PAPER 12

INTEGRATED CONSUMER DECISION MAKING PROCESS MODEL FOR HOUSE PURCHASING DECISIONS: A CASE STUDY OF FIRST-TIME POTENTIAL HOMEBUYERS IN KLANG VALLEY

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ABSTRACT

A decent home is a basic need for every human. Owning a home has always been a great dream to everyone, it will secure one's life and give protection to an individual and also the family. However, making large monetary decisions like house purchasing can be a daunting one, especially to first-time buyers where mostly are young starters who just started their working career and hardly earned a good pay. This study is initated based on the previous scenario, and the following objectives help to set the path; 1) to identify the needs and preferences of first time homebuyers, 2) to adapt the researcher's computerised personal decision aid (ComPDA) model into the Consumer Decision Making Process (CDMP) model in developing a recommendation system for house purchasing, and finally 3) to evaluate the proposed model through expert reviews. All the activities set to achieve the objectives adapt the Design Science Methodology where four main stages involved; 1) problem awareness, 2) suggestion and development, 3) evaluation, and 4) conclusion. There are generally four major outcomes that can be listed out from all the activities; 1) the needs and preferences data of the first time homebuyers in Klang Valley, which have been empirically identified, 2) a new adaptation model of ComPDA in CDMP model known as Computerised Decision Aid for House Purchasing (CDA4HP), 3) the reviews from industry experts about the proposed CDA4HP model, and 4) a prototype of the CDA4HP. All these outcomes have multifold benefits to the related industry as well as the government and policy makers. The proposed model, in particular, could be a beneficial guideline for development of recommendation system that can augment the end result of property developer's marketing strategy. Besides that, the understanding of homebuyer's needs and preferences in house purchasing decisions, also enrich the literatures of related area.

EXECUTIVE SUMMARY

1.0 RESEARCH PROBLEM

Home purchasing in most country are considered as the highest investment in life and hence create higher risk especially financial risk and risk of going bankruptcy (Glindro et.al, 2008). There are many attempts made in previous studies on how decision techniques can be used to assist homebuyers with their purchasing decisions (Sun et al., 2013; Lin & Lin, 2013; Wang, 2013; Zhou, 2013; Chiu, Chuang, & Lin, 2013). However, there is little evidence to examine first-time homebuyers' purchasing decision in Malaysian context although the issues do exist (Tan, 2012). Therefore, this research intends to fill the gap that currently exists in the literature by exploring the potential of implementing a systematicaly designed computerized decision aid among first-time homebuyers in Malaysia, particularly in the area of Klang Valley.

MacLennan (2002) emphasized that economists have characterized housing as a bundle of attributes. Some of these attributes are derived from the internal characteristics of the house unit itself such as the rooms available, whilst examples of external are location, accessibility to utilities, services and facilities. In the UK, it was found that very little research had been carried out to understand on consumers needs in regards to housing preferences (Mills, 2000). This has led to a gap between consumers' expectations and developers' perceptions, which resulted in customer dissatisfaction (Swartz and Brown, 1989).

In addition, this research also aimed at examining the Consumer Decision Making Process (CDMP) model (Blackwell et al., 2006) and finding potential of embedding researcher's doctorate work, Computerized Personal Decision Aid (ComPDA) model (Siti Mahfuzah, 2011), in attempt to coordinate the process of house purchasing decision for first-time buyers. This is justified by the fact that most people fail to bring the right information into their conscious awareness at the right time (Bazerman & Chugh, 2006) and their decision process seems affected by incomplete information and bounded rationality.

2.0 OBJECTIVES OF RESEARCH

Based on the research problem, the following research questions were put forward:

i. What are the needs are preferences of first time homebuyers in purchasing a house?

ii. How can the ComPDA model be adapted into the CDMP model?

iii. How to evaluate the proposed model?

All these research questions will be answered through the following research objectives:

i. To identify the needs and preferences of first time homebuyers

ii. To adapt the ComPDA model into the CDMP model in developing a computerized decision aid (e.g. recommendation system) for house purchasing

iii. To evaluate the proposed model through expert reviews.

3.0 METHODOLOGY

This research adapts the design science research methodology as the generally accepted methodology in information system. The methodology from Vaishnavi and Kuechler (2007) is adapted to achieve the proposed objectives. There are four main stages to accomplish the goal of the research, i) awareness of problem; ii) suggestion and development; iii) evaluation; and iv) conclusion. **Figure 3.1** illustrates the stages involved in this study and the following sections will have the details on each stage.

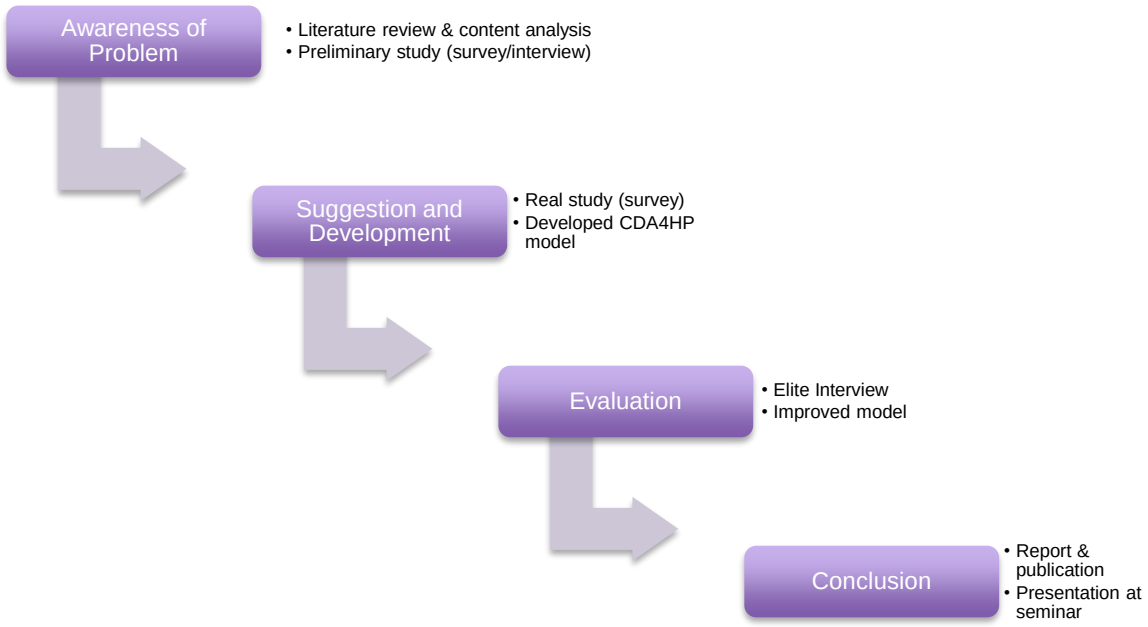

Figure 3.1. Stages in Design Science Methodology as adopted in this study

3.1 Phase 1: Awareness of Problem

The awareness towards the research problem majorly built through literature reviews and content analysis of consumer decision-making studies (as discussed and elaborated in Chapter 2). In order to develop deeper understanding of issue pertinent to house purchasing decision among first-time homebuyers, a preliminary study was conducted. The major concern was to find out the relevant needs and preferences of house purchasing among first-time homebuyers.

The preliminary data were gathered through a structured questionnaire (see Appendix A) that focuses on i) demographic and ii) homebuyers' needs and preferences. Filtering questions, such as "have you owned a house before?" and "do you currently reside in Klang Valley area?" were asked to determine eligible respondents for the survey. The survey went on for a month before analysis on collected data was performed. A total of 91 respondents participated in this study, however only 77 data have passed the vetting process and were further analysed.

3.2 Phase 2: Suggestion and Development

Suggestion on the possible integration of core elements in ComPDA model (Siti Mahfuzah, 2011) into CDMP model (Blackwell et al., 2006) will be deviced based on findings from the real study on first time homebuyers' needs and preferences. This conceptual model, which is known as Computerized Decision Aid for House Purchasing (CDA4HP) will provide systematic details of house purchasing decision with consideration of first-time experience aspects. Prototyping model will be developed as well to facilitate the validation process of the conceptual model.

3.3 Phase 3: Evaluation

In this phase, experts/elites in related area will be interviewed to review and validate the conceptualization of this computerized decision aid model for house purchasing. Potential experts will be contacted from any of the following organization; Real Estate & Housing Developers' Association Malaysia (REHDA), Ministry of Urban Wellbeing, Housing, and Local Government (KPKT), Department of Town and Country Planning (JPBD), Construction Industry Development Board (CIDB), Kuala Lumpur City Hall (DBKL), PR1MA Corporation Malaysia (PR1MA), and 1Malaysia Civil Servants Housing Programme (PPA1M). During the session, the experts will be asked to validate the reliability of the model.

3.4 Phase 4: Conclusion

The final phase is conclusion where the results of expert's review will be analysed and discussed in the final report. The direction and future research to promote improvement will be elaborated as part of the conclusion phase.

4.0 MAJOR FINDINGS

Finding 1: The needs and preferences of first time homebuyers in house purchasing decision

Housing needs and preferences are considered as decision criteria in house purchasing decision. Understanding the differences between these two helps to make a sensible decision. Based on Siti Mahfuzah (2011) work, from the discussion on narrative and rating criteria, it is necessary to clearly distinguish between the needs criteria and preferences criteria among a list of housing attributes. Hence, explained why it is important for this study to categorise the housing attributes into **needs** (i.e. narrative criteria) and **preferences** (i.e., rating criteria) (as discussed in Chapter 4). Moreover, well-defined criteria not only help in structuring the decision process (Eshlaghy & Radfar, 2006) but also help to raise better awareness among decision makers about the alternatives under consideration (Bronner & de Hoog, 1982).

The survey took eight weeks before analyses on collected data was performed. A total of 388 respondents participated in this study, however only 320 data passed the vetting process and were further analysed. Factor Analysis was performed on four groups of housing attributes (as depicted in Table 4.1) comprise seven items for Locational Attribute, four items for Neighborhood Attributes, six items for Structural Attributes, and two items for Social Cultural Attributes.

Rotated Component Matrix[a]

	Component	
	1	2
A1	.530	
A2	.532	
A3	.596	
A4	.540	
A5	.669	
A6	.648	
A7	.586	
B1		.893
B2		.876
B3		.904
B4		.692
C1	.718	
C2	.721	
C3	.734	
C4	.755	
C5	.565	
C6	.552	
D1		.549
D2		.464

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Figure 4.1: Factor Analysis of Housing Attributes in the Real Study

This study refers to Factor 1 as "Need" and Factor 2 as "Preference". Based on the factor loadings as shown in Figure 4.1, variables A1 to A7 and C1 to C6 loaded strongly on Factor 1 (Need) whereas variables B1 to B4 and D1 to D2 loaded strongly on Factor 2 (Preference). This survey shows that first time homebuyers perceived Locational

Attributes and Structural Attributes as **needs**, whereas Neighborhood Attributes and Social Cultural Attributes as **preferences**, as depicted in Table 4.1.

Table 4.1: Classification of Housing Attributes into Needs vs. Preferences

Needs		**Preferences**	
A. Locational Attributes		**B. Neighborhood Attributes**	
1	Close proximity to mall	1	Level of pollution
2	Close proximity to school	2	Level of crime problem
3	Close proximity to public transport	3	Cleanliness of neighborhood
4	Close proximity to place of work	4	Gated & Guarded community
5	Close proximity to recreational park		
6	Close proximity to place of worship		
7	Close proximity to medical facility		
C. Structural Attributes		**D. Social Cultural Attributes**	
1	Number of bathroom	1	House orientation
2	Number of bedroom	2	House number
3	Size of living area		
4	Size of kitchen		
5	Green (eco-friendly)		
6	Built-up area of the house		

Finding 2: The adaptation of ComPDA model into the CDMP model

Integrating the ComPDA model with the CDMP model is a matter of embedding technology assistance in consumer decision-making process. The process starts with identifying common stages/phases in both models and later followed by the revision process of ComPDA model to be fit into the CDMP model. In the revision process, correspondence elements between the two models are considered. The findings from objective 1 are also embedded in the revision process as part of the decision criteria. Figure 4.2 illustrates the revised ComPDA model, which is refered as Computerized Decision Aid for House Purchasing (CDA4HP).

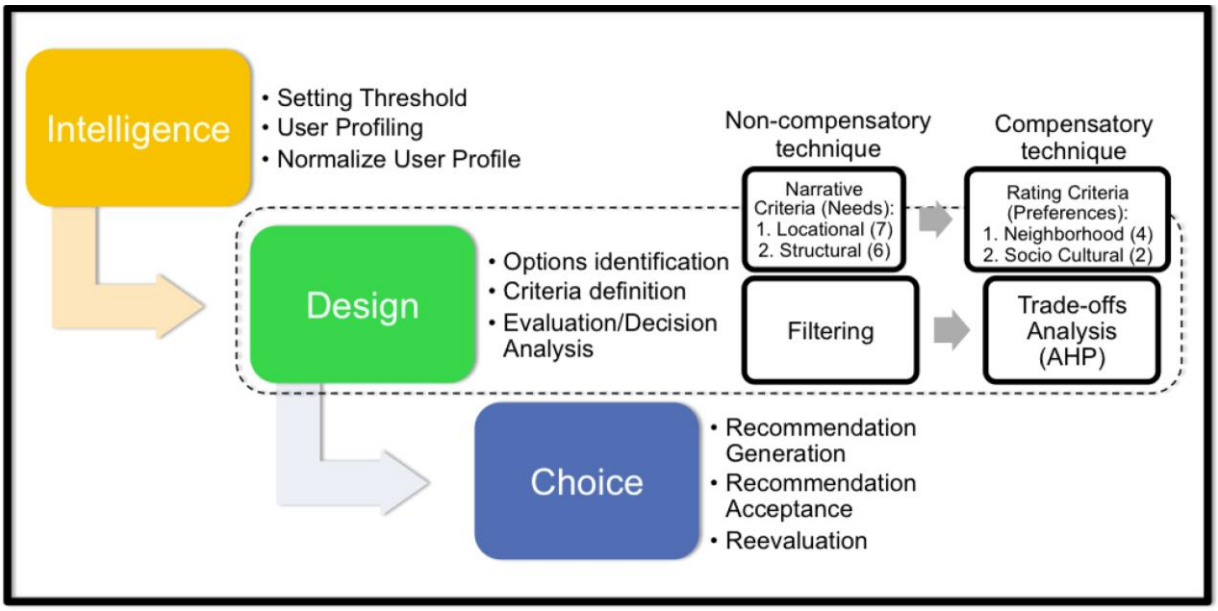

Figure 4.2: The Computerized Decision Aid for House Purchasing (CDA4HP) model

Finding 3: The qualitative evaluation of the model through elite interview and a CDA4HP model-driven prototype

The revised model is known as Computerised Decision Aid for House Purchasing (CDA4HP). The evaluation of the conceptual model has been done through elite reviews. A CDA4HP model-driven prototype is also developed to facilitate the elite reviews. Findings from the elite review (i.e., using semi structured interview questions) have been constructive and it offers more room for improvement as far as the CDA4HP model is concerned. Initially, 32 codings derived from the interviews transcriptions. The purpose of coding into a classified theme was to assist in interpreting the data and to look for patterns occurring from the data. These codings were then grouped into themes. The themes consisted of codings that were related and, thus, classified in the same category. Table 5.3 presents the classification of the codings and the formation of the themes. Codes belonging to the same theme were coded in the same row in the table. As a result, seven themes were derived from the 32 codings (refer Table 4.2).

Table 4.2: The identified themes based on elicited codings

Theme	Elicited codings from the interview data
T1: Concern	Set of questions for user profiling, criteria definitions not clear, competition with existing tool, time spent to use the system, sub-sale data, big data, user interface, AHP, transparency
T2: Extended Features	PTPTN screening, indicative market value, banking criteria, real time data
T3: Limitations	Single recommendation, basic criteria, risk analysis
T4: Platform	Web and mobile
T5: Strength	Interesting concept, paper-less technology, attraction to generate lead, user friendly system
T6: Existing tool	iProperty.com.my
T7: Suggestion	Pattern, lifestyle impression, include public data from iProperty, genY needs and preferences, separate group of house number for landed and stratified, more house features

From the seven identified themes, T1 (Concern) and T3 (Limitation) are considered as negative feedbacks and are addressed accordingly in this study, whereas T2 (Extended features) and T7 (Suggestion) are considered as future works.

5.0 SIGNIFICANCE OF STUDY

Among potential benefits of the research are as follow:

i. Understanding of first-time homebuyer behavior in Malaysia, which provide consequential information to the government and policy makers

ii. The above also have impacts to housing market in Malaysia

iii. Understanding of housing needs and preferences in house purchasing decisions, which add to the literatures of related research area

iv. A potentially beneficial guideline to develop a recommendation system that can augment the end result of property developer's marketing strategy.

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