

CHAPTER II

LITERATURE REVIEW

2.1 Previous research

The UTAUT model is often used to explicate information systems, tax payment systems and other information systems or information technology systems (Williams, Rana and Dwivedi, 2015). Many studies have successfully analyzed IT systems using the UTAUT model including: E- learning (Raman et al., 2014), E-book (Maduku, 2015), m-payment (Teo et al., 2015), online shopping (Celik, 2016), payment systems that utilize Smart card payments (Sheng-Chin Yu et al., 2012), MRT using RFID (Wu, Yu, & Weng, 2012), smart card Mykad (Neo et al., 2012), using NFC for mobile phone payment (Chen and Chang, 2013).

Sheng-Chin Yu et al utilized UTAUT to reveal prepared utilization of smart card systems among vendors and their customers. One example of this is the plan for Taipei City Smart Card Payment Corp's proposal to expand the card's usage from transportation to other arenas. Some proposed areas include popular venues like zoos, libraries, as well as intercity buses, public boats and retail options. All of these additions would bring convenience to the users. The study shows that there is a discrepancy between vendors and users with regards to the reasons and behavior attributes to utilize the smart card payment option. Their findings show that the major barrier to usage lie with females, older and lower educated users who do not have information with regards to the technology's

capacity. These populations also do not have facilitating conditions and do not have social influence which further disturb their propensity to use the new system.

Wu, Yu, and Wen researched how UTAUT could help determine the usage and consent of I Pass in Kaohsiung. The Kaohsiung Rapid Transit Corporation switched to e-tickets with the name of I Pass. This name has a dual meaning. The first meaning is that the user can travel to any place with the utilization of the card, the second meaning is that the card is personal and thus using the card, the individual has an individual, personal and more enjoyable experience as a user of the system. Users of the I Pass can utilize the following services: Kaohsiung MRT, Kaohsiung city buses, ferries, and intercity buses for a number of routes. This study was able to conclude that the planning and preparation for the rolling out of the I Pass created a strong intent which shows that expectance and social influence influences behavior intention and that these have strong influence on how the holders of I pass behave and use the card. All the moderators have moderating effects on the relationships between the latent constructs.

Neo, Yeow, Eze, & Loo, 2012 utilized UTAUT to analyze the institutions that adopted the smart card Mykad. If registered with the national transportation, Touch'n Go, payment system, Mykad works with nine different applications and functions as a debit card. As such, the Mykad card has the ability to purchase bus tickets or pay for fares on toll roads. While the Mykad card could have brought convenience to its users, it failed to capture the interests of organizations because they did not see the benefit of its utilization. As a result, the low performance

expectancy was a result of its low intention. There were proposals on how the Mykad card could heighten its endorsement by organizations and as a result also by users.

Chen & Chang, 2013 utilized UTAUT to analyze which methods by users lead to buy in by buyers in the case of NFC mobile phone application. This includes downloading, payment, E-tickets, and location identification. Owners of an NFC handset can utilize it to scan smart tags or download useful coupons from a physical advertisement as opposed to an only a virtual one on their device. The findings from this study suggest that effort expectancy has a positive effective on performance expectancy. It further shows that performance expectancy and social influence have a positive effect on the adoption and feelings about technology use, but skepticism of adopting new technology might have a negative effect. This study suggests that the feelings about technology might be the most important factor that propel users to utilize the technology.

A short description of the previous research is provided in the table 2.1

No	Name of the authors, years	Titles	Model	Result
1	Sheng-Chin et al 2012	Older-Users' acceptance of Smartcard Payment System: investigation of Older-street venders	UTAUT	The result shows that there is a discrepancy between vendors and users with regards to the reasons and behavior attributes to utilize the smart card payment option. Their findings show that the major barrier to usage lie with females, older and lower educated users who do not have information with regards to the technology's capacity. These population also do not have facilitating conditions and do not have social influence which further distrub their propensity to use the new system.
2	Wu, Yu, and Wen 2012	A Study on User Behavior for I pass by UTAUT: Using Taiwan's MRT as an Example	UTAUT	This study was able to conclude that the expectancy and social influence influences behavior intention and that these have strong influence on how the holders of I pass behave and use the card. All the moderators have moderating effects on the relationships between the latent constructs.
3	Neo, Yeow, Eze & Loo 2012	Organisations Adoption of Mykad Initiative	UTAUT	As a result, the low performance expectancy was a result of its low intention. There was proposal on how the Mykad card could heighten its endorsement by organizations and as a result also by users.
4	Chen & Chang 2013	User acceptance of near field communication mobile phone service: an investigation based on the unified theory of acceptance and use of technology model	UTAUT	It further shows that performance expectancy and social influence have a positive effect on the adoption and feelings about technology use, but skepticism of adopting new technology might have a negative effect. This study suggests that the feelings about technology might be the most important factor that propel users to utilize the technology.

2.2 Framework research

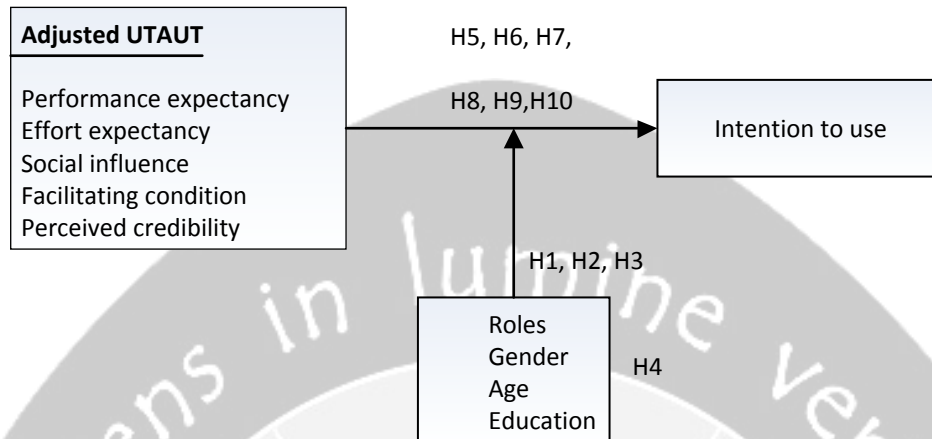


Figure 1: Research model (source Chin Yu et al, 2012)

a. Performance Expectancy: is related to the ability of the system to help users and customers enhance their ability to perform a certain task. The five constructs from the different models that pertain to performance expectancy are perceived usefulness (TAM/TAM2 and C-TAM-TPB) extrinsic motivation (MM), job-fit (MPCU), relative advantage (IDT) and outcome expectations (SCT) (Venkatesh et al., 2017). In the context of this study, performance expectancy is the adoption of the idea by users that buying into the payment system of Trans Jogja will be both beneficial and convenient. The user's belief that may receive something in return for participating in the payment system.

b. Effort Expectancy: is related to how conveniently the system can be utilized, as well as the barriers to and effort needed to convince users to adopt (Maduku, 2015). Three constructs from the existing models capture the concept of effort expectancy: perceived ease of use (TAM/TAM2), complexity (MPCU), and ease

of use (IDT) (Venkatesh et al., 2017). In the context of this study, the effort expectancy assumes that the user believes and is convinced that they will find the Trans Jogja payment system to be convenient and readily usable.

c. **Social influence:** is related to user perception of how much or how little the system is utilized by other users (Hsu et al., 2014). Social influence as a direct determinant of behavioral intention is represented as subjective norm in TRA, TAM2, TPB/DTPB and C-TAM-TPB, social factors in MPCU and image IDT (Venkatesh et al., 2017). In the context of this study, social influence alludes to the societal acceptance of a within a user's purview and knowledge which might compel the user to adopt or not adopt the Trans Jogja payment system or to utilize the Trans Jogja payment system.

d. **Facilitating condition:** is related to the perception of the user and how well they think the system is supported and implemented (Cimperman, Makovec Bren?i?? and Trkman, 2016). Concepts embodied by three different constructs; perceived behavioral control (TPB/DTPB, C-TAM-TPB), facilitation condition (MPCU) and compatibility (IDT (Venkatesh et al., 2017). In the context of this study, facilitating conditions are equated with the various factors in the user's surroundings that allow technology to be adopted easily.

e. **Perceived credibility:** means the weight associated by a user in the belief that there is no harmful consequence connected with use of electronic application service, that there is no financial risk, physical risk, functional risk, social risk, time-loss risk, opportunity cost risk, and information risk (Sheng-Chin Yu et al., 2012). Perceived credibility revolves around the two issues of security and

privacy. These two concepts are the main issues effecting intention by users towards adopting internet-based transaction systems (Mohamad, Building and Ismail, 2010).

f. Anxiety: is used to calculate the level of fear in application usage. Anxiety can be linked to the dread of losing an electronic payment card and other fears related to security and damage. The sense associated with anxiety is negative interaction with technology. This includes a fear of losing the Electronic card and a fear of security problems. Anxiety refers to negative emotions in cognitive states evoked in actual or imaginary interaction with computer-based technology (Loo, Yeow and Chong, 2011). Anxiety does not directly apply towards determining intention to use the Trans Jogja payment system in this study.