

COMPARATIVE PATTERN OF SPATIAL VISIBILITY AND STATIONARY
ACTIVITY IN MALAY TRADITIONAL AND LOW-INCOME HOUSES

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DEDICATION

This thesis is dedicated to my mother, Ramunah Yunus who taught me that even the largest task can be accomplished if it is done one step at a time. It is also dedicated to my father, Yahya Mohamed Sood who taught me that the best kind of knowledge to have is that which is learned for its own sake.

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ABSTRACT

Presently, the current paradigm on housing satisfaction indicates that dwellers are unhappy as they would have to renovate their homes to suit their needs. Previous research has focused on user satisfaction. However, current debates show that spatial properties should be considered in the design of the house. In this study, low-income houses' built form, their spatial visibility and stationary activity pattern, as well as a set of ideal home designs that could be related to housing design were explored. This research investigated the interrelated functions of housing domestic space that cater for the spatial visibility and stationary activity such as sleeping, chatting, eating, cooking, and daily activities of the dwellers. 47 participants were selected based on purposive sampling and they were from the low-income population in a slum settlement in Kg Seri Padu, Johor Bahru. They were selected as they had no experience living in Malay traditional and low-income housing. Questionnaires were distributed to these participants to identify the pattern of their living activities. The findings revealed that the low-income housing concept had spatial visibility difficulties with low scores in visual integration resulting in this concept having problems with space arrangement for stationary activities. Correlation test showed that even though the house concept had a high visual integration score, it also had high scores on stationary activity. The house concept with a low integration value of spatial visibility had the most problems of distributing stationary activity. Correlations showed that spatial visibility and aspects of arrangement of space were most closely associated with stationary activity patterns. Thus, the findings have shown that the housing concept with low visual integration of domestic space has specific problems associated with stationary activity distribution. As a conclusion, this study has illustrated that poor spatial visibility could disrupt stationary activity distribution that would affect the development of an ideal home.

ABSTRAK

Pada masa kini, paradigma tentang kepuasan perumahan menunjukkan bahawa penghuni tidak berpuas hati kerana mereka perlu mengubahsuai rumah mereka untuk memenuhi keperluan mereka. Kajian terdahulu telah memberi tumpuan kepada kepuasan pengguna, bagaimanapun, perbincangan semasa menunjukkan bahawa sifat ruang perlu dipertimbangkan dalam merekabentuk rumah. Dalam kajian ini, bentuk terbina daripada rumah berpendapatan rendah, kebolehlihatan ruang dan corak aktiviti pegun, serta satu set reka bentuk rumah yang sesuai yang boleh dikaitkan dengan reka bentuk perumahan yang diterokai. Kajian ini mengkaji fungsi ruang domestik perumahan yang saling berkaitan yang memenuhi kebolehlihatan ruang dan aktiviti pegun seperti tidur, berbual, makan, memasak, dan aktiviti harian penghuni. Seramai 47 orang peserta dipilih berdasarkan persampelan bertujuan, dan mereka terdiri daripada penduduk berpendapatan rendah di sebuah penempatan di Kg Seri Padu, Johor Bahru. Mereka dipilih kerana mereka tidak mempunyai pengalaman hidup dalam perumahan Melayu tradisional dan berpendapatan rendah. Soal selidik telah diedarkan kepada peserta untuk mengenal pasti pola aktiviti kehidupan mereka. Dapatan ini menjelaskan bahawa konsep perumahan berpendapatan rendah mempunyai kesukaran terhadap kebolehlihatan ruang dengan skor rendah dalam integrasi visual yang mengakibatkan konsep ini mempunyai masalah dengan susunan ruang untuk aktiviti pegun. Ujian korelasi menunjukkan bahawa walaupun konsep rumah mempunyai skor integrasi visual yang tinggi, ia juga mempunyai skor tinggi dalam aktiviti pegun. Konsep rumah dengan nilai integrasi yang rendah dari penglihatan ruang mempunyai masalah yang paling banyak untuk mengagihkan aktiviti pegun. Korelasi menunjukkan bahawa kebolehlihatan ruang dan aspek susunan ruang adalah berkait rapat dengan corak aktiviti pegun. Oleh itu, dapatan ini menunjukkan bahawa konsep perumahan dengan nilai integrasi visual rendah terhadap ruang domestik mempunyai masalah khusus yang berkait dengan pengagihan aktiviti pegun. Sebagai kesimpulan, kajian ini menggambarkan bahawa nilai kebolehlihatan ruang yang lemah dapat mengganggu pengagihan aktiviti pegun yang akan mempengaruhi pembangunan rumah yang ideal.

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CHAPTER 1

INTRODUCTION

Until the first half of the twentieth century, housing development for Low-income population in Malaysia has been one of our national needs. Still currently, the debate continue amongst scholars, housing developers, and local authorities on the success of the development in providing an 'ideal home' for the dwellers (Wan Hashimah, 2005; Tajuddin, 2007; Mahmud, 2010; Syed Mahdzar, 2016). Hepworworth (1999) defines that "*ideal homes*" is an expression of value: the kind of private life that hope to achieve. He give an example on Victorian Houses where it can be seen as a controlled private realm within walls to maintain a desired congruence between appearance (visibility) and reality (activity). In conforming to the needs, the thesis argues for an objective spatial configuration (comprising of spatial visibility and stationary activities) of the house to be investigated and considered in taking account the social logic of the layout of the houses (Hanson,1998; Seo, 2012; Syed Mahdzar et al, 2016). An evidence based research that identifies the hidden spatial dimension of the domestic space as manifested in the dwelling activities is needed.

1.1 Research Background

Literally a method for identifying the pattern in space use based on the assumption that order in space originates in social life is still limited (Mahdzar 2008; Seo 2012). In being normative, architectural theories have been governed by rules on how building and environment should be, and too little illuminating designers how building actually are (Hillier et al, 1984; Bellal, 2010; Maina, 2014). Due to this gap, Hillier and Hanson (1984) proposed

an idea of space syntax based on the direct study of building and space in order to develop an appropriate theoretical and empirical framework for genuine analysis within the meaning of architecture.

However, since 1990s, Space Syntax (Hillier & Hanson 1984) technique has been adopted by many researchers around the world to discover home culture especially on vernacular architecture as well as traditional houses (Hanson 1994). These approaches are used to measure syntactic variable values such as controllability of the spaces, integration, connectivity, etc., that are embedded in spatial configuration. Nowadays, parallel to technological advancement, discovering the hidden dimensions of the domestic space has become easier by using the computer.

By using 'space syntax – UCL Depthmap X software' as a research tool, numerical data can be extracted from the spatial configuration for quantitative research in order to see the experimental result (Syed Mahdzar, 2008). One of the studies that can be made through this research tool is the spatial visibility factor in relation to sociological aspects of 'ideal homes'. Specifically, spatial visibility is one of the most important factors for the dwellers in relation to controlling their social cohesion in their houses.

According to Simmel (1969), people interact individually based on the mutual glance and perhaps it exists everywhere (Hamilton, 2006). Weinstein (1984) noted that people interact between each other through spatial visibility. This phenomenon has been conducted by many sociologists like Simmel (1969), Sartre (1957), Whyte (1957), Dollard (1937), who think that investigation on the knowledge of the alter is needed in the understanding of the ego (social control) that can be attained from senses data and their constructive mental elaboration (Hamilton, 2006).

Across disciplines, Hamilton (2006) found that Simmel (1969) in his writing about “Sociology of the sense: Visual Interaction” had identified that ‘appreciation’ and ‘understanding’ are two different modes which understand each other. Simmel noted that previous mode encourage the ego and effective responses spontaneously and are non-cognitive. However, Sartre (1956) has found that relationship between the individual and others must be based on objectification of the individual subject by others (Hamilton, 2006). As an example, in preparing meals in the kitchen which is one of stationary activity that occur within the house, someone who performs the task is considered to be assessing the kitchen which may be affecting activities in visual field of the house.

Apart from the relationship between spatial visibility and stationary activity, it is true that both variables is the important variables that contribute to the ideal home design. Therefore, in broader sense, it can be said that the domestic life at home is rather heterogenic even in this modern world nowadays where all kinds of different values for life are coexisting. It can be generalized that if the ordinary home in Malaysia was built by the tradition wisdom of visual field of stationary activity in Malay traditional house, now it is the typical current Low-income houses that take this formative role.

1.2 Problem statement

In beginning of 1960, almost 50% of Low-income houses is dwelt by the squatter population under the government aspiration to achieve zero slum in the cities of Malaysia. To date, more than 90,000 housing units were built to cater for the migration of the population from rural and the squatter areas. This scenario happened due to the need for human resources for the industrial sector (Halizah, 2010).

Housing provision for this population used the 'international style' (Tajuddin, 2007) which is a design concept that is widely adopted in Asia (Seo, 2012). This concept is influenced by the western living of which the appropriateness to the local people is still debated. In the Malaysian context, most of the low-income population had experienced being in the traditional house built form (Jusan, 2010). Previous studies from KALAM (Centre for the Study of Built Environment in the Malay World) in University Teknologi Malaysia, qualitatively found that the Malay traditional house is ideally suited to the dwellers' routine activities. This traditional concept of the house has the characteristic of catering to a fundamental dwelling need such as safety, privacy and solidarity amongst family members within the house.

According to Hillier and Hanson (1984) and Faghizadeh (2008), the traditional society is based on mechanical cohesion as a fundamental for their living process. This society shows the same role and shared values in order to strengthen their social system. Under this social system, they have a strong relationship amongst them. Each member learnt their culture through collaboration and the natural belief that their group is under one unit. Thus, these scholars concluded that when social integration is high, social control will be high and vice versa. Therefore, the question on why Malay traditional society practices the quite open plan concept of the house with a limited number of bedrooms probably has a strong relation to the mechanical cohesion.

However, the new concept of for the Low-income population since 1970s, is obviously different when compared to the traditional house in terms of spatial setting. Previous studies (Tajuddin, 2007; Mahmud, 2010; Syed Mahdzar, 2016) found that the spatial setting of the one bedroom concept to three bedroom concept of the house fail to meet the dwellers satisfaction on organizing their stationary activities. This findings relates to the dwellers ability to integrate the various stationary activities within the spaces. When cultural event such as gathering, ritual, and festival happened, this housing concept faces difficulty in controlling the distribution of activities.

One of the objectives in spatial order (Bellal, 2010) is to provide a house that is able to optimize every space within it for organizing the various dwellers' activities. However, many previous researchers found that feedbacks from dwellers are not parallel with the objectives in spatial setting. A majority of the modern housing concepts for low-income dwellers do not match with their social pattern. Implications from the pre-determined spatial order creates a mutated family where the dwellers are cramped in between the traditional and the new culture (Aboy, 2007).

Most of local researchers reveal that most of the dwellers who live in Low-income housing schemes, renovate their house because the kitchen space and living hall are unable to integrate the various daily stationary activity. Therefore, Mahmud (2010), suggests that the new development of Low-income housing should allow the dweller's continuity to make their dwelling space on their own. Syed Mahdzar (2016) also suggested that new housing developments should integrate the traditional spatial configuration in the modern approaches.

Therefore, a comprehensive strategy for concept change in spatial setting of Low-income houses is needed. The study of spatial configuration which is emphasizing on the active search to attain the essence of space organization need to be done. Reconfiguration the current concept through understanding the home culture from the traditional home artifacts, will give a strong impact to the determination process of future housing development. This effort will probably give a dweller the ability to sort out their stationary activities within the house. Thus it creates an 'ideal home' for Low-income population in Malaysia.

1.3 Research Aim and Objectives

The study aim to investigate the spatial visibility and stationary activity pattern in the Malay traditional and low-income houses in Johor with the following objectives;

- (a) To identify the relationship between stationary activity pattern and the existing spatial visibility concept of Low-income housing in the spatial configuration of the dwelling system.
- (b) To identify the relationship between stationary activity pattern and the existing spatial visibility concept of Malay Traditional Houses in the spatial configuration of the dwelling system.
- (c) To suggest the guideline of spatial layout requirement for the Low-income housing development in Malaysia

1.4 Research Question

The research questions of this study are as listed below;

- (a) What is the strength of the relationship between the stationary activity pattern and the current spatial visibility concept of Low-income housing?
- (b) What is the strength of the relationship between stationary activity pattern and the spatial visibility concept of the Malay traditional houses?
- (c) What are the recommended guidelines in the spatial layout requirement for Low-income housing development in Malaysia?

1.5 Research Scope and Limitation

The research scope would highlight the comparative value of a sample houses of Malay Traditional and Low-income houses in Malaysia. This would help the concerned designer to know where it stand with respect to ideal home. The research would enumerate the visual integration and stationary activity distribution of samples in term of correlational research. This would be helpful to understand the strength of relationship and the implication of housing design in order to achieve an ideal home.

The study also point out the current debates on spatial configuration of Low-income housing in Malaysia and at the same time would also bring the awareness from the traditional wisdom by Malay traditional houses. In spite of the best of effort to minimize all limitation that might creep in course of the research, there were certain constrains within which the research was completed. The research was based on secondary data which is it was collected from 47 respondents by using questionnaire at Kg Seri Padu, Johor Bahru. However, the objective of the survey was to check the dwelling mapping of the activity organization of the house with regards to the concept of ideal home.

1.6 Research Significance

The study attempted to give a contribution to the body of knowledge especially in architectural subject. These studies measure the spatial visibility of the domestic space in order to investigate the relationship to the dwellers stationary activity pattern. Therefore, this thesis attempted to gives a guideline for the advance research in order to understand the relationship between space and their social system.

This thesis also scientifically recorded the visual experience through Visual Graph Analysis (VGA) between new and traditional houses, by using the up to date software of “space syntax – UCL Depthmap X” in order to measure the visual integration value. Therefore, the data finding is made through the statistical process in order to avoid assumptions in the conclusion. The primary hypothesis of these studies is that the spatial visibility structure of the space is a fundamental aspect that gives meaning to how dwellers use the space, and the spatial pattern of the house unit that will shape social pattern of the society.

1.7 Research Methodology

The methodology of the study explains the method or approach taken for answering the questions raised in the problem statement. It includes four levels of work that cover as shown in figure 1.1. Stage 1 – Literature Review. At this stage, this thesis argues against the design of pre-determination on current Low-income housing in Malaysia. Design process hypothetically, can be improved by looking at the traditional wisdom of making home that has been practiced by previous society from generation to generation. This study focus on the spatial visibility and the stationary activity relationship.

Stage 2 – Data Collection. This research is conducted within Johor Bahru city which is the stationary activity investigation made at Kg Seri Padu, Johor Bahru (squatter settlement) where the inhabitants are the respondent from purposive sampling. The decision to choose these respondents is due to the fact that they have never lived in current Low-income housing. Based on a purposive sampling technique, these approaches effectively discover the anthropological situation whose finding can be of benefit to the prediction studies.

Stage 3 – Analysis and Finding. At this stage, all appropriate data and information are used to achieve the first and second objectives that will be analyzed by using quantitative approach. Detailed explanation is discussed in Chapter 4.

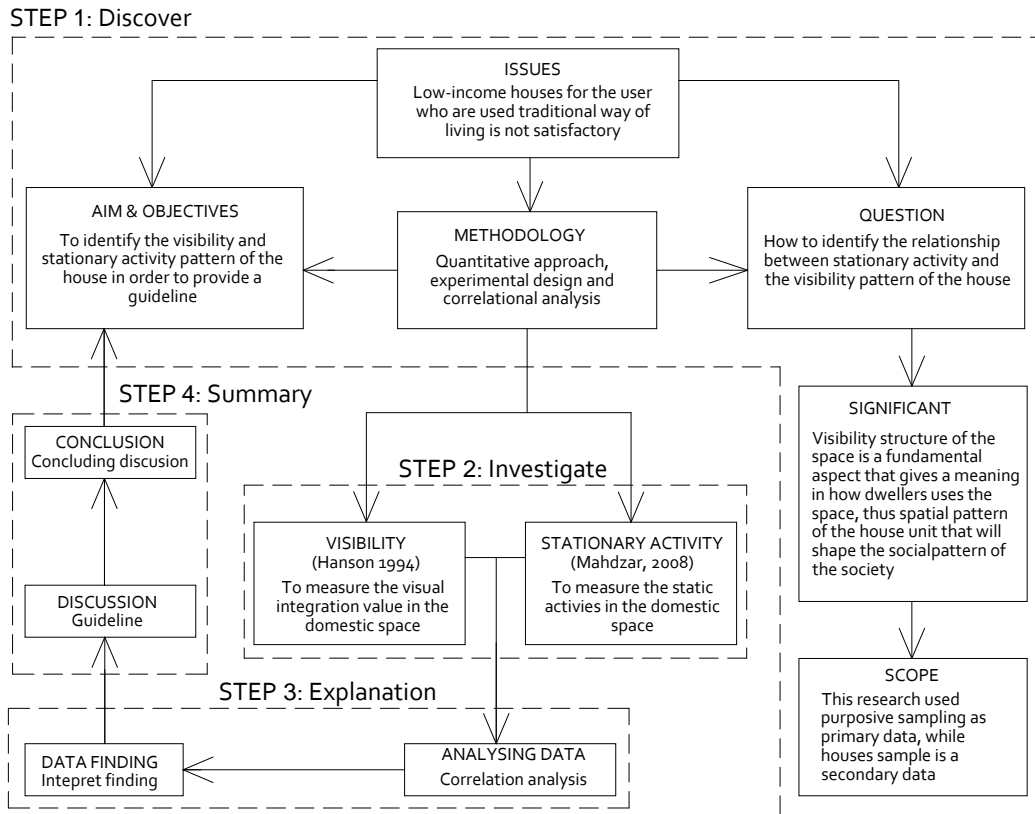


Figure 1.1: Research Methodology framework

Stage 4 –Discussion and Conclusion. Once data and information is processed and analyzed, the next step is to conduct a summary of the findings of spatial visibility pattern in relation to the purposive respondent in the study area. In this section, this study redefines the issue and the related problem in the area. The findings will be used as a guideline in order to structure the discussion and comprehensive strategy for use at the preliminary design stage of Low-income housing development.

1.8 Thesis Structure

The writing is presented in six (6) main chapters. Chapter one described the current issue of housing and identifies the main arguments in order to establish the objectives and theoretical aspect of the relationship between spatial visibility and social activities. Reviewing the current debates of housing culture in Malaysia, objectives, research question, research scope and limitation, which would be define the direction of study.

Chapter two review related literature on how to understand the spatial visibility and stationary activity importance of housing. The main focus of this discussion is the main theories that have a relation to spatial configuration and its stationary activity pattern towards an ideal home for Low-income population. Through this reading, a proper research frameworks constructed in detail, an at the end rationale behind the selection of the main variables for thesis, the spatial visibility and stationary activity is elaborate.

Chapter three concentrates on the methodology especialy in strategy and tactics in order to conduct this thesis. Data collection from stationary activities variables are collected from a squatters' population in Johor Bahru, where all the respondents are from a Low-income population who work in the private sector. A total number of 45 respondents participated on this research. The total number of respondents is derive from the total number of housing units in the squatter settlement, that is 45 units.

For the spatial configuration purposive samples, 30 housing units of Malay traditional house are collected from KALAM (Centre for the Study of Built Environment in the Malay World). By using the total number of convex as a sampling technique, only 9 housing units were used to be analyzed by using the space syntax – UCL Depthmap X software. It is the same technique used on the other purposive sample of current Low-income housing in Malaysia.

Chapter four presents the data findings to answer the first and second research question. Using the statistical technique, the relationship comparison between two type of housing and stationary activity pattern of respondent, is investigated. The finding from the analysis strongly suggest that comparative value should be to take in account.

Chapter five focuses on interpreted the research finding. In this chapter, them main concern move forward towards relationship comparison between spatial visibility pattern of to sample housing types and stationary activitiy pattern of the respondent. Further this outcome answer the third research question of this thesis. A new guideline is suggested and utilized to generate contribution towards ideal home for Low-income population in Malaysia.

Finally, chapter six identifies the qualities and criteria relevant for organizing the basic spaces in housing unit design to concludes the whole argument as a thesis conclusion. By revisiting the analyses in chapter four and five, it is discussed how those finding can be contributed within the global perspective of this thesis. It also establishes the recommendations for future research.

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