the project is viable, they will carry on with the project. Similarly, positive perceptions or optimistic concerns could lead to the adoption of BTS. The interviews revealed that for the planner and adopter, the main types of financial resources were the firms' retained profits, end-financing and bridging loans. They do not rely heavily on end-financing. The firm's cash flow was strong enough to support BTS system. They managed to get early approval, which resulted in early completion and thus reduced holding costs. Projects were in good locations and thus more viable. In addition, the company had a good track record in repaying loans, which won the banks' confidence in releasing more loans. Therefore, they had no hesitation in adopting BTS. On the contrary, for the non-adopter, they relied heavily on end-financing. The company cash flow was not strong enough to support the BTS system and there were worries that cash flow would be tied up. In addition, the firm had some negative perceptions of the BTS system, such as the perception that the BTS system would affect developers' financial liquidity and lead to extra borrowing costs. These negative perceptions kept them from adopting BTS.

6. Conclusions

This study aimed to identify factors that affect BTS adoption among housing developers in Malaysia. The research model included three main variables: firm size, financial resources, and other factors. This model was developed to identify factors that influence BTS adoption. Questionnaire surveys and field interviews were carried out to explore factors that affect BTS adoption decisions among developers. From chi-square tests, it was found that number of employees, paid-up capital, and liabilities influence the BTS adoption decision. Results of t-tests indicate that among all financial resources, bridging finance is found to have positive relationship with firms' BTS adoption decisions, while end-financing and internal financing are found to have negative relationship with firms' BTS adoption decision. The interview results show that adopters and non-adopters of BTS tend to have different perceptions of BTS. This is the main reason for their different BTS adoption levels. From the interviews, organizational culture and the developers' concerns were found to have influenced BTS adoption. The findings also reveal that insufficient funds are the major barrier to BTS adoption, which has led to low BTS adoption levels. The interviews also show there is lack of alternate financing solutions. Therefore, the role of financial institutions is important to ensure that the BTS system is more attractive to developers. There should be a specific banking policy to regulate financial assistance under BTS and make it easier for developers to apply for financing. In addition, supportive financing for BTS developers, similar to the *Istisna'* offered by Islamic banking, should be considered for BTS projects. Additional research is also necessary to improve the existing research model. Gibb (1999), for example, suggests that the factors that influence individual firms to adopt a new concept or product are rarely confined within the firm's boundaries. Therefore, theories other than the RBT must be explored to further expand the number of possible factors that could influence whether or not housing developers will adopt the BTS system. More importantly, there is a need to provide a holistic model so as to assess how far housing developers are 'able' or 'capable' of participating in the BTS system. Change management theory or readiness theory, which includes factors both internal and external to organization, may be useful areas for exploration.

7. References

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