Acceptance level towards smart home concept application amongst property developers in Malaysia

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ABSTRACT: Smart home concept has been explored for years; however, its proliferation is not yet widespread. Hence, the opportunity has been widely underestimated. This paper aims to explore an acceptance level of smart home concept application amongst property developers in Malaysia. Quantitative method was adopted along the research process. The results for this research were based on 25 respondents which were collected from property developers. The data analysed by SPSS software show that majority of property developers were agreed on the smart home concept application in the housing development project. Thus, this research will provide an opportunity for property developers to expand the smart home concept into a new housing development projects in enhancing the quality of life.

Keywords: *Acceptance*; *Development; Smart homes concept; Technology*

1. INTRODUCTION

In recent years, almost every household product presented as "smart" has been technically modified [1]. As well as the development of the internet and global policy programs by the government that are requiring or promoting energy saving and environmental issues, the consumers' attention recently started to direct towards the smart home technology (SHT), especially in developed countries and in Europe [2].

A worldwide consumers of electronics and technology trade showed (CES) that in 2016, the 'smart home' concept was introduced as a modern living space for today [3]. In addition, [3] stated that smart homes or homes that use ICT to communicate and integrate various household devices have shown to be more effective in handling household tasks and to protect human lives and property from harm. [4] stated that smart homes can enhance people's lives by offering protection, medical care, luxury, and convenience. This represents a step towards the vision of the Fourth Industrial Revolution (4.0 IR), which includes the role of IT systems as the focus [5].

The first smart homes are not an actual structure, but it is only a theory or idea. The ideas of smart home devices have been discussed in science fiction for decades. However, the actual smart homes have only been developed for a short while even though the smart home devices ideas have been around for some time. This period concentrates on technology while the actual developments contribute to the smart homes that we currently know and can foresee from the coming years [6].

For decades, the smart home ideas have been explored. However, many people do not have a strong smart home theory and basic knowledge due to the social barriers such as quality, price, security, lack of control, data privacy, and so on [1]. Many smart home systems in overseas today offer online services to customers. However, local online platforms are still limited for smart home systems. In fact, smart home systems are not affordable among most Malaysians except for those who have higher incomes, due to the currency exchange and the transportation cost which is charged when imported [7]. Furthermore, some of the features of smart home systems may not fit Malaysian lifestyle preferences, as the system is mainly from countries in the west.

In addition, the level of awareness and understanding among Malaysians are still limited and inadequate as they are still unclear on how the smart home technology operates. The thinking of outdated-fashioned pushes prospective customers away from engaging into smart homes, leading developers to concentrate more on traditional housing project instead of the construction of smart home, which guarantees a steadier income. Therefore, this paper is focusing on the acceptance level of house buyers towards the smart home concept and the acceptance level of developers towards the application of smart home concept.

2. METHODOLOGY

This research adopted the quantitative method along the research process. The results of this research were based on the survey conducted among 25 respondents who were property developers within Klang Valley, Selangor area. This questionnaire is using the structured questionnaire with 5-point likert scales as a context for questions, varying from strongly disagree to strongly agree, enables the analysis of trends and patterns that help explain what is occurring in the study context and provide a measure of the feelings, views, perceptions and behaviour of the respondents about topics that are of specific concern to the investigator [8]. The collected data were then was analyzed by Microsoft

Excel and Statistical Product and Services Solution version 26.

3. RESULTS AND DISCUSSION

The acceptance level of smart home concept application amongst property developers are determined through five indicators as summarises in Table 1 below.

Table 1 Acceptance level of smart homes concept application amongst property developers

Indicator	Mean Score
Development Aspect	3.98
Economic Aspect	3.90
Social Aspect	3.88
Intention to Apply	3.83
Environment Aspect	3.74

Based on the results, development aspect is recorded to have the highest acceptance level by property developers in implementing smart home concept into their development project. In the sense of everyday life, the success in smart homes development depends profoundly on the adoption and the use of this concept by people, regardless of the final form they adopt [3]. Previous research also stated that the development of smart homes depends on the relationship between policy, legislative, commercial, consumer and investment factors [9]. According to [10], developers and suppliers should concentrate on acceptance, perceptions of effectiveness and perceptions of ease of use to improve the rate of adoption from a realistic perspective point of view.

On the other hand, economic aspect and social aspect are identified by developers as the second and third highest acceptance level in applying smart home concept. In regard to social aspect, property developers believe that one's lifestyles would be more convenient with innovative, modern management. Their goal is to enhance the lives of residents through innovative technologies such as power management, safety, controlling and incident detection technologies [3].

Furthermore, the acceptance level amongst developers is determined by their intention when applying this concept into their development projects. They claim that they can create more profit by contributing to the need to manage the natural environment and meet the demands [11].

The effect on the environment and sustainability of smart home is significant. Homeowners who are intended to relate the smart housing system into various housing development designs, indirectly will create demand for environmental intelligence functions, and subsequently increase the real estate market significantly [12].

4. CONCLUSION

The development of technology like smart homes can make one's life more convenient and comfortable. The benefit of a smart home is that the quality of life can be improved. In conclusion, it is imperative for the relevant authorities especially the government, real estate industry and academics to demonstrate and lead towards achieving the acceptance level needed and strengthening the main variables of smart homes concept throughout Malaysia in order to enhance the quality of local and international real estate market.

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