

Chapter 3

Internet of Things Technologies: Assessing Factors Influencing Consumer Intention to Use

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ABSTRACT

The aim of this research is to examine factors influencing consumer acceptance of internet of things technology (IoT) guiding by the technology acceptance model (TAM). This quantitative research involves 204 respondents approached via convenience sampling at a public higher learning institution. Data was analyzed using multiple regression, and results revealed that the dimension of perceived usefulness is the most influencing factor on the consumers' acceptance of IoT technology and consumers' behavioural intention to use. In the Malaysian context, this research provides additional information in narrowing the research gap with regard to understanding behavioural intention to use the IoT technology. Next, the framework will be used for future exploration to address the issue of how people who have never utilized an IoT innovation react.

INTRODUCTION

Internet of Things (IoT) was introduced in 1999 by Ashton, a British technology pioneer who help develop the concept (Gubbi, Buyya, Marusic, & Palaniswami, 2013). IoT refers to things that can be used to connect via internet. Generally, the discussions on IoT focused on the future of communications and

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computing as it is a technological revolution. IoT has been used in many areas recently, for example, digital logistics, supply chain management, stock control, urban planning, library management, retail tracking, mobile payment, efficient transportation, home automation, warehouse management, healthcare and the private domain (Ding, 2013). It also offers many advantages for many industries and their benefits to consumers, for example substantial efficiencies. (Sundamaeker, Guillemin, Friess & Woelffle, 2010). In this circumstance, consumers' behaviour might be affected from the internet of things technologies on few aspects of the consumers' daily routine. (Li, & Wang, 2013). For instance, IoT consumers might get advantage from technologies that used in smart fridges which can monitor the consumption of food and beverages and also rearrange goods automatically.

Prior studies have not effectively addressed the effects of technology features, characteristics of individual and social context on consumer acceptance towards the technologies. According to Schlick *et al.* (2013), researchers mainly focus on the usage and design of the technologies from the industry or company's point of view.

The objective of this research is to investigate the consumer recognition towards the Internet of things technology and identify the features influencing IoT acceptance among students. This study is comprises of two major independent variables: perceived ease of use and perceived usefulness. For a student, the factor that affects his acceptance on IoT might be different according to his own preference. However, the feature that has the most effective on the acceptance of IoT is one of the main outcomes of this research.

The ensuing section is about the background hypothetical foundation from prior literature and develops the research model and hypotheses. Thirdly, the proposed model will be tested by the research method, and the next section will shows the analysis and result of the study. Furthermore, the research finding will be discussed in the fifth section. Final section will conclude the limitation and implication of the study and also recommendation for future research.

LITERATURE REVIEW

This section review literature related to perceived usefulness, perceived ease of use, trust, social influence, perceived enjoyment, perceived behavioural control, behavioural intention to use.

Perceived Usefulness

Perceived usefulness refers to a person believes that using a specific system would develop his or her job enactment (Davis, 1989). This study believes that the control to attract users lies in the technology's usability and usefulness. Consumers are only willing to accept transformation if those transformation provides a distinctive advantage (Rogers, 1995). Additionally, the perceived usefulness of IoT technologies are likely to be high because their service convenience would definitely increase consumer's satisfaction level. This will somehow affecting consumers perceptions towards enhanced performance as well as affects consumers intention. However, perceived usefulness also depends on the services IoT technologies offered such as faster processes, convenience, transferring money abroad, obtaining relevant information and also maintaining their efficiency (Wang, Lei, & Li, 2013).

The IoT technology is beneficial to consumers in so many ways. The TAM indicates that perceived usefulness is a significant factor of behaviour aim to use. (Lee, Park, Chung, & Blakeney, 2012). Similarly, perceived usefulness is an essential aspect in determining adaptation of advances. As a consequence,

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