Chapter 12
Factors Influencing Consumer Acceptance of Internet of Things Technology

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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 people who have never utilized an IoT innovation react.

INTRODUCTION

The Internet has become a need for many people as the technology advanced. It satisfies people with its multiple services in different types of sector. The Internet is used for communication, as a search engine, entertainment, and even purchases of products or services. Internet of Things (IoT) was introduced in 1999 by Ashton, a British technology pioneer who help develop the concept (Gubbi, Buyya, Marusic, & Palaniswami, 2013). The IoT technology purpose is to enlarge the advantages of the consistent internet

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such as frequent connectivity, the ability of remote control, and sharing of data (Peoples, Parr, Mcclean, & Morrow, 2013). With IoT technologies, people in many fields such as transportation, logistics, and finance can work more efficient and easy because the technology includes of fitting objects by using a microchip and a communications antenna (Welle, 2013). IoT technology help corporations by using radio frequency identification (RFID) to monitor their inventories, use Homeland Security to scan passports, and for fare cards reading at subway terminals. Prior to its functionality, IoT technologies have become a technological revolution that will change our life and the world (Schlick, Ferber & Hupp, 2013).

However, a more practical question for IoT technology practitioners is: what characteristics create consumer awareness that this technology is useful, effortless to use, enjoyable, and can be trusted? Therefore, this research focus on the hypothetical fields of the Technology Acceptance Model (TAM) such as usefulness, ease of use, trust, social influence, and enjoyment from the industrial, social background and individual perceptions, to advance an unified framework. Thus, this framework integrates that the consumer acceptance of IoT technologies will be affected by these variables (Ha & Stoel, 2009). This study creates knowledge that will be beneficial to IoT technology practitioners. This knowledge will help practitioners understand more about the impact of consumers’ certainty about IoT technologies such as the way to attract more consumers to try this technology.

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.

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. This study proposes an extension to the current model of IoT technology acceptance. The second 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 concludes the limitation and implication of the study and also recommendation for future research.

LITERATURE REVIEW

According to Uckelmann, Harrison and Michahelles (2011), the IoT is defined as things that can be used to connect via internet. Generally, the discussions on IoT focused on the future of communications and 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 & Woelfifle, 2010). In this circumstance, consumers’ behaviour might be affected from the internet of things technologies