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**QUALITY AND SATISFACTION OF HOUSE OWNERS FOR INDUSTRIALISED  
BUILDING SYSTEM AND CONVENTIONAL BUILDING SYSTEM**

HAIRUDDIN BIN MOHAMMAD

A project report submitted in partial fulfillment of the  
requirements for the award of the degree of  
Master of Science (Construction Management)

Faculty of Civil Engineering  
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MAY 2009

“I declare that this project report entitled “Quality And Satisfaction Of House Owners For Industrialised Building System And Conventional Building System” is the result of my own research except as cited in the references.

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**Kepada ayahanda, bonda dan isteri yang tersayang**

---

*Pengorbanan kalian tiada penghujung  
Jasa kalian tiada terhingga  
Pasti kukenang dan kusanjung  
Temani hidupku untuk selamanya*

*Nasihat kalian pedoman bermakna  
Sayang kalian perangsang inspirasi  
Terima kasih atas segalanya  
Hanya kejayaan mampu dihadiahi*

---

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## **ABSTRACT**

This research was carried out to identify the relationship between quality and satisfaction of house owners for construction systems. Two construction systems will become the dependant variables which is Industrialised Building System (IBS) and conventional system. Additionally, the differences toward quality across years of existence of selected housing areas are taken into consideration. The aim of this study is to collect data by using sets of questionnaires. Then, the correlation analysis are carried out by using Statistical Package for Social Science (SPSS) software and the difference analysis is by using Independent Samples T-Test. The results shows that house owners for both construction systems is highly satisfied with their houses and there is no significant relationship between quality and house owners' satisfaction except for the mechanical and electrical aspect for both construction systems. However, there is a significant relationship between quality across years of existence of selected housing areas. Last but not least, findings from this research may benefited to government agencies such as Construction Industry Development Board (CIDB) and other researchers especially on development of low cost housing schemes.

## ABSTRAK

Kajian ini dijalankan untuk mengenal pasti hubungan di antara kualiti dan kepuasan pemilik rumah untuk sistem – sistem pembinaan. Dua sistem pembinaan telah menjadi pemboleh ubah bersandar iaitu Sistem Binaan Berindustri (IBS) dan sistem konvensional. Tambahan lagi, perbezaan terhadap kualiti merentasi tahun kewujudan kawasan perumahan yang dipilih akan diambil kira. Selain itu, kajian ini bertujuan untuk mengumpulkan data menggunakan borang soalselidik. Kemudian, analisa korelasi telah dijalankan menggunakan perisian “Statistical Package for Social Science (SPSS)” dan analisa perbezaan pula akan menggunakan Sampel Bebas Ujian-T. Hasil kajian menunjukkan bahawa pemilik rumah untuk kedua – dua sistem pembinaan adalah sangat berpuas hati dengan rumah – rumah mereka dan tiada hubungan yang signifikan di antara kualiti dan kepuasan pemilik rumah kecuali untuk aspek mekanikal dan elektrik bagi kedua – dua sistem berkenaan. Walau bagaimanapun, terdapat hubungan yang signifikan di antara kualiti merentasi tahun kewujudan kawasan perumahan yang dipilih. Akhir sekali, hasil kajian ini dipercayai dapat memberikan manfaat kepada agensi – agensi kerajaan seperti Lembaga Pembinaan dan Pembangunan Industri (CIDB) dan penyelidik – penyelidik lain terutamanya untuk pembinaan skim perumahan kos rendah.

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## **CHAPTER I**

### **INTRODUCTION**

#### **1.1 Introduction**

One of the contributors of Malaysian economy is the construction sector, it represent 2.5 % of the gross domestic product (GDP) (CIDB, 2007). Although the percentage is quite small, however construction sector act as a stepping-stone to another sectors such as manufacturing, industrial and even educational sector. It is because they initially prepared the infrastructure in setting up premises for others.

In conjunction with housing development in Malaysia, construction plays an important role in order to deliver good quality housing schemes. Currently, there are two common types of construction systems applied in Malaysian construction environment, which is conventional system and Industrialised Building System (IBS). Both of the systems has its own pros and cons, but available literature indicated that IBS is far better in term of construction cost, completion time and also quality of the end products.

## 1.2 Background of the Research

Recently, many developers of especially involved in constructing housing schemes is focusing on only medium to high cost houses. It is obviously to maximize their profit in term of monetary issue. Thus, Malaysian intention to create adequate and decent shelter to all citizens particularly the low income group (Yuosre. F. Badir *et al.*, 2002) may not be achievable. Furthermore, in order to improve standard of living and quality of life (CIDB, 2007), we should not only looking for an individual that can afford to buy medium to high cost housing unit. Of course the characteristics of the particular houses is far more better than the low cost houses.

Apart from that, there are exists quite a number of low cost housing schemes that utilised both of the construction systems mentioned earlier. Usually, the type of system applied is on conventional construction system, and only several of them is practicing IBS. Although there are no restriction in order to select which systems to apply, the issue that keep on arising is which one is the best in term of quality, money and so on, and which one suited the occupants better.

On the other hand, in line with the Construction Industry Master Plan Malaysia 2006 – 2015, by 2015, the percentage of Industrialised Building System (IBS) used in construction projects should be above 80%. Recently announced, according to Ministry of Finance Malaysia (Surat Pekeliling Perbendaharaan Bil. 7 Tahun 2008), Government decided to use IBS system by not less than 70%. These percentages is not just a numbers, but it is a target that should be achieve accordingly.

### 1.3 Problem Statement

As stated earlier, government has already set their target regarding the construction industry environment in Malaysia. In order to achieve that target, client's satisfaction must be obtained because they are the ultimate users and their feedback is important to formulate a better conclusion (CIDB, 2007).

Unavoidable, house owner's feedbacks is vital to ensure the growth of IBS construction in our country because most of the IBS projects are on housing schemes. There is no point if we are still developing IBS houses if locals are having unpleasant perceptions about the particular IBS construction.

Beside that, nowadays quality became the most important elements in construction industry. Quality sets out how good is an organization in term of developing particular housing schemes. Faizah Abu Bakar (2008) had shown that quality in construction is very essential nowadays as the owners' concern on the goods delivered to them increased. Thus, CIDB has highlighted several research priority areas including quality development and also industrialisation. Moreover, relationship between quality and satisfaction may give impact on the development of future housing projects.

## 1.4 Objectives

The following are three main objectives:

- (a) To identify the satisfaction of house owners in construction systems,
- (b) To identify the relationship between quality and house owner's satisfaction in construction systems,
- (c) To identify the differences toward overall quality across year of existence of selected housing areas.

## 1.5 Hypothesis

The hypothesis of this research are:

- (a)  $H_01$  = There is no significant relationship between quality and house owner's satisfaction for structural aspect in construction systems,
- (b)  $H_02$  = There is no significant relationship between quality and house owner's satisfaction for architectural aspect in construction systems,
- (c)  $H_03$  = There is no significant relationship between quality and house owner's satisfaction for mechanical and electrical aspect in construction systems,
- (d)  $H_04$  = There is no significant relationship between overall quality across year of existence of selected housing areas.

## 1.6 Conceptual Diagram

According to the Figure 1.1, there are four variables involved in this study. The independent variables consist of IBS and conventional. When the dependent variables are quality in construction systems and satisfaction of house owners. Regarding to the both construction systems, there are three construct to be access which are structural, architectural, and mechanical and electrical aspects. Figure 1.1 shows the conceptual diagram for the purpose of this study.

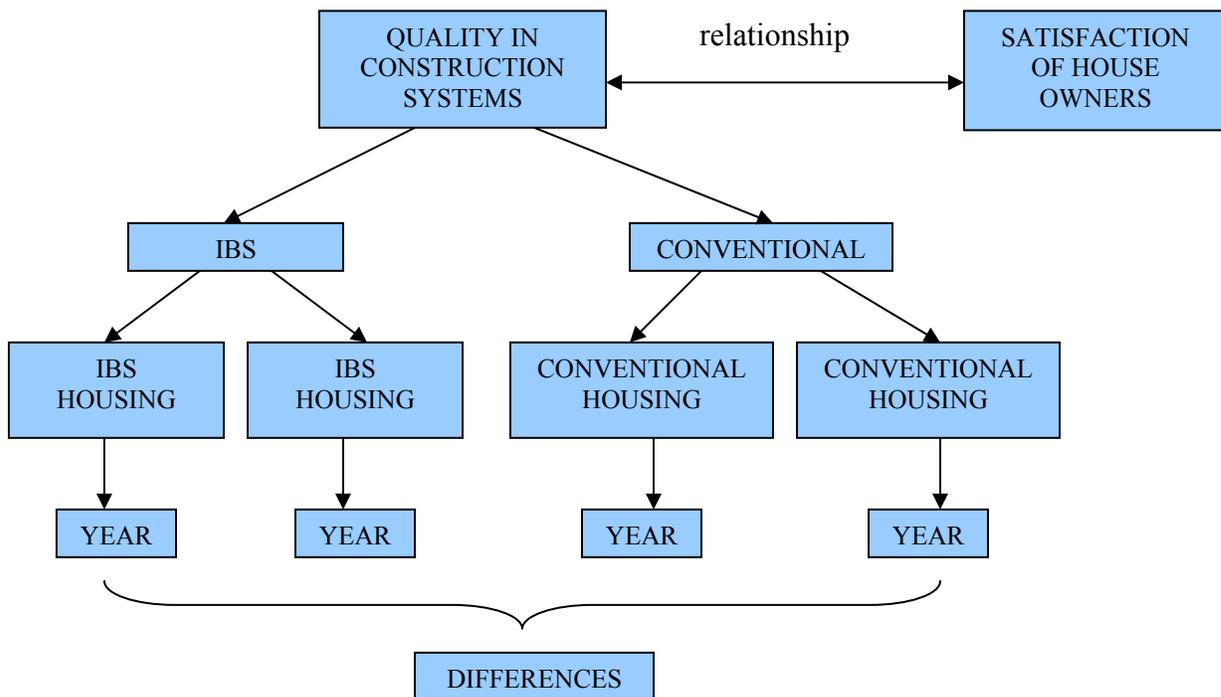


Figure 1.1: The Conceptual Diagram

## **1.7 Significant of the Study**

This study intend to find house owners satisfaction level and their relationship with several quality aspects. The outcome may ease better formulation regarding similar housing schemes to government agencies especially.

Beside that, the necessity to educate house owners in term of quality aspect is vital to ensure that future housing development is sustainable and suit their needs. It is important because house is a lifetime investment and should last for a long time. Moreover, house is a starting point in creating better family environment and better quality of life.

Other than that, there are a dire needs in accessing house owners satisfaction because the data available is very much scarce and difficult to find. Literatures related to this topic is also hardly available which especially containing local findings. So, hopefully this study will add some critical information to other peoples and lead to better understanding of the subject matters.

## **1.8 Scope**

This study will concentrate on low cost housing schemes that utilized IBS (fully prefabricated system) construction system and low cost housing schemes that utilized conventional construction system. The reason in focusing on housing projects is to discount the possible variation due to irregular structural layout plan if other types of

projects such as hostels, universities and schools are considered. Moreover, housing projects have typical structural layout plans and are repetitive, even though minor variation might occur. This makes direct comparison between building systems more representative and unbiased (M.R. Abdul Kadir *et al.*, 2006).

On the other hand, the satisfaction of house owners will only discuss on the overall satisfaction of the occupants on both housing systems in term of quality and will be based on the Construction Industry Standard (CIS) 1 – 1998 by CIDB. A study by David Arditi *et al.* (2000), they are looking on overall satisfaction of occupants from other than occupant's point of view; which means construction practitioners such as manufacturers, contractors and designers. The results may not give exact views on house owner's satisfaction toward their own housing schemes because some of the construction practitioners have their own interests; such as manufacturers' eagerness to project a good image of their products.

Furthermore, to assess the quality of both of construction systems, construction practitioners (professionals, contractors, developers and manufacturers) will be the respondents of the particular survey and will be based on the Construction Industry Standard (CIS) 7 - 2006 by CIDB.

