SUCCESS FACTORS OF HOUSING DELIVERY SYSTEM AMONG MALAYSIAN DEVELOPERS

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Abstract

The housing industry in Malaysia has been practicing Sell Then Build system since decades ago, where developers will collect payments in stages from buyers even during a construction period. However in 2007, the government has introduced the Build Then Sell System (BTS), which allows buyers to buy a house after completion of the construction project to reduce the existing problem in STB. This research emphasis the understanding of the success factors and the importance of the success factors in housing delivery system. Thus, this research seek to achieve two objectives; 1) To determine the success factors in housing delivery system; 2) To determine the importance of the success factors of housing delivery system. In other to achieve the objectives, survey questionnaire was conducted to a sample size of 232 developers. Accordingly, the sample size was determined using Krejcie & Morgan (1970) formula where a questionnaire survey approach was adopted for the study. The data generated from the survey were further analyzed using frequency analysis and Relative Importance Index (RII). The findings of the survey indicated that the most important factors for successful housing delivery system namely financial factors, then followed by economic, environmental & social factors, project management factors, communication factors, enforcement factors and lastly legislative factors. The article then makes a recommendation that the financial institutions should provide more financial loans for every qualified developer in order to make the housing delivery system more successful where both the buyers and developers will have the same win-win situation. Aside from that, the government should also tighten the enforcement measure in the construction sector so that the house will be delivered on time without losing too much time where it will cause a defect on the housing quality.

Keywords: *Housing Delivery System, Success Factors, Construction, Relative Importance Index*

1.0 INTRODUCTION

Each country has housing delivery system, which adopted the concept varies according to each country's suitability. There is no specific definition found to clarify the true meaning of housing delivery system. For the housing market the delivery system is a process that allows people to meet their basic needs of shelter will involve many processes from the selection of site, the financial support, the cash flow design, house construction, and the negotiation process of buying and selling (Ahlbrandt, 1974). The main components of the delivery system are the housing authorities, developers, and also the buyer association. The delivery of housing is an interrelated activity where it consists of the component design, the management and the purchase of land, the supply of electricity and water, the sanitation, identifying the process of the construction and also the house distribution process (Tomlinson, 2011**).** The efficiency and effectiveness of the housing delivery system will provide the housing market with affordable housing units to the society. Although different country will implements different housing concepts, however the main goal is to ensure that the people will get the shelter they demanded, where the government has play a role in identifying the importance, benefits and risks involved in the housing delivery system (Tan, 2010).

Each country will adopt the different concept of the housing delivery. The purpose of establishing the delivery system is to ensure that every individual has a home that is affordable and at the same time also, will create a situation where the developer will benefits from the

activity must also have to be taken into account. The delivery system practiced in many developing countries such as Singapore, Australia and Hong Kong is similar to Build Then Sale, which gave priority to the completion of the house before the buyer make full payment to the developer (Mustafa and Ghazali, 2012). BTS in Australia and Singapore are same with BTS in Malaysia where the buyers need to pay 10% of down payment while signing the Sale and purchase agreement, while the other 90% is when the projects are completed. The Singaporean had an advantages because buyers can have 6% of down payment from centre depository fund (CPF) and the other 4% is from the buyers itself. But at Hong Kong, buyers need to pay 30% of down payment while signing the Sale and Purchase Agreement and the other 70% after projects is completed.

According to Thing (2012), the housing delivery system practice in Malaysia has experienced several changes in the concept of service where Sell Then Build (STB) system that was implemented over four decades, had to be replaced by the Build Then Sell (BTS) system recently introduced in 2007. In 1980, the BKJ concept was presented by the Federation of Malaysian Consumer Association (FOMCA) due to the problems faced by home buyers. Subsequently, in 1981, the Malaysian Housing and Local Government Minister were pleased to organize a national seminar on the implementation of BKJ in Malaysia. This concept has also been proposed by the Housing Developers Association in 1986 as one of the solutions to abandoned housing.

In 1992, the BKJ concept was officially introduced by the Local Government Housing Ministry through its seminar in Kuala Lumpur. The government approves the BTS, reflected in the Seventh Malaysia Plan presented in the House of Commons by then Prime Minister Tun Dr Mahathir Mohamad in 1996. The first company to use this concept is a SHL Consolidated Developer Bhd in 1999. Then in 2004, Tun Abdullah Ahmad Badawi suggested the implementation of the BKJ concept. After that, in the 2012 budget, Malaysia's prime minister Datuk Seri Najib Tun Razak has informed that Islamic banks have agreed to provide shariah-compliant financing and take construction risks for housing of less than RM 600 000. By 2015, the concept The BKJ is expected to be fully implemented in housing developers by the developer , but then the government was withdraw the mandatory implementation of BTS and makes BTS parallel with STB again.

Although the BTS system was introduced, it's still not widely implemented where the developers are still given an option to carry out their housing development (Yusof, 2010). Although there are found to have some differences between the systems, but both of the systems have in common as in terms of their delivery process where buyers still need to pay a down payment of 10% to 30% of the purchase price respectively, while the remaining costs are paid only after the completion of the house. In addition, another similarity are found in terms of the financial support for the developers for the construction process are funded from the financial institutions and not depended on the deposited money paid by the purchaser as was practiced in the STB system (Fauzi *et al*., 2011).

Fauzi *et al.* (2012) said that according to the STB concept, the developers will need to advertise in order to attract buyers to purchase a house that will be built later. If there are interested buyers, both parties namely the developers and the buyers will have to sign a Sale and Purchase agreement and then pay for the down payment of usually amounted to 10% of the house price. After earning a sufficient volume of sales, the developers will start the construction process and the buyer must pay the remaining 90% of the purchase money to the developer in stages until the construction is complete. At this stage usually the developer will need the assistance of a bridging finance (Fauzi *et al*., 2011). There are several processes involves that need the purchaser to go through before he or she can sign a Sale and Purchase agreement, which namely are; ranking of reviews, ratings and book signing, ranked installment payments, home delivery stage (payment in stages) and home delivery (Agus, 2002). But there is still a lot of abandoned housing projects happened as stated by Ministry of Housing and Local Authorities (2006), from 1990 to 2005, there were 261 abandoned

projects with total of 88,410 of houses and involved 58,685 buyers.

From the aspect of the policy, the BTS concept has been stated in the country's housing policy in the 3rd Thrust which explains about the improvement in implementing and ensuring compliance with the home delivery system. All legislation related to housing development should be followed in order to better housing delivery systems. Through the country's housing policy, the coordination and implementation of policies involving various agencies will be enhanced. In addition, the capabilities and efficiency of housing delivery systems through effective monitoring and enforcement such as the One Stop Center (OSC), Certificate of Completion and Compliance (CCC) and the BTS concept will also be enhanced. The policy is to promoting the BTS method in the housing provision system. This shows the importance of implementing the BTS concept in the housing provision system. For housing developers, they need to look and implement all policies that the government has stated to facilitate the development of their housing.

For BTS system has provides two types of variants. The first variants is BTS system 0: 100 where the developer is selling the house when it was completed after the issuance of the Certificate of Compliance (CCC) and the buyer does not have to pay any deposits and make payments progressively at all to developers, while the second variants is BTS 10:90 system where the developers can sell the units before the issuance of the CCC, but the buyers need to make ten percent (10%) down payment and other ninety percent (90%) is paid after the completion of the building (Zairul and Ibrahim, 2008).

The issues arise when the developer has refused to conduct the BTS system. One of the reasons for the reluctance of the developers to implements the BTS system stated by the developer is because they did not want to face the risk of implementing the new system (Mustafa and Ghazali, 2012). The financial risk is the main reason for the developers for not wanting to carry out the BTS system unless there are financial institutions that will provide the loans for the construction of development projects (Yusof, 2012). The developer will not receive any payment or monthly payments gradually to cover the cost of construction or to repay loans from the financial institutions. At the stage of completion, where the house has obtained the CCC will then only be officially launched. The buyer must pay ten percent (10%) of the purchase price upon signing of the Sale and Purchase Agreement and at this point, the return on capital invested is not going to be achieved for the total cost of construction (Shing *et al*., 2012).

Since the developers are still reluctant to implement the BTS system, there must be a solution that can solve the problems of the existing housing delivery from facing the same old problems from occurring. Factors that lead to the success of the housing delivery system has to be identified which can bring a win-win situation for all the parties, especially the developer and the buyer.

2.0 THE SUCCESS FACTORS OF THE HOUSING DELIVERY SYSTEM

A number of studies have been conducted in regard to the barriers and the success factors in the housing delivery system. The available literature review has indicated that the factors such as: the economic, environmental and social factors, the legislative factors, the enforcement factors, the financial factors, the project management factors and the communication factors can be categories as six broad categories that can affect the success factors in the housing delivery system.

The economic, environmental and social is the first success factors for the housing delivery system. The successful delivery was considered by the natural environment of the construction project like a good weather and the sustainability such as the supply of the construction materials that can usually affect the project development (Yusof, 2012; Shing *et al*, 2012). The economy also serves as an important success factors roles which can affect the price of the raw materials, and also the developers financial. The changes of supply and demand in the housing market will muchly depend on the flow of the economic surrounding (Shing *et al*, 2012).

According to Salleh (2006), the developer's barrier to implement the BTS system is because of the legislative factors, therefore, the legislations is another success factors of housing delivery system. The government needs to improve the monitoring system through rules and regulations to avoid the same problems recurring in the development process, the legal requirements of the regulatory authorities are considered as the political environment where it should be tightened through monitoring and enforcement. The legislation on health and safety requirements also has to be considered (Khalid, 2010). The Government needs to be stricter in implementing the law and continued to monitor the construction phase of a newly built house (Fauzi *et al*., 2011), so that the house can be delivered within the timeframe. The government needs to offer incentives to encourage the developers to run the BTS and enact legislation to provide a win-win situation for all the parties, especially the developers and the buyers (Yusof, 2010; Yusof, 2012).

The role of the professional is required to evaluate a newly built house and inform a potential home buyers about the condition of the house before a buyer comes to the decision to buy a home (Fauzi *et al*., 2011) and The buyer must be given a statutory right to terminate the contract if the completed houses do not comply with the specifications and/or specified in the agreement. Furthermore, there is the need for a provision of the law to protect the interests of buyers and the need for a mandatory insurance would be imposed on the developers during an application for the development, and the provisions of a special law in governing the recovery scheme that can avoids the abuses that will harm the welfare of the buyers (Chua and Loh, 1997). With the exemption or reduction of the taxes and the government will assure to expedite the process of the land administration, the faster approval of the development process where the time of construction will become shorter, faster and highly return of investment for the developers (Pinto and Selvin, 1987; Zairul and Ibrahim, 2008).

Based on the enforcement factors, the reason of the unsuccessful of the housing delivery system is of getting the late development approval by the Local Authorities that have because the property prices to rise (Zairul and Ibrahim, 2008). Therefore, the enforcement factors had to be tightened and upgraded. The governments need to fix the vulnerabilities found in the Sale and Purchase Agreement so that it is more transparent and impartial. If this is done by performing alternative arrangements so that the buyer can choose the type of agreement that suits them (Ishak, 2008) and the buyer must be given a statutory right to terminate the contract if the house is not completed in compliance with the specifications and/or specified in the agreement. On the other hand, the developer must have an insurance coverage for homes that were not completed or disability home (Sufian and Sapian, 2009). In delivering a successful construction, it requires an action from all the parties engaged in constructing and maintaining the building (Zainul, 2009) and also will requires a close interaction with all the stakeholders including the enforcement by the government agency (Zainul *et al*., 2013; Hakkinen and Belloni, 2011).

The most critical factors for developers to not implementing the BTS system is found to be the financial factors. The benefits received after the sale is relatively small and price speculations by buyers are high. Furthermore, the risk of BTS is exceeding the profit and there is an issue of cooperation between the developers and the financiers who are reluctant to give financial support to the developers (Mas Aini, 2013). To ensure the successful of the housing delivery system, the situation must be where both sides will win, the financial institution or bank to make changes in their lending policy where intermediate financing should not be based on the sale of housing units but be base rather on the location, design and the development to be carried out against the background of the developer in terms of the technical, management and marketing (Ishak, 2008).

The basis for financial institutions to provide loans to finance real estate projects that are still unsold are to solve the optimal time of sale, and a preparation of the budget for the project development as a basis for the financial institutions to provide loans for the sales (Shing *et al.*, 2012). It is important for the financial institution to provide an adequate interim project financing to the developers who are unable to

generate a cash flow from the project itself until the time of completion (Fauzi and Abidin, 2012; Yusof and Shafiei, 2011), where the role of the financial institutions itself is in supporting the successful of housing delivery system (Yusof *et al*., 2010). The end financier should take part in making sure that the project is completed properly and offer an attractive financial loan and the interest-free loans to the developers (Sufian and Sapian, 2009).

The project management factors involved are the good collaboration between the developers, the architects, the contractors in the construction process, which will avoid the extra cost spent on the project; where the cooperation between the project management is needed to ensure the delivery of the housing can be made in a timely manner, thus avoiding the additional costs of development (Mas Aini, 2013), also emphasizing the efficiency in providing the quality homes with minimum defects (Mustafa and Ghazali, 2012). Furthermore, the construction process according to the specifications will accelerate the setting up process and ensure the housing delivery system is in a set time period (Zairul and Ibrahim, 2008). The team project should also have the ability to handle the unexpected crises at every implementation stages, the availability of the required technology and expertise to accomplish the specific technical steps and recruitment, and the selection and training of the necessary personnel for the team project. The initial clarity goals and the general direction should be clarified and willingness of top management to provide necessary resources and authority for project success (Pinto and Selvin, 1987). All participants must be committed to the concept of planning and control must be able to put the concept into practice, understand the project management process, its purpose and values and to be committed to following the steps and necessary procedures for housing delivery system (Chua and Loh, 1997).

All participants must maintain a good working relationship and must also retain an appropriate interpersonal skill in terms of the communications skill between the client, the project team members and the stakeholder. Another communication factor that should be maintained is to instigate and maintain adequate communication channels among project team, and to ensure there is some way to manage the flow of the information. The suggested methods of transferring the information should also include the drawings, the manuals, meetings and letters. The provision of an appropriate network that is necessary is data to all key actors in the project implementation. The client consultation also needs to include in the communication factors, consultation and action on behalf of all the impacted parties (Pinto and Selvin, 1987; Hwang, 2005).

The project manager is the key person in the project. They must demonstrate multi-dimensional abilities including his interpersonal, technical and administrative skill. The most important element for the project manager is they must clearly understand their role as a project leader, clearly defining their extent of involvement (Pinto and Selvin, 1987; Hwang, 2005; Adjei, 2009). To conclude the success factors of housing delivery system, refer the Appendix that shows the summary from other researcher's discussion.

The review of literature in the first phase of this research focuses on areas related to sell then build system and build then sell system. This eventually leads to the identification of the success factors of housing delivery system. In the initial stage, comprehensive information on the issues of STB and BTS, also the significance of the issues were required to establish the problem statement.

The result of the literature review is a conceptual or an initial finding of success factors of housing delivery system. These initial findings were established through the unification of all barriers and success factors from STB and BTS addressed by various authors. A total of 6 success factor indicators and 31 requirements (unevenly distributed among the eight components) were identified in the literature.

3.0 RESEARCH METHODOLOGY

The study was conducted through survey questionnaires which there are many questions that aim to collect useful information in a fixed area, and will then be analysed and verified statistically. The questionnaire designed in this

research employed is closed ended questions as this type of questions is easy to manage, tabulate and analyse.

The questions were divided into two parts; part one is Respondents Profile, while part two is to validate the success factors of housing delivery systems and importance were second subject of the questions. This part was divided into two segments. Likert Scale is a range of scale in which a respondent is given a set of continuum (extreme to non-extreme) to choose from, in order to measure the level of agreement to a particular statement For the first segment: The success factors were evaluated by respondents in five likert scale which are; 1= Strongly Agree, 2= Agree, 3= neutral, 4= Disagree and 5= Strongly Disagree. The second segment is the extent of requirements applicable in the housing delivery system which indicate scale 1= very important, 2= important, 3= neutral, 4= not important and 5= very not important. Cronbach's Alpha Reliability Test was used as a reliability technique in this research because Cronbach's Alpha is often used when Likert-type scales are used. According to Table 1, the Cronbach's Alpha Reliability Test indicates that the scale is reliable with the value of alpha more than 0.70, implies that all components are statistically reliable and the questionnaire can be used for the data collection.

Table 1: Reliability Statistics for the Success factors of housing delivery system

Cronbach Alpha	Items
0.826	**36**

The population of this research consist of a group of respondent population, the developers. Based on the information received from REHDA, there are 1267 (by December 2014) registered developers in Malaysia. By using Krejcie & Morgan (1970) formulas (Table 2), the questionnaire administrated to 291 samples. Most commonly used confidence levels to identify the number of samples are 90%, 95% and 99%. For the purpose of this research, a confidence level of 95% is being used to identify the number of samples, but from 291 samples, only 232 were responded. The respondents were contacted through phone and electronic mail prior to the distribution of the questionnaires in order to gain their approval to participate in the survey.

Table 2: Determining Sample Size

Required Sample Size								
Population Size	**Confidence = 95%**				**Confidence = 99%**			
	Margin in Error				**Margin in Error**			
	5.00%	**3.50%**	**2.50%**	**1.00%**	**5.00%**	**3.50%**	**2.50%**	**1.00%**
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	198	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	146	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1000	278	440	606	906	399	575	727	943
1200	**291**	474	674	1067	427	636	827	1119
1500	306	515	759	1297	460	712	959	1376
2000	322	563	869	1655	498	808	1141	1785
2500	333	597	952	1984	524	879	1288	2173

The analysis involves calculating the frequency of responses for the variables (success factors) by simply count how many people obtained each of the scores that it was possible to obtain to determine the rate of recurrence or regularity of support for each of the success factors and to identify the importance of success factors of housing delivery system in Malaysia. Using the result obtained from frequency calculation, the calculation of importance index (Figure 1) was carried out to measure the level of importance of housing delivery system. An importance index measures the relative importance of a variable in comparison to the other variables (Hwang, 2005).

$$\text{Importance Index} = \frac{5n_1 + 4n_2 + 3n_3 + 2n_4 + n_5}{5\,(n_1 + n_2 + n_3 + n_4 + n_5)}$$

Figure 1: Formula of Relative Importance Index

The importance index was carried out using the following formula, where, n_1: very important; n_2: important: n_3: neutral; n_4: not important and n_5: very not important. The level of importance can be divided into four categories namely Very Important, Important, Somewhat Important and Least Important. The process to determine the importance level of housing delivery system are to calculate the mean importance index (M) for each success factors, identifying the first standard deviation (A) which is higher than M. The success factors have an importance index value higher than A is categorised as 'Very Important', while Importance index value between M and A is categorised as 'Important'. After identify the first standard deviation (B) that is lower than M, the importance index value between M and B is categorised as 'Somewhat Important' and importance index value lower than B is categorised as 'Least Important'. The following Figure 2 represents the summary of the process to identify the level of the importance of the success factors for the housing delivery system where SD is standard deviation; Mean refers to mean importance index and I.I. Value stands for Importance Index Value:

By obtaining the level of importance of success factors of housing delivery system, the research objectives was thus, achieved.

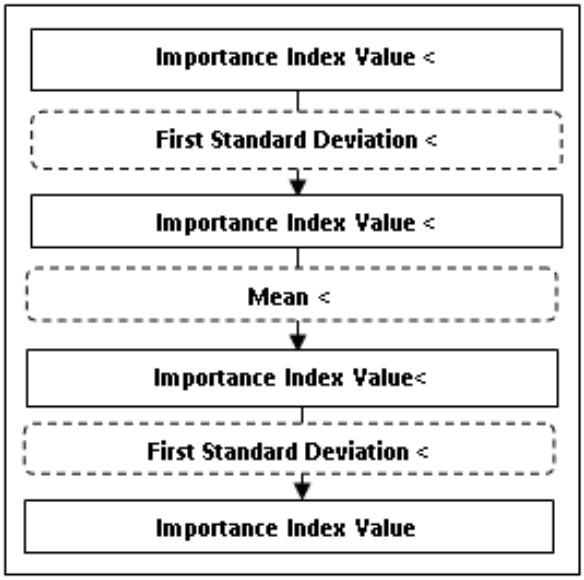

Figure 2: Summary of the process to identify the level of importance

4.0 RESULTS AND DISCUSSIONS

The objectives of this research is to determine the success factors in housing delivery system and to determine the importance of the success factors of housing delivery system. There are six success factors components and thirty-one indicators were identified from the literature and were validated by developer were analysed according to level of importance, achieving the objectives of this research. The discussion of each success factors component and indicators started from frequency until the importance level of success factors applied in housing delivery system in Malaysia.

By using this formula, the result has shown the index of the importance for each variable of the success factors of the housing delivery system. The nearer the value of the importance index to 1, the more important it is for the subject of achievement (Adjei, 2009), which means the nearer the importance index value of success factors to 1, the more important it is for successful of housing delivery system. The

following tables below show the results for each categorized success factor;

According to Table 3, in the economic, environmental and social factors, there is one factor categorised as 'Very Important' with I.I. value 0.937, which clearly shows that this factors will highly affected the price of raw materials and will increase the housing price. The other two factors are categorised as 'Important' is developers financial and 'Least Important' is the changes of housing supply and demand. Their I.I. values are 0.908 and 0.894 respectively.

Table 3: RII for economic, environmental and social factors

Success Factors	RII	Level of Importance	Ranking
Economy and environmental affects the price of raw material	0.937	Very Important	1
Economy, environmental and social affects the developer's financial	0.908	Important	2
Changes in supply and demand affects the economy	0.895	Least Important	3
Mean Importance Index	**0.913**		

Table 4 shows that improve the monitoring system through rules and regulations and Offer incentives to encourage developers to run the BTS are categorised as 'Very Important' with I.I. value 0.821 and 0.794. To Provide insurance for homes that were not completed or if there is any defect in the house with I.I. value 0.504 is categorised as 'Least Important' as the last ranking.

In Table 5, there are three level of importance in enforcement factors component which are 'Very Important', 'Important' and 'Somewhat Important'. *Short approval from the authorities and Monitor the construction phase* are categorised as 'Very Important' and 'Important' with the range of I.I. value between 0.849 to 0.771. Meanwhile, *Monitoring housing prices BTS and Strict enforcement of developers who failed to complete the project* are ranked as 'Somewhat Important' with I.I. value between 0.728 until 0.721.

Table 4: RII for Legislative factors

Success Factors	RII	Level of Importance	Ranking
Improve the monitoring system through rules and regulations	0.821	Very Important	1
Offer incentives to encourage developers to run the BTS	0.794	Very Important	2
Review the policy to meet current market demand	0.727	Important	3
Enact legislation to provide a win-win situation for all parties, especially developers and buyers	0.614	Somewhat Important	4
Improve the flaws contained in the sale and purchase agreement to ensure that it is more transparent	0.578	Somewhat Important	5
Statutory right to terminate the contract (buyer)	0.572	Somewhat Important	6
Provide insurance for homes that were not completed or if there is any defect in the house	0.504	Least Important	7
Mean Importance Index	**0.659**		

Table 5: RII for Enforcement factors

Success Factors	RII	Level of Importance	Ranking
Short approval from the authorities	0.849	Very Important	1
Monitor the construction phase	0.771	Important	2
Monitoring housing prices BTS	0.728	Somewhat Important	3
Strict enforcement of developers who failed to complete the project	0.721	Somewhat Important	4
Mean Importance Index	**0.768**		

Based on Table 6, four factors of the financial factors are considered as 'very important' with I.I. value between 0.960 until 0.948 namely *strong financial; periodic payments; financial flows and financial institutions*. This result shows that the financial has a big role in the success of development projects.

Table 6: RII for Financial factors

Success Factors	RII	Level of Importance	Ranking
The developer has a strong financial resources	0.960	Very Important	1
The buyer makes periodic payments to help developers continue housing construction phase	0.958	Very Important	2
Financial flows both developers and contractors are in good condition	0.958	Very Important	3
Financial institutions can provide sufficient interim project financing to developers who are unable to generate cash flow from the project itself until the time of completion	0.949	Very Important	4
Mean Importance Index	**0.956**		

There is only one level of importance in project management factors component of 'Very Important' in Table 7, which is The *selection of staff in development projects* with I.I. value 0.905, while level of 'Important' with the range of I.I. value between 0.901 to 0.895 and 'Somewhat Important' with the range of I.I. value between 0.893 to 0.891. Meanwhile, *developers to provide support for team development projects* are ranked as 'Somewhat Important' with I.I. value 0.881.

According to Table 8, *Good communications between the developers and the contractors* is the only 'Very Important' level with I.I. value 0.891, while *the project managers provide a clear direction* is under "Important' level with I.I. value 0.862. Meanwhile, *Cooperation in the construction of housing and developer monitor the communication between contractors and sub-contractors* are ranked as 'Somewhat Important' with I.I. value between 0.849 until 0.847.

The summary of overall importance index analysis as shown in Table 9 are, the financial factors, the economic, environmental and social factors, the project management factors and communication factors. Followed by the enforcement factors and legislative factors. Through the literature review, survey and analysis, it can be concluded that the research objectives have been successfully achieved which is to determine the success factors in housing delivery system and to determine the importance of the success factors of housing delivery system.

Table 7: RII for Project Management factors

Success Factors	RII	Level of Importance	Ranking
The selection of staff in development projects	0.905	Very Important	1
The efficiency of the higher authorities in managing construction projects	0.9013	Important	2
Estimate a realistic time and cost	0.900	Important	3
The ability of the project team solve the problem	0.897	Important	4
A clear goal of the project development	0.895	Important	5
Management at the project site in a controlled and carefully flow from the project itself until the time of completion	0.894	Somewhat Important	6
The selection of contractors produce good quality housing and low defect	0.893	Somewhat Important	7
The commitment given by the contractor to complete construction projects on time	0.891	Somewhat Important	8
Developers to provide support for team development projects	0.881	Least Important	9
Mean Importance Index	**0.895**		

Table 8: RII for Communication factors

Success Factors	RII	Level of Importance	Ranking
Good communications between developers and contractors	0.891	Very Important	1
The project managers provide clear direction	0.862	Important	2
Cooperation in the construction of housing	0.849	Somewhat Important	3
Developer monitor the communication between contractors and sub-contractors	0.847	Somewhat Important	4
Mean Importance Index	**0.863**		

Table 9: Summary of overall importance index analysis

Success Factors	RII	Ranking
Economic, environmental and social factors	0.91308	2
Legislative factors	0.65891	6
Enforcement factors	0.767511	5
Financial factors	0.956118	1
Project management factors	0.895359	3
Communication factors	0.862658	4
Mean Importance Index	**0.862658**	

5.0 CONCLUSION AND RECOMMENDATION

The present study outlines the success factors of the housing delivery system in Malaysia. Based on the literature study and from the questionnaire survey of the developers, 42 success factors were identified under six major groups. The results of the survey indicated that the most important, frequent and severe factors that are adversely affecting the successful of housing delivery system was the financial factors as shown in Table 9 above. The major stakeholder in the project development is the developers, who has implemented several types of the housing delivery concept, but where most of the developers practically implement STB rather than BTS system. The financial institution need to provide an adequate interim project financing to the developers who are unable to generate cash flow from the project itself until the time of completion. The second most important factor is the economic, then the environmental and social factors, the project management factors, the communication factors, the enforcement and the least success factor is the legislative factors. It can be conclude that, the legislation factor itself did not promised that the housing will be successfully deliver on time, but the promise must be make to proposed costing and good quality housing to be delivered to the buyer as the end user.

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APPENDIX

The summary from other researcher's discussion.

Success Factors	Indicators	Reference	Total
Econom, environmental & social factors	1) Affect price of the raw materials 2) Affect the developers financial 3) Affect the changes in supply and demand of housing	Inna Didenko & Ivan Konovets (2008), Rohaniyati Salleh (2009), Mohamad Sukeri Khalid (2010), Yap Eng Ho (2013), Abdullah Thalijh & Lailan Mohd Isa (2007)	5
Legislative factors	1) Improve the monitoring system through rules and regulations 2) Offer incentives to encourage developers to run the BTS 3) Enact legislation to provide a win-win situation for all parties, especially developers and buyers 4) The buyer must be given a statutory right to terminate the contract if the completed houses do not comply with the specifications and / or specified in the agreement 5) Improve the flaws contained in the sale and purchase agreement to ensure that it is more transparent 6) Improve the flaws contained in the sale and purchase agreement to ensure that it is more transparent 7) Review the policy to meet current market demand	Siti Nur Fazilah et al. (2011), Azham Bin Hussain (2000), Rohaniyati Salleh (2009), Azima Abdul Manaf dan Suraiya Ishak (2013), Aziam Mustafa and Maznah Ghazali (2012), Nuarrual Hilal (2011), Hamzah Abdul Rahman et al. (2013), Zairul and Rahinah Ibrahim (2011), Yap Eng Ho (2013), Shu Ye Thing (2012), Aziam & Maznah (2012), Azlinor & Abdul Razak (2009), Nor' Aini et. al (2010)	13
Enforcement factors	1) Fast project Approval 2) Monitoring housing development 3) Housing price monitoring 4) Banned the developers who failed to complete the projects	Abu Hassan et al., (2010), Azham (2000), Rohaniyati Salleh (2009), Azima Abdul Manaf dan Suraiya Ishak (2013), Aziam Mustafa and Maznah Ghazali (2012), Nuarrual Hilal (2011), Zairul and Rahinah Ibrahim (2011), Mohamad Sukeri Khalid (2010), Shu Ye Thing (2012), Mas Aini (2013), Norakmarwati Ishak (2008), Aziam & Maznah (2012), Azlinor & Abdul Razak (2009), Abdullah Thalijh & Lailan Mohd Isa (2007), Nor'Aini Yusof & Mohd Wira Mohd Shafiei (2011), Nor' Aini et al. (2012), Nor' Aini et al. (2010)	17
Financial factors	1) The developer has a strong financial resources 2) The buyer makes periodic payments to help developers continue housing construction phase 3) Financial institutions can provide sufficient interim project financing to developers who are unable to generate cash flow from the project itself until the time of completion 4) Financial flows both developers and contractors are in good condition	Siti Nur Fazilah et al. (2011), Siti Nur Fazilah et al. (2012), Abu Hassan et al. (2010), Azham (2000), Rohaniyati Salleh (2009), Azima Abdul Manaf dan Suraiya Ishak (2013), Aziam Mustafa and Maznah Ghazali (2012), Nuarrual Hilal (2011), Hamzah Abdul Rahman et al. (2013), Zairul and Rahinah Ibrahim (2011), Mohamad Sukeri Khalid (2010), Yap Eng Ho (2013), Shu Ye Thing (2012), Mas Aini (2013), Norakmarwati Ishak (2008), Azlinor & Abdul Razak (2009), Abdullah Thalijh & Lailan Mohd Isa (2007), Nor'Aini Yusof &	20

		Mohd Wira Mohd Shafiei (2011), Nor' Aini et al. (2012), Tan Hui Shing (2012), Nor' Aini et al. (2010)	
Project management Factors	1) The efficiency of the higher authorities in managing construction projects 2) The commitment given by the contractor to complete construction projects on time 3) Management at the project site in a controlled and carefully flow from the project itself until the time of completion 4) Developers to provide support for team development projects 5) The selection of contractors Frames produce good quality housing and low defect 6) The selection of staff in development projects 7) A clear goal of the project development 8) The ability of the project team solve the problem 9) Estimate a realistic time and cost	Siti Nur Fazilah et al. (2012), Abu Hassan e. al. (2010), Azham (2000), Inna Didenko & Ivan Konovets (2008), Rohaniyati Salleh (2009), Aziam Mustafa and Maznah Ghazali (2012), Nuarrual Hilal (2011), Hamzah Abdul Rahman et al. (2013), Mohamad Sukeri Khalid (2010), Yap Eng Ho (2013), Aziam & Maznah (2012), Azlinor & Abdul Razak (2009), Nor'Aini Yusof & Mohd Wira Mohd Shafiei (2011), Tan Hui Shing (2012), Nor' Aini et al. (2012), Abdullah Thalijh & Lailan Mohd Isa (2007)	16
Communicatio n factors	1) Good communications between developers and contractors 2) The project managers provide clear direction 3) Developer monitor the communication between contractors and sub-contractor 4) Cooperation in the construction of housing	Siti Nur Fazilah et al. (2012), Abu Hassan et al. (2010), Azham (2000), Rohaniyati Salleh (2009), Hamzah Abdul Rahman et al. (2013), Mohamad Sukeri Khalid (2010), Yap Eng Ho (2013), Mas Aini (2013), Nor'Aini Yusof & Mohd Wira Mohd Shafiei (2011), Nor' Aini et al. (2012)	10