

Self-ordering kiosk usage and post-purchase behaviour in quick service restaurant

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Abstract

This conceptual paper aims to explore the relationship between the customer self-ordering kiosk usage and post-purchase behaviour in quick-service restaurants. The self-ordering kiosk is the latest innovative technology to be offered by restaurants to improve customer experiences, especially in quick-service restaurants. However, the assessments of customers' actual usage, as well as the question whether it motivates future behavior, have yet to be explored empirically. The Unified Theory of Acceptance and Use of Technology (UTAUT2) is found to be the most adopted model in foodservice and technology studies. To fit with the proposed research framework, the UTAUT2 model was adopted and modified by incorporating post-purchase behaviour that acts as the dependent variable. Seven theoretical propositions are suggested in reference to the literature review. This study serve as an addition to the literature of digital technology and application adoption on the menu-ordering transactions and also the foodservice system.

Keywords:

Self-ordering kiosk, usage; quick service restaurant; post-purchase behaviour; UTAUT2.

1 Introduction

Today's fast-paced world is increasingly becoming characterised by technology-facilitated transactions. Growing numbers of customers are interacting with technology to create service outcomes instead of interacting with employees. The growing use of information and communication technology (ICT) in services has revolutionised the interactions between service providers and customers and has increased the standardisation of many services. Self-service technologies (SSTs) are technologies that enable individuals to perform a task or transaction without any interaction with service personnel (Åkesson & Edvardsson, 2018; Meuter, Bitner, Ostrom, & Brown, 2005; Meuter, Ostrom, Roundtree, & Bitner, 2000; Scherer, Wunderlich, & Von Wangenheim, 2015). Service providers introduce SSTs to upsurge business productivity and efficiency (Rogers, 2015; Walker, Craig-Lees, Hecker, & Francis, 2002; Zeithaml & Gilly, 1987), and to offer customers access to services via new and convenient channels (Liu, 2012; Meuter, Ostrom, Bitner, & Roundtree, 2003; Wang, Harris, & Patterson, 2017), thereby better meeting the customers' demand and increase their satisfaction (Bitner et al., 2002).

2 Issues in the context setting

Technology has tremendously revolutionised the foodservice industry in Malaysia over the years (Euromonitor, 2017). Technology that is discussed in this study is the self-ordering kiosk or digital ordering, which is still lacking in the foodservice industry (Siniah, 2011; Zulkifly, 2017). This is due to the fact that the cost of the implementation of this technology is expensive. However, in the long run, this technology will help to reduce the restaurants' financial burden (Park & Shin, 2017). Furthermore, using digital ordering kiosk will generate customer satisfaction towards enhanced-ordering experiences (Dixon & Kimes, 2012). For that reason, the system in self-ordering kiosk needs to follow the principles of menu psychology and menu engineering such as the use of colours, background, layout and pictures (Wang, Harris & Patterson, 2012; Tian, 2015).

Other than that, there are issues with human errors and service failures by the traditional method ordering system such as language barrier or misspelling of orders (Chan, Tang, & Sou, 2017; Hsu & Wu, 2013; Zulkifly, 2017). Furthermore, during peak hours, the waiting staffs would not be able to entertain all customers at once. Usually, when visiting restaurants, customers have to wait to communicate with the waiting staffs (waiters), however since the alternative of technology is available and accessible, customers do not have to wait for waiters but they can use the technology on their own (Chang et al., 2015), and thus reducing the customers' waiting time (Collier, Breazeale, & White, 2017; Zulkifly, 2017). According to Kimes (2008), the technology can advance the menu since it has the ability to surge the speed of the service, besides providing higher chances to alter meals and provide customers with more specific data where it can lead to and assist customers' satisfaction. Therefore, the application of technology in menu-ordering can reduce these errors and failures.

The fast-food industry has begun the implementation of touch-screen technology as a part of their business plans to reduce labour costs and entice the millennial generation (Cho & Fiorito, 2010; Cross, 2017; Kashif, Awang, Walsh, & Altaf, 2015; Wilson, 2011). Touch-screen technology is intended to provide a communication system between customers and the food preparation area. The general problem is that the touch-screen technology is being implemented in fast food establishments to entice millennials (Cross, 2017); however, customer acceptance of the technology in that environment has not been adequately tested (Frei, 2012). The specific problem is that it is not known how millennials accept touch-screen technology as a form of customer service interaction in fast food establishments. If millennials do not accept this technology, the cost of implementation will create a waste of financial resources and the loss of personnel (Gurau, 2012; Mc Casland, 2005; Muk, 2013).

In Malaysia, the first self-ordering kiosk or digital ordering was launched by Sakae Sushi in 2011 (Siniah, 2011) utilising iPads in the self-service ordering system. Their mission is to promote the innovation of technology that will assist all customers so that they can browse the menu and choose according to their preferences. Consequently, customer satisfaction increases because they feel important as they are involved in the dining process, but restaurateurs have to ensure that customers are ready to use the technology and will keep using it (Chevers & Spencer, 2017). The previous study contended that customer continuance can be used as a measurement tool to measure technology success rate as it contributes to customers' intention to continue using the technology as they feel it is effective and efficient (Chang et al., 2015; Chevers and Spencer, 2017). The more satisfied the customers are, the higher the likelihood that they will continue using the technology.

The acceptance and use of technology have been the subject of many kinds of research, and in the past years, several theories that offer new insights have emerged at both the individual and organisational levels and focused on a country or a set of countries (Im, Hong & Kang, 2011). Each of the several models that have been proposed in literature has the same dependent variable, usage or intention to use, but with various antecedents to understand the acceptance of the technology. Thus, an academic investigation needs to be done due to the advancement of technology-based service and the indication of crucial issues associated with customer acceptance. Furthermore, studies on how consumers accept technology-based services, focusing on behavioural antecedents are still lacking (Venkates, Davis & Morris, 2007; Venkatesh et al., 2003; Parasuraman & Colby, 2015), and this has resulted in the inability of marketers to understand and forecast the behaviour of today's consumers (Nysveen Pedersen & Thorbjørnsen 2005; Meuter et al., 2003; Parasuraman, 2000).

Many researchers claimed that studies on technology only focus on personal acceptance of technology by using intention as the dependent variable (Compeau & Higgins, 1995; Davis, Bagozzi & Warshaw, 1989; Venkatesh et al., 2003). Meanwhile, other studies have examined the application of technology on the organisation-level (Frambach & Schillewaert, 2002; Leonard-Barton and Deschamps, 1988) and have

focused mostly on instrumental beliefs as the drivers of own usage intentions (Venkatesh et al., 2007; Barron, Petterson & Harris, 2006).

According to Zulkifly (2017), future research on adoption may examine the consequences of technology to create a holistic understanding of how technological change influences the organisation or the individual. Researchers should also be looking at how technology changes individuals' views of technology. For example, how does a negative experience with technology influence a consumer's use of technology? If a consumer becomes frustrated or angry at the technology, does this change the way he or she interacts with technology or choose to implement it in the future? So much of the current research focuses on technology adoption too specifically on systems, but what may be perceived as a slight change in consumers' psychographic traits may have more profound repercussions on their intention. Therefore, to identify and qualify the psychological process of customers' perception, it is necessary to incorporate some individual difference variables.

From the above discussion, one can deduce that self-ordering kiosk has not yet to 'catch on' nor has it been empirically examined to a great extent. To understand further on the stated problem, it is very important to find out the customers' post-purchase behaviour in reference to the self-ordering kiosk located in quick-service restaurants. By understanding the relationship that is present between these specific constructs, it will not only help in terms of contributing to a broader knowledge that is relevant to the restaurateurs but it will also help them in the implementation of the self-ordering kiosk which can benefit their customers and thus increase their revenue as well as the industry of quick-service restaurants. Therefore, in addressing the research gap, this study deals with the available technology-based model which also examines the propensity for customers in using the self-ordering kiosk in quick-service restaurants. Specifically, this study also proposes the Unified Theory of Adoption and Use of Technology (UTAUT2) by Venkatesh et al. (2012), in the effort of capturing better specific post-purchase behaviour among customers in the quick-service restaurant towards the usage of the self-ordering kiosk.

3 Literature Review

3.1 Restaurant Industry and Technology

The restaurant industry is generally competitive by nature, and the restaurant operators are continually looking for better approaches to enhance their sales and maintain customer relationships (Huber, Hancer, & George, 2010; DiPietro, 2010). As a result, the restaurant industry has experienced tremendous growth as more people are consuming meals outside of their home. Due to their busy schedule, with work reducing the amount of time that people spend at home, thus dining out is the easiest way to cope with this condition. Moreover, due to these trends, restaurateurs are seeking new marketing strategies to meet new trends (Barrish, 2012).

The food service industry in Malaysia has become more challenging from time to time and has been flooded with many kinds of food from all around the world (Harrington, Chathoth, Ottenbacher, & Altinay, 2014). This food tsunami has made restaurant operators struggle to sustain. Today, the foodservice industry is perceived as a worldwide economic industry, with producers and consumers extending as far and widely as possible (Lee & Ha, 2012). From this number, it has indicated that Malaysia's economy contributor will be growing and expanding especially in the foodservice industry. Looking at the rapid growth of the sector, restaurants have to practice aggressive marketing strategies to attract new customers and retain old customers to compete in the industry (Kimes, 2008). One of the ways that restaurateurs have chosen is through the introduction of technology in the industry. Restaurants have now utilised technology to adjust the way they deliver service to their customers, for example, the alteration of menus to incorporate the additions of pictures and nutritional information (Buchanan, 2011; Huber, Hancer & George, 2010; Hsu & Wu, 2013).

3.2 Post Purchase Behaviour

In order to attract new customers to consume and experience a new system in the restaurant, it involves a lot of investment from the owner to retain loyal customers as well as getting the new ones. Usually, loyal customers would attract their friends and family as new customers through word-of-mouth marketing. Compared to the research on the initial adoption, relatively few studies examined customer behaviours on foodservice technology adoption. Thus, this section tries to portray the importance of customer retention in the restaurant industry.

According to the research on IT systems, actual use is the crucial factor in explaining the system's effectiveness (Devaraj & Kohli, 2003; Zhu & Kraemer, 2005). In marketing, previous researches on post-adoption showed that the usage pattern of a particular service has a significant influence on various behavioural reactions such as satisfaction, interest in new-emerging technology, and the intention to purchase and re-purchase. The study of behavioural responses can be traced back to Ajzen (1991) who mentioned that the behaviour could be predicted from intentions that react to certain behaviours (Baker & Crompton, 2000).

The post-purchase intention is the tendency for consumers to re-purchase goods or services at the same place as before and deliver their user experiences to friends and relatives (Cronin et al., 2000; Wang et al., 2004; Zeithaml et al., 1996). Repurchase intention is when an individual intends to purchase a good and/or service from the same firm that they purchased it from before (Hellier, Geursen, Carr, & Rickard, 2003), particularly when the reason for this repurchase is primarily based on their past-purchase experiences. Meanwhile, Boulding et al. (1993) considered the repurchase and word-of-mouth (WoM) intentions to affect a consumer's post-purchase intention. To evaluate post-purchase intention, Zeithaml et al. (1996) looked at five dimensions (i.e., loyalty, switch, pay more, external responses, and internal responses).

The WoM concept works off the assumption that enterprises can spend less on marketing to retain old customers than they can generate new ones (Zeithaml et al., 1996). WoM intention suggests that consumers who have used a certain product and/or service intend to share their experiences to other consumers in the market for a similar product and/or service (Westbrook, 1987). Consumers who have not experienced or fully understand the properties of a certain product or service usually rely on WoM to acquire product and/or service information. Compared with external marketing strategies, WoM is considered to be more reliable and thus influential to customers (Harrison-Walker, 2001)

3.3 Unified Theory of Acceptance (UTAUT)

In 2012, Venkatesh and his colleagues extended the UTAUT model to pay specific attention in regards to the consumer-use context rather than its original purpose, i.e., technology acceptance and use among employees. This has contributed towards the presence of UTAUT2, which involves three significant dimensions: Hedonic Motivation, Price Value and Habit, in addition to the original three dimensions (i.e. Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions). To conclude, Venkatesh et al. (2012) particularly identified seven dimensions of customer acceptance and use of technology, i.e. Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Price Value and Habit. Based on Lewis et al. (2013), the UTAUT2 model serves as a basis and it has also been applied by many organizational technologies types of research. In the next section, the research proposition developed earlier based on the issues raised in this study will be further discussed.

4 Proposition Development

4.1 Performance Expectancy

Performance expectancy is among the strongest predictors of customer behaviour about the technology usage (Ariaeinejad & Archer, 2014; Escobar-Rodriguez & Carvajal-Trujillo, 2014; Raman & Don, 2013; Venkatesh et al., 2012). In this context, performance expectancy refers explicitly to “the degree to which using technology will provide benefits to consumers in performing certain activities” (Venkatesh et al. 2012, p.159). Therefore, when it involves the use of technology, consumers are (at least in part) extrinsically motivated in using it, and this is due to its utilitarian values (i.e. perceived usefulness and outcome expectations) (Venkatesh et al., 2003).

In reference to the industry of food service, performance expectancy includes the restaurant-related activities by which consumers can make full use of the self-ordering kiosk. Several researchers have already added these theories in predicting consumer behaviour regarding the menu decisions (Filiari, Alguezaui & McLeay, 2015; Horner & Swarbrooke; Buhalis, 2013). In reference to this specific concept, it can be assumed that the satisfaction and continuous usage intention of self-ordering kiosk rise if a customer recognises its benefits in self-service technology. The first proposition is as stated below.

Proposition 1: Performance expectancy from using self-ordering kiosk positively affects customer post-purchase behaviour.

4.2 Effort Expectancy

Effort expectancy has to do with the ease of using a technology (Venkatesh et al., 2012). With the presence of technology advancement, increasingly higher-tech features will be used. Elements such as graphics interfaces, touchscreen displays, and size offerings of touchpads are among the available aspects which represent the 'ease-of-use' (Mroz, 2013). Notably, in this study, the effort expectancy represents the ease associated in the use of self-ordering kiosk and it is highly believed that it is significant for the initial and continuous usage intention by the consumers.

It has been shown in previous studies that effort expectancy is considered as an important determinant when it involves the aspects of user adoption and behaviour (Ariaeinejad & Archer, 2014; Escobar-Rodriguez & Carvajal-Trujillo, 2013; Raman & Don, 2013; Venkatesh et al., 2012). Therefore, it is arguable that when a self-ordering kiosk is easy to use, consumers will be more likely to use it, and this relates back to the idea of usage attention. Apart from that, it has been agreed by restaurant experts that the services need to be user-friendly so that it will meet the international standards (e.g. language, layout, connectivity, etc.) (Bai, Law & Wen, 2008). This also brings in the idea that self-ordering kiosk needs to be aligned with the technical understanding of its users besides meeting the restaurant ordering system's literacy. If this fails to be achieved, it can be said that self-ordering kiosk in quick-service restaurants will be perceived as being too complex, thus contribute negatively towards the purchase decision. Hence, the second proposition is as stated below:

Proposition 2: Effort expectancy while using self-ordering kiosk positively affects customer post-purchase behaviour.

4.3 Social Influence

It has been proven that social influence is a significant predictor of the acceptance as well as the use of technologies across different contexts (Venkatesh et al., 2012), and this includes the areas involving healthcare (Ariaeinejad & Archer, 2014; El-Wajeeh, Galal-Edeen & Mokhtar, 2014), mobile banking (Zhou et al., 2010), education (Raman & Don, 2013) and hospitality (Wang & Wang, 2010). Social influence has primarily been defined as "important others" who influence others around them to engage/disengage with certain items, beliefs, ideas etc. (Venkatesh et al., 2012, p.159). In relation to the present research context, those "important others" signify different sources which influence ideas, thoughts and/or behaviour that relate to hotel mobile apps (Wang et al., 2016). These include friends and relatives, who are believed to have a positive impact on the initial and continuous usage of the self-ordering kiosk (El-Wajeeh et al., 2014; Muzaffar, Chapman – Novakofski, Castelli & Scherer, 2014).

According to the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB), the notion of social influence is basically from subjective norms, more

specifically, “the perceived social pressure to perform or not to perform a behaviour” (Ajzen, 1991, p.188). Accordingly, among the essential influencers are friends, parents and other family members in particular (Gass & Seiter, 2015). In addition to family and friends, a restaurant itself can also have a significant influence on consumers’ initial and continuous usage intention. This is particularly true when considering how intertwined self-ordering kiosks are with their service agendas. Hence, the third proposition is suggested as follows:

Proposition 3: Social influence in using self-ordering kiosk positively affects customer post-purchase behaviour.

4.4 Facilitating Conditions

Facilitating conditions refer to “consumers’ perceptions of the resources and support available to perform a behaviour” (Venkatesh et al., 2012, p.159). This construct is also known as a significant predictor of user adoption and behaviour across a broader research area; in healthcare area in particular (Ariaeinejad & Archer, 2014; Zhou et al., 2010), mobile tour guides (Lai, 2013) and not excluded, the internet banking industry (Foon & Fah, 2011). Based on this study area, facilitating conditions represent the resources and support that are available to consumers in terms of using the self-ordering kiosk. These can vary “significantly across application vendors, technology generation, [and] mobile devices [...]” (Venkatesh et al., 2012, p.162).

In the context of self-ordering kiosk specifically, quick-service restaurants will also have a chance in contributing towards the long list of facilitating conditions. For instance, hotels can increase awareness towards self-ordering kiosk used in the administration by merely highlighting specific discounts, keyless systems, rewards and with these efforts, it will benefit the active promotions for consumers where they can use this chance to make full use of the app that is available. Apart from that, the unique feature of m-payment embedded in the self-ordering kiosk may also have the potential in encouraging direct menu-ordering transaction where it involves the restaurants and their customers. Thus, it is observed that the measures will positively affect the attitudes, and in turn, impact customer satisfaction and behaviour as well (Venkatesh et al., 2012). Hence, the fourth proposition is suggested as follows:

Proposition 4: Facilitating conditions in using self-ordering kiosk positively affects customer post-purchase behaviour.

4.5 Hedonic Motivation

As one of the first three new factors added to the original UTAUT, hedonic motivation is defined as “the fun or pleasure derived from using technology” (Venkatesh et al., 2012, p.161). Stemming from motivation theory, it complements the current model’s emphasis on extrinsic motivation (i.e. associated with performance expectancy) by endowing it with intrinsic motivation (Venkatesh et al., 2012). Hedonic motivation has been deemed a key predictor in a variety of studies related to consumer technology acceptance and use (Wang et al., 2013; Lewis et al., 2013; Venkatesh et al., 2012; Magni,

Taylor & Venkatesh, 2010; To, Liao & Lin, 2007), signifying its significance towards the technology acceptance models. Thus, it is believed that this construct will act as a similarly significant role to predict the consumers' initial and continuous usage intention in reference to the self-ordering kiosk.

For this study, hedonic motivation involves the aspects of the self-ordering kiosk which is perceived as fun, enjoyable and/or entertaining by consumers. Integrated app features are included which mainly act as platforms in encouraging users in achieving their rewards points, and those features also allow them for social media sharing or within the app communities themselves (Ahtinen et al., 2009). Even all the menu in the restaurant can be viewed and can be classified as hedonic, as they provide information about the menu in a creative, vivid and interactive manner (Ahtinen et al., 2009). Hence, the fifth proposition is suggested as follows:

Proposition 5: Hedonic motivation in using self-ordering kiosk positively affects customer post-purchase behaviour.

4.6 Price Value

It has been proven that the price highly impacts consumers' usage adoption for using technological devices and services (Escobar-Rodriguez & Carvajal-Trujillo, 2013; Chong, 2013; Prata, Moraes & Quaresma, 2012; Toh et al., 2009; Munnuka, 2004). Price value also serves as the cognitive tradeoff between the perceived benefits of a product and/or service and the monetary costs for using them (Venkatesh et al., 2012, p.161). Venkatesh et al. (2012) stated that price value is positive "when the benefits of using a technology are perceived to be greater than the monetary cost" (p.161). In reference to this study, the benefits of using a self-ordering kiosk are also considered as additional perks by customers, as the apps are particularly made available for free. The free-to-download aspect of the self-ordering kiosk significantly influences the usage intention of consumers.

In terms of the marketing perspective, the price has often been defined together with the quality of a product or service in measuring the perceived value (Zhou, Lu & Wang 2010). The self-ordering kiosk basically influences consumers' usage intention. Basically, the infinite options of the self-ordering kiosk as well as its additional available features (Mroz, 2013), have caused these complementary apps in functioning as a validity pointer besides helping the prospective users in terms of assessing their values. Below is the sixth proposition included in this study:

Proposition 6: Price value from using self-ordering kiosk positively affects customer post-purchase behaviour.

4.7 Habit

Habit is the next construct which is added to the original UTAUT by Venkatesh et al. (2012). Habit revolves around predicting technology usage behaviour (Escobar-Rodriguez & Carvajal-Trujillo, 2014; Lewis et al., 2013; Pahnla, Siponen & Zheng, 2011; Liao, Palvia & Lin, 2006). There are two distinct theoretical viewpoints which highlight

how habit influences technology usage (Kim et al., 2005; Limayem et al., 2007; Venkatesh et al., 2012). The first is the “habit/automaticity perspective” (HAP), which asserts that the use of technology has to do with one’s automatic response to routinised behaviour rather than a conscious process (Kim et al., 2005; Limayem et al., 2007; Venkatesh et al., 2012). The second is the “instant activation perspective” (IAP), which involves habit as a result of cognitive processing (Kim et al., 2005) where it highlights on the technology usage in a continuous manner; the desire to use technology is fixed (at least temporarily) in the minds of consumers and is strengthened by continuous usage (Kim et al., 2005; Venkatesh et al., 2012).

These two perspectives are different in a way that it “is whether conscious cognitive processing for the makeup of intention is involved between the stimulus and the action” (Venkatesh et al., 2012, p.164). As a result, these two underlying theories of habit (i.e. HAP and IAP) can conceivably function in the same way and in line with each other. Within the scope of this study, the habit can be viewed as an acquired behavioural pattern which later urges for the need to regularly use the self-ordering kiosk.

Proposition 7: Habit of using self-ordering kiosk positively affects customer post-purchase behaviour.

5 Proposed Conceptual Framework

Based on the above arguments and propositions, a conceptual framework has been developed. The framework comprises of seven dimensions of Venkatesh (2012) UTAUT2, in which have been suggested by previous literature (past studies). The hypotheses relationship between the seven dimensions of customer’s usage and post-purchase behaviour are developed based on the propositions by the preceding researchers. Thus, the conceptual framework is presented in figure 1.

Grounded by the selected paradigms and the context of the study, a quantitative approach is considered to be the most appropriate method. This study specifically proposes the utilization of cross-sectional research design in digging out the relationships between the predictor variables: the determinants affecting customers’ usage and post-purchase behaviour. Survey for this research should be derived from the survey questionnaires taken by individual customers who have experienced using a self-ordering kiosk in a quick-service restaurant.

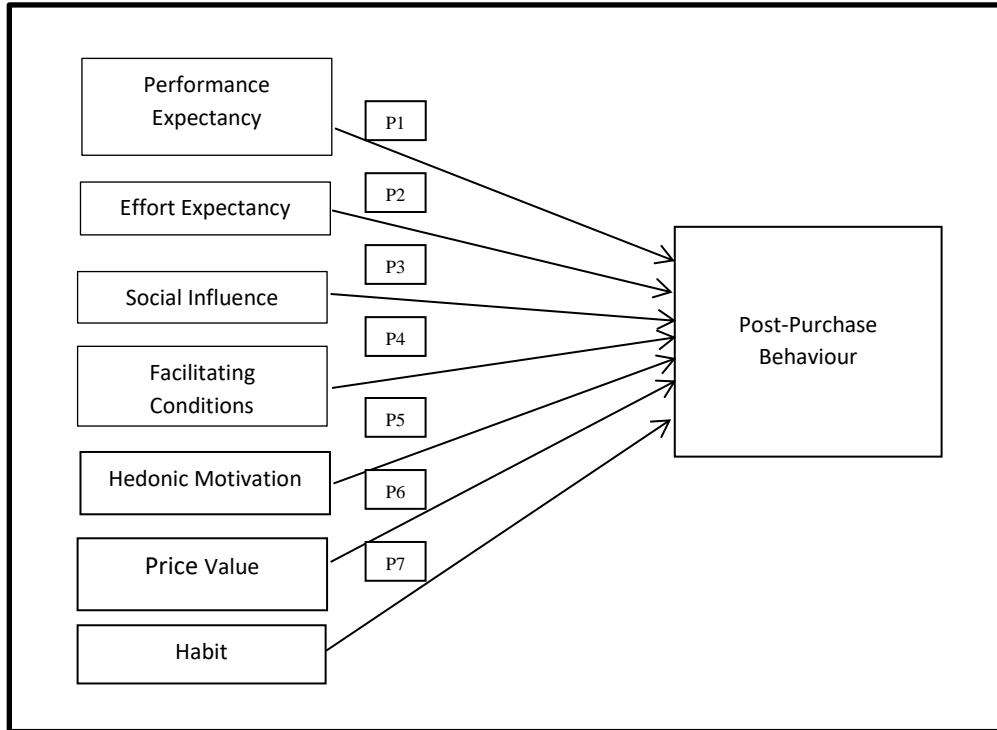


Figure 1: Proposed Theoretical Framework

6 Conclusion

This study will empirically develop and validate a model that conceptualizes the influence of UTAUT towards customers' post-purchase behaviour and usage of the self-ordering kiosk in quick-service restaurants. This study offers a number of notable theoretical and managerial contributions by addressing critical gaps in the current literature.

6.1 Academic Contribution

From an academic perspective, this study adds to the existing body of knowledge on technology acceptance by which it extends the UTAUT2 model with the addition of the factor post-purchase behaviour. It also further provides the relation between the findings to existing empirical evidence. This study will serve as an addition to the literature of digital technology and application adoption on the menu-ordering transactions and also the foodservice system as a whole. The findings of this study will open the floodgate for other researchers or scholars to embark on this field of interest probably with an extended framework and much broader population in future.

6.2 Practical Contribution

With the discoveries and in-depth review regarding consumers' post-purchase behaviour particularly on self-ordering kiosk usage, this research will benefit the industry practitioners, i.e. the restaurant marketers, restaurant investment decision-

makers and the digital restaurant menu ordering developers as it provides a glimpse into the workings of a self-ordering kiosk return on investment (ROI). Generally, this study will lead towards a better understanding in terms of customer adoption and preferences specifically on menu ordering system which is suggested to be integrated into companies' current marketing and product distribution models; and it is particularly important given the advantages of menu-ordering system initiatives, whereby restaurateurs can reduce costs and provide real-time information regarding the things or discounts they offer by communicating with customers using the digital technology platform. This study will also provide restaurateurs with a broad body knowledge in terms of self-ordering kiosk features that their customers are most likely to use, thus ensuring relevant content that will maximise the number of users progressing to make final foods ordering.

7 About the Author

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