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Investigating the Moderating Effects of Age and Gender on Customers' Use of Tablet Menu in Casual Dining Restaurants

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ABSTRACT

This paper examines the effects of the moderating variables age and gender on the acceptance and use of tablet menus in casual dining restaurants. Following an extended version of the UTAUT model, this study employs five determinants of intentions to use: performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation. Personal distinctions like age and gender are significant in understanding how and why consumers make distinctive choices for technology embracement. A survey instrument collected customer data (n = 437) visiting casual dining restaurants in the Klang Valley in Malaysia. Data were analyzed using structural equation modeling to test the validity of the moderating hypotheses. The moderating effects of age and gender were tested utilizing a multi-group analysis. The findings confirm that age is the primary dependable demographic indicator of self-service technology utilization by customers. The study found that young consumers, compared to elderly consumers, tend to have a more positive approach toward embracing technology. Similarly, gender is also a discrete individuality that influences people's objectives to embrace novel technology. Findings suggest that men are more likely to have progressed computer abilities in contrast to women.

KEYWORDS

Age; gender; casual dining restaurants; tablet-based menu; UTAUT

Introduction

The menu has been considered as the primary tool for sales and communication in restaurant operations. With technological advances, restaurateurs have tried to improve menus to make them more appealing to boost sales and enhance customers' ordering experience. Technology is undoubtedly one of the ways to accomplish this goal. Henceforth, technological innovations have emerged as exceptionally significant to the industry due to the opportunities offered to minimize the operating cost, position better proficiency, reduce human errors and service failures, and expand consumers' services. In this

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context, there has been an increase in the application of technology in restaurants, such as online ordering, mobile apps for order and payments, and electronic tablet-based menus. Upscale restaurants started introducing tablets like the iPad as digital menus to replace traditional paper menus (Kendall, 2010). The digital menus aim to improve the customer experience by including more photos and videos to showcase the available dishes, thus making the decision-making process more interactive (Wang & Wu, 2013). Additionally, restaurants are increasingly mindful that incorporating and using technology can energize individuals to engage with them. Integrating technology will allow the customers to remain longer (i.e., possibly ordering and eating more) and post appraisals and reviews regarding their social media involvement sites like Facebook, Instagram, TripAdvisor, etc. Furthermore, patrons can order their food, play games, pay their checks, and watch movie previews with the devices provided at their respective tables concurrently (Buchanan, 2011; Wang & Wu, 2013), making it a worthwhile encounter. Similarly, tablet-based menu ordering is also the most acceptable approach in combating human mistakes and service disappointments via the conventional strategy of taking and delivering the food order (Wang & Wu, 2013).

According to the Malaysian Department of Statistics, (2015), food and beverage facilities make up 25.1% of the service industry. The Economic Census on Food and Beverage Services showed a rise in gross production from 5.1% in 2010 to 12.2% in 2017 (Department of Statistics, 2019). The restaurant sector in Malaysia has a multifaceted array of restaurant genres that has evolved steadily over the last two decades. The current study was conducted in Malaysia as food service plays an important role globally, particularly in Malaysia, due to tourism development and the phenomenon of Malaysians eating out (Yim & Yoo, 2020). Malaysia is the third wealthiest country in Southeast Asia, and its foodservice market, around US\$20.1 billion in 2018, should grow 4.3% annually from 2019 to 2023 (Yim & Yoo, 2020).

In recent times, several restaurants have focused on offering delicious food and excellent service to their customers. However, some customers are not satisfied and constantly complain about the ordering system. The majority of the restaurants practice the traditional method of using paper and pen for noting down the guest order. This approach requires more extended time for the waiters to write the guest's selections on the order pad and pass them to the kitchen (Yim & Yoo, 2020). This process slows down the flow of ordering and is a common problem in many restaurants. In certain conditions, when the restaurants are full of customers, this method of order taking is not efficient. It tends to result in improper communication to the kitchen, which might result in guest dissatisfaction. Since the service staffs are human, there could be instances when they take or write a wrong order (Beldona et al., 2014). This position can occur when many food orders are given at a particular time (Ahn & Seo, 2018). This situation will make customers disappointed with the

services offered to them and reduces the restaurant's popularity. Every restaurant provides its food delicacies listed on a printed menu. The issue with these printed menus is that sometimes there are no pictures or detailed information about the menu's dishes. Another problem is the long waiting time for the food to be prepared and served. Guests, especially those with small children, become impatient if the food takes too long to be served.

Tablet menus offer a solution to all of these problems, whereby the guests can order directly from the tablet with precise information to the chef (Ahn & Seo, 2018; Beldona et al., 2014). The order is placed directly to the kitchen without the service staff's requirement. While the guests wait for their food to arrive at their table, they can use the tablet to browse through the videos of the dishes offered in tablet menus. They can also browse through the different content available on the internet without getting impatient if the food has been delayed. Guest can even use these tablet menus for making the payments directly to the cashier Chouhan, et al., (2017).

The distinctive benefits of tablet menus come from digital displays, allowing consumers to browse and choose food products and have enhanced visuals and descriptions about foods (Yim & Yoo, 2020). Tablet menus also present a tremendous amount of information, which can be easily altered without much-added cost. They facilitate cross-selling opportunities by suggesting beverage pairings with dishes that customers want to order. As a result, digital menus foster consumers' interaction, resulting in more vivid mental images of food selection, more enjoyment, improved convenience, stronger encouragement for food selections, and, more importantly, increased sales (Yim & Yoo, 2020).

Technology can enhance the menu to raise the service speed, have a better chance of altering menus, and supply consumers with more accurate data to contribute to customer satisfaction (Kimes, 2008). Furthermore, incorporating nutritional knowledge such as calorie counts, nutrient details, and ingredients used in the menu will give additional value to health-conscious customers (Jeong, and Jang, 2017). The restaurateurs cannot put the nutritional details on the existing conventional menu list due to space restrictions. Through a tablet menu, food ordering will allow restaurateurs to provide additional information that will benefit customers (Fajri & Salman, 2017) and includes reliable and productive facilities (Chevers & Spencer, 2017; Chang, et al., 2015).

Many technology acceptance theories have emerged, wherein the acceptance of information technology (IT) has remained a topic of interest over the past few decades. Such approaches have been applied across different contexts using several theoretical frameworks to unearth new insights into the acceptance behavior at the individual and organizational levels. A few of them are the Technology Acceptance Model (TAM) (Kim, 2016), Motivational and Self-Determination Theory (Ozturk, Nusair et al., 2016), Social Cognitive Theory (SCT) (Zhu et al., 2017), Technology-Organization-Environment Framework

(Wang et al., 2016), and Unified Theory of Acceptance and Use of Technology (UTAUT) (Escobar-Rodríguez & Carvajal-Trujillo, 2014; Lai, 2015; Palau-Saumell et al., 2019).

Self-Determination Theory links personality, human motivation, and optimal functioning. It posits that there are two main types of motivation – intrinsic and extrinsic – both are powerful forces in shaping who we are and how we behave (Deci & Ryan, 2008). It is a theory that grew out of researchers Edward L. Deci and Richard M. Ryan's work on motivation in the 1970s and 1980s. First suggested by Bandura (1977), social cognitive theory offers a basis for recognizing, interpreting, and altering human behavior. The theory is based on the Social Learning Theory (SLT), which distinguishes people's behavior as an interface between individual elements, behavior, and surroundings (Bandura, 1977). It states that a person's purpose of conducting a specific action is determined by their self-efficacy of the intended outcome (Bandura, 1977). The technology-organization-environment framework is an organization-level theory that explains three different elements of a firm's context influence adoption decisions. These three elements are the technological context, the organizational context, and the environmental context. All three are posited to influence technological innovation. Existing studies on technology acknowledgment in the hospitality industry have typically applied models including TAM (Ham, et al., 2008; Huh, et al., 2009) and TAM 2 (Kim & Qu, 2014; Suarez, 2015). In particular, researchers have specified that TAM is inadequate, mainly due to its insufficient capacity to anticipate technology acceptance, whereby it fails to do so in about 40% of cases (Ifenthaler & Schweinbenz, 2016). Consequently, Venkatesh et al. (2003) positioned the UTAUT, which is a more integrative theory than TAM and has a more extraordinary predictive ability (Ali et al., 2016).

Venkatesh et al. (2003) have comprehensively studied and compared eight leading theories of technology acceptance, thus proposing a common understanding of acceptance of technology by people in the form of the UTAUT. The approaches include TRA, TAM, TPB, MPCU, the integrated TAM-TPB, Motivational Model (MM), Diffusion of Innovations Theory (DOI), and Social Cognitive Theory (SCT). Henceforth, the model set out to capture the necessary components of these theories. It was determined using longitudinal data obtained from 215 people in six organizations presented with novel technology. In the longitudinal field study, UTAUT accounted for 70% of the variance in the behavioral intention to use technology and almost 50% of the variance in technology use (Venkatesh et al., 2003).

Several studies have utilized the UTAUT model across different trades and beliefs, yielding reliable outcomes. Lian and Yen (2014) have led researchers to recognize the drivers and inhibitors of a more seasoned user objective toward online shopping. They studied the moderating influences of age and gender on user intent to support online shopping in Taiwan using UTAUT and

innovation resistance theory. Meanwhile, Magsamen-Conard et al. (2015) identified the moderating effects of age and gender and the effect of performance expectancy (PE), effort expectancy (EE), facilitating conditions (FC), and social influence (SI) on the behavioral intention to use tablets. Khalilzadeh et al. (2017) implemented UTAUT to investigate customer behavioral intention toward near-field communication (NFC) based mobile payments in restaurants. Other studies have used UTAUT as a research model in areas such as mobile payments in hotels (Morosan & DeFranco, 2016), travel and tour guides (Lai, 2015), and diet restaurants (Okumus et al., 2018). Thus, UTAUT is a solid hypothetical model and offers scholars and academicians a theoretical ground to comprehend technology's acceptance across different settings (Nistor et al., 2014).

Although there is an indication of the previous investigation on the significance of restaurant menus and their growth (Domoff et al., 2015; Hartwell et al., 2016; Lu & Gursoy, 2017; VanEpps et al., 2016), there is a scarce about the understanding of customers' acceptance and perception toward the use of digital or electronic menus. Previous studies also lack the impact of moderating variables like age and gender on the customer's experience of ordering through the tablet menus. To the author's best knowledge, there are limited studies that focus on the acceptance of tablet-based menus (Ahn & Seo, 2018; Beldona et al., 2014; Buchanan, 2011; Lam et al., 2020; Leung et al., 2019; Suarez, 2015; Yepes, 2015). This situation leaves restaurant managers needing experiential proof to base their choices for tablet-based menu execution rather than paper-based menus. Based on the implementation of the electronic tablets and guests' responses, managers can actualize this innovation in other sections of their businesses, such as drive-through. Moreover, this study may provide the groundwork for future investigation to look at electronic tablets' impact in other hospitality industries, such as airlines and hotels. Consequently, the researcher investigated the following questions:

- (1) What antecedents influence the customers' ordering experience using a tablet menu in the dining space?
- (2) Are there any significant differences in terms of gender and age that influence those antecedents?

Considering these criteria, this research aims to understand better how moderating variables influence the relationship between antecedents and behavioral intention and use behavior toward tablet menus by pursuing various research objectives. The research objectives include identifying the antecedents that influence the customer ordering experience using a tablet menu in the dining space and assessing the customer perception of the food ordering experience by using the tablet menu. This research will also investigate the moderating effects of age and gender.

Literature review and hypothesis development

To address the research purpose and develop the knowledge and understanding of an individual's technology acceptance, this study implemented the UTAUT 2 model proposed by Venkatesh et al. (2012). The model is the most recent form of technology acceptance, incorporating significant improvements in customer technology acceptance literature (Satama, 2014). It is derived from Venkatesh et al. (2003) initial work, who proposed the UTAUT based on eight theories to address technology acceptance (Venkatesh et al., 2012). Venkatesh et al. (2012) established the UTAUT 2 model to clarify technology acceptance and use. The UTAUT 2 model has been associated with numerous settings, and its theoretical influences have been experimentally demonstrated and broadly supported by different researchers (Baptista & Oliveira, 2015; Escobar-Rodríguez & Carvajal-Trujillo, 2014; Nair et al., 2015; Satama, 2014). This model comprises seven constructs presumed to influence the intention to use technology in various contexts. These seven are performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. Venkatesh et al. (2012) also theorized that individual differences like age and gender moderately influence these independent constructs with behavioral intention and technology usage. The author has not considered price value and habit variables for this research, as these two variables do not impact this study's objectives. Figure 1 depicts the research model used in this study. The definitions of the constructs, together with the theoretical basis and the hypotheses, are explained in the following sections.

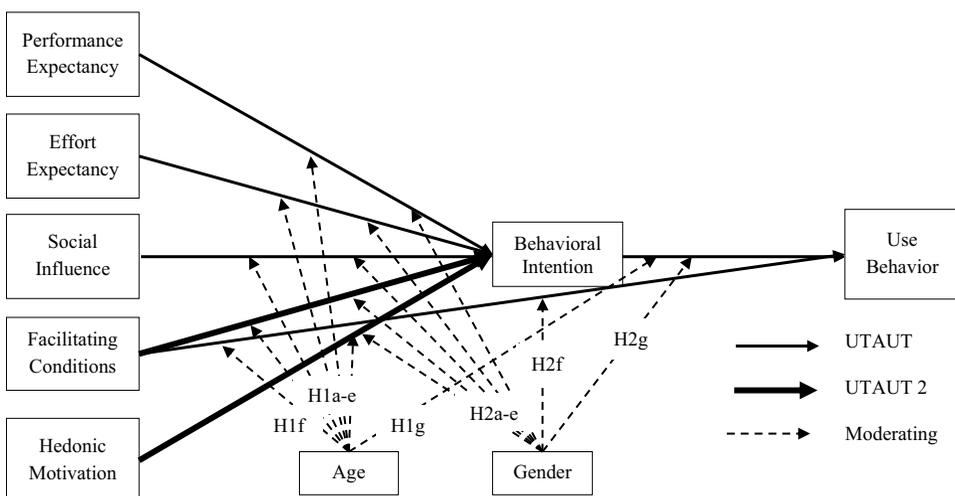
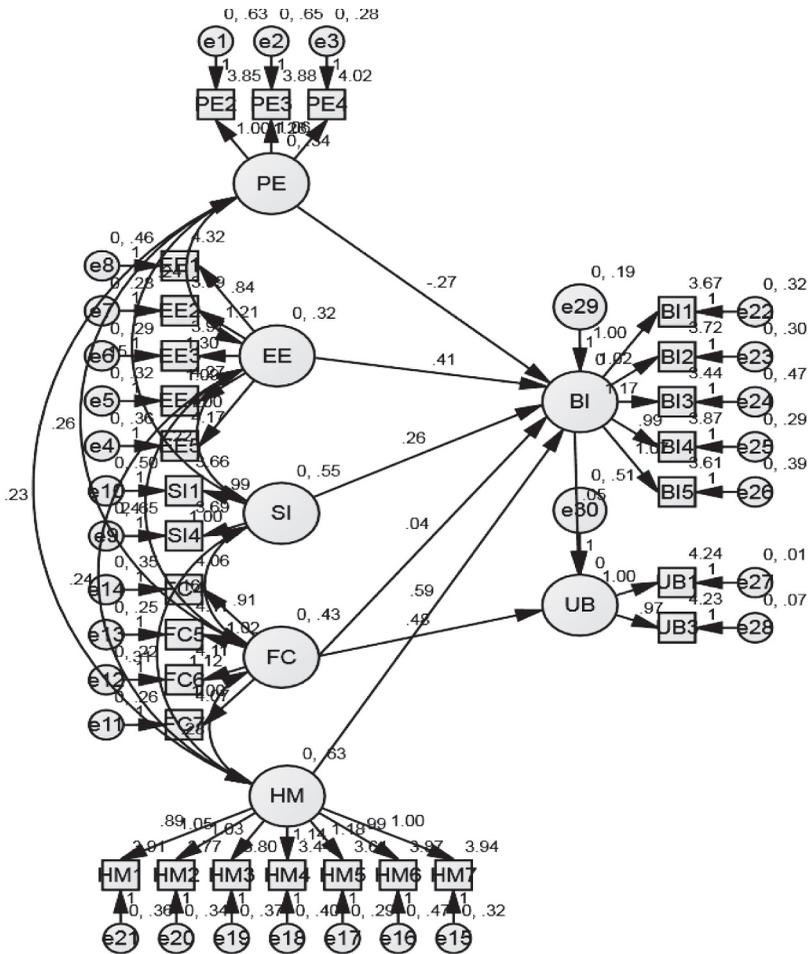


Figure 1. Conceptual framework of the study.

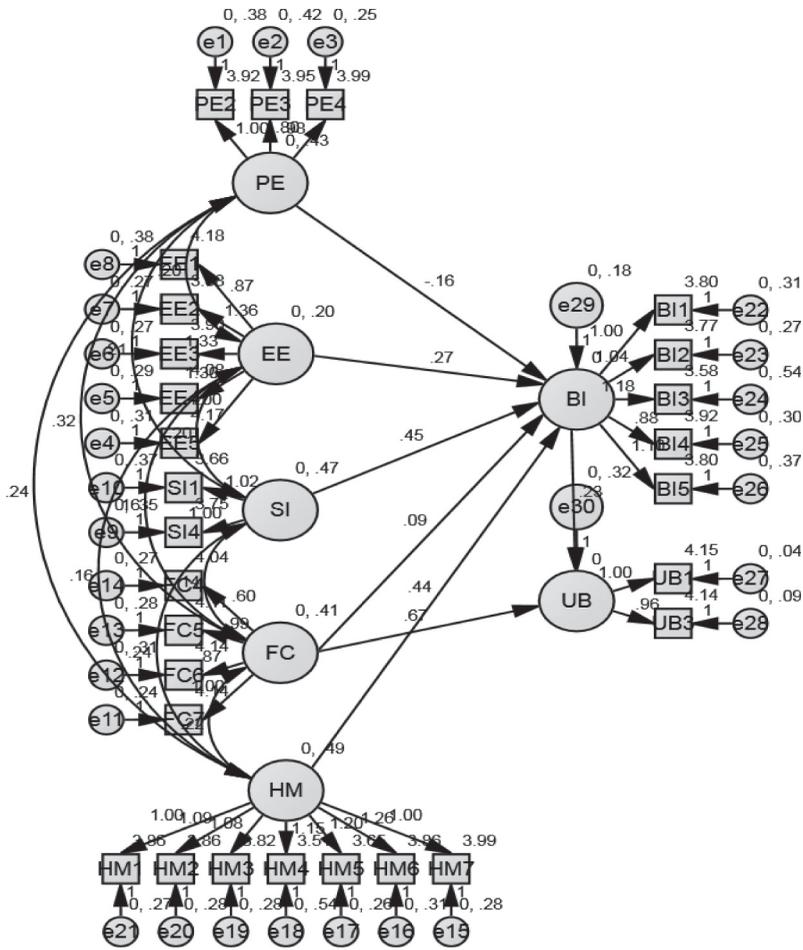


Young Respondents
 Unstandardized Estimates
 Chi-Square = 1646.357
 Degree of freedom = 666
 CMIN/df = 2.472 probability = 0.000
 RMSEA= 0.058 TLI = 0.864 CFI= 0.880
 NFI= 0.816 GFI= 0.970 AGFI= 0.865

Figure 2. The baseline model (Unconstrained model) (Multiple-group analysis) for young subjects with unstandardized estimates.

Performance expectancy

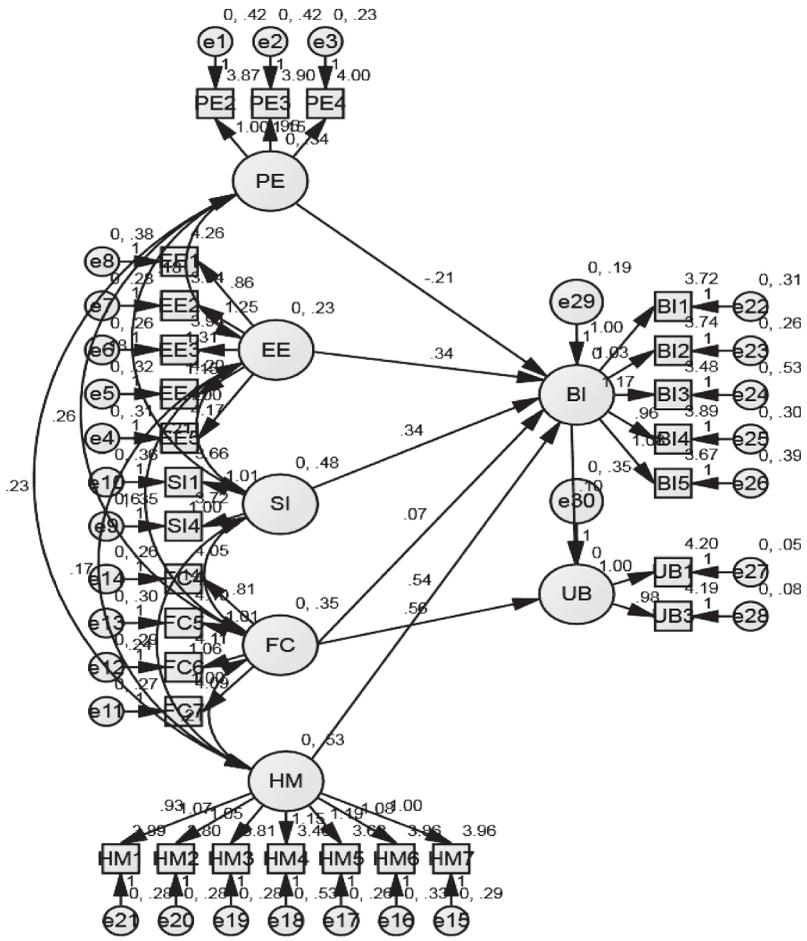
Performance expectancy is defined as “the degree to which a person believes that using the system will offer assistance to their aim to accomplish gains in job performance” (Venkatesh et al., 2003, 2012). Huang and Kao (2015)



Older Respondents
 Unstandardized Estimates
 Chi-Square = 1646.357
 Degree of freedom = 666
 CMIN/df = 2.472 probability = 0.000
 RMSEA = 0.058 TLI = 0.864 CFI = 0.880
 NFI = 0.816 GFI = 0.970 AGFI = 0.865

Figure 3. The baseline model (Unconstrained model) (Multiple-group analysis) for older subjects with unstandardized estimates.

observed that PE is the most significant determinant of an individual’s behavioral intention to use Phablet. Performance expectancy is also an essential element that affects customers’ behavioral intentions (Antunes & Amaro, 2016; Gupta & Dogra, 2017).

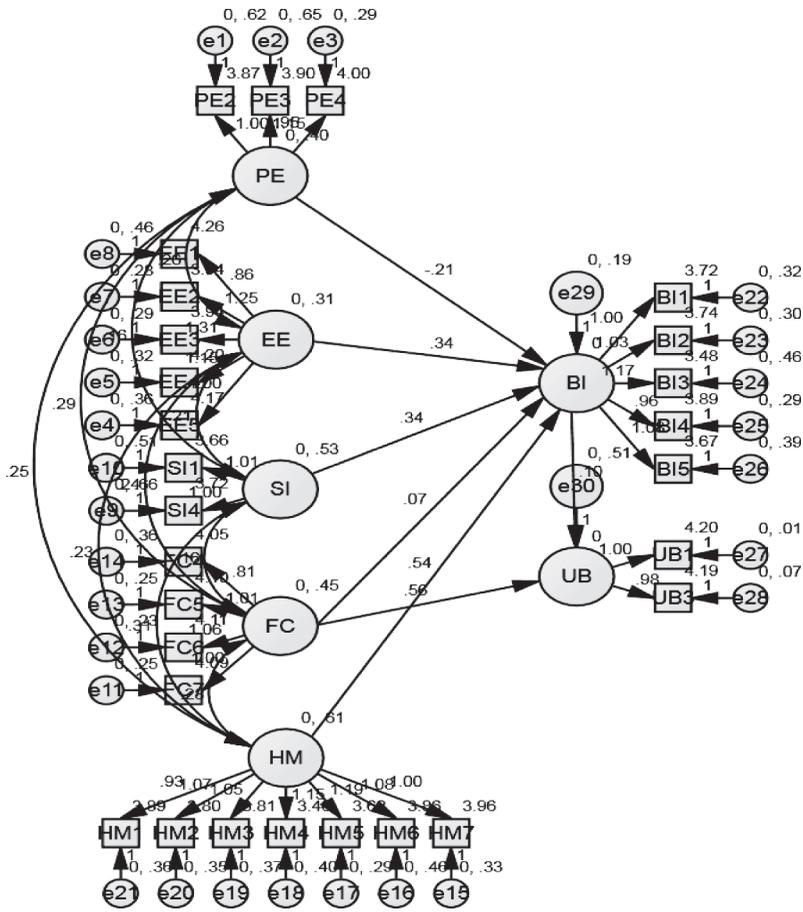


Young Respondents
 Unstandardized Estimates
 Chi-Square = 1717.401
 Degree of freedom = 722
 CMIN/df = 2.379 probability = 0.000
 RMSEA= 0.056 TLI = 0.873 CFI= 0.879
 NFI= 0.808 GFI= 0.969 AGFI= 0.823

Figure 4. The constrained model (Structural weights model) (Multiple-group analysis) with unstandardized estimates for young subjects.

Effort expectancy

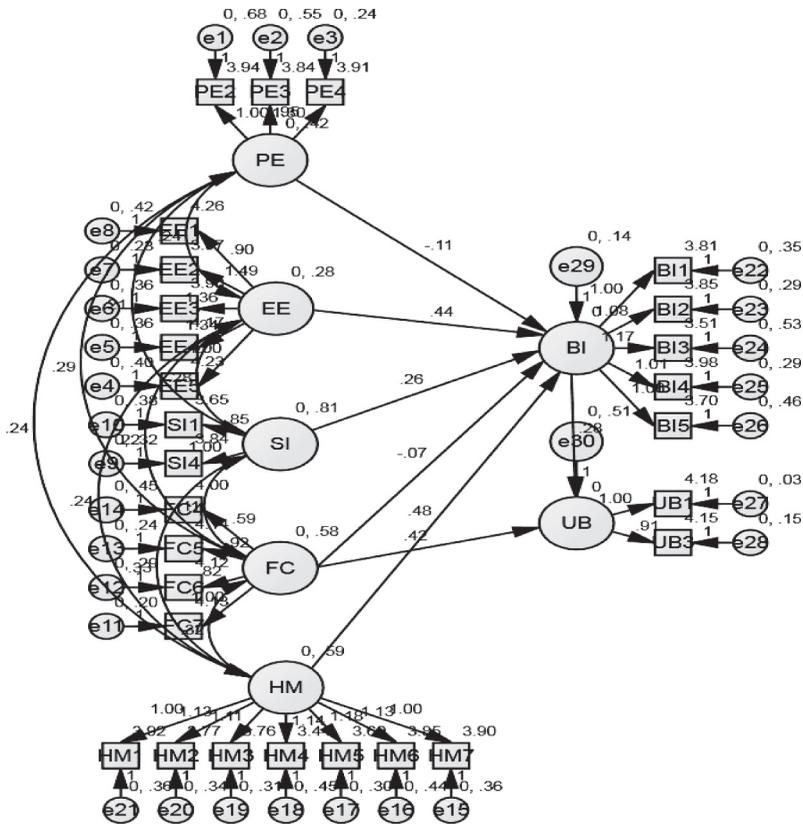
Effort expectancy is defined as the “degree of ease/effort associated with consumers’ use of the technology” (Venkatesh et al., 2003, 2012). In past experimental studies (Baptista & Oliveira, 2015; Ouattara, 2017; Venkatesh et al., 2003, 2012), the researchers have established that EE affects the



Older Respondents
 Unstandardized Estimates
 Chi-Square = 1717.401
 Degree of freedom = 722
 CMIN/df = 2.379 probability = 0.000
 RMSEA = 0.056 TLI = 0.873 CFI = 0.879
 NFI = 0.808 GFI = 0.969 AGFI = 0.823

Figure 5. The constrained model (Structural weights model) (Multiple-group analysis) with unstandardized estimates for older subjects.

consumers’ approach of utilizing in necessary and deliberate incorporation. Moreover, Davis (1989) found that EE is among the essential indicators for investigating technology consumption behavior and behavioral intention within technology acceptance.

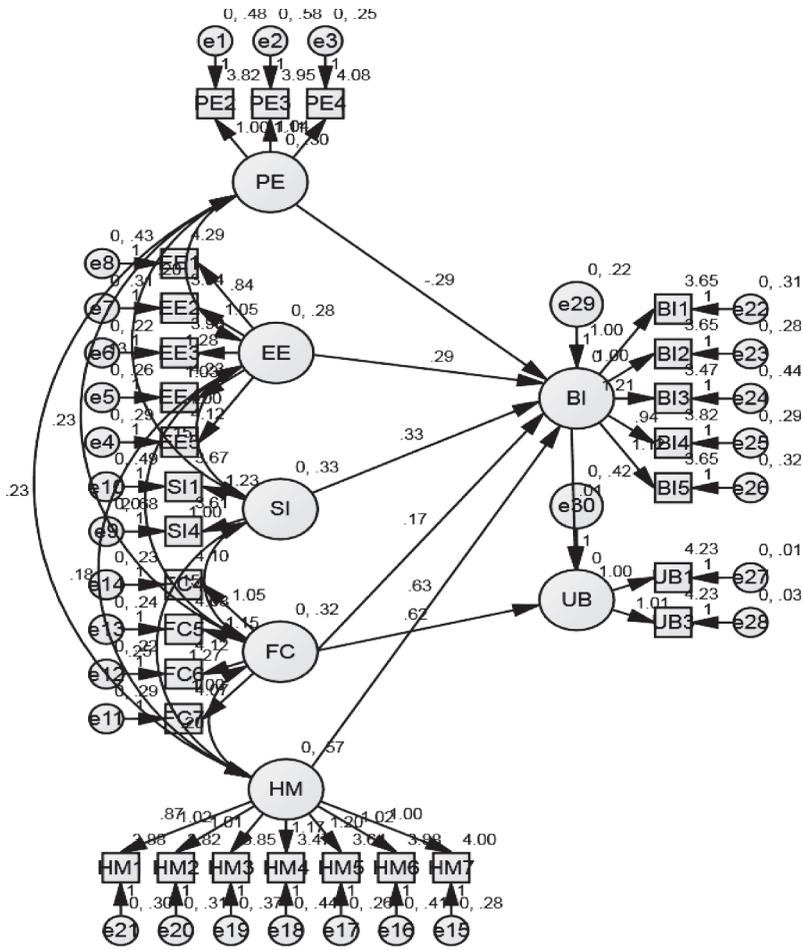


Male Respondents
 Unstandardized Estimates
 Chi-Square = 1890.252
 Degree of freedom = 666
 CMIN/df = 2.838 probability = 0.000
 RMSEA= 0.065 TLI = 0.839 CFI= 0.858
 NFI=0.779 GFI= 0.976 AGFI= 0.829

Figure 6. The baseline model (Unconstrained model) (Multiple-group analysis) for male subjects with unstandardized estimates.

Social influence

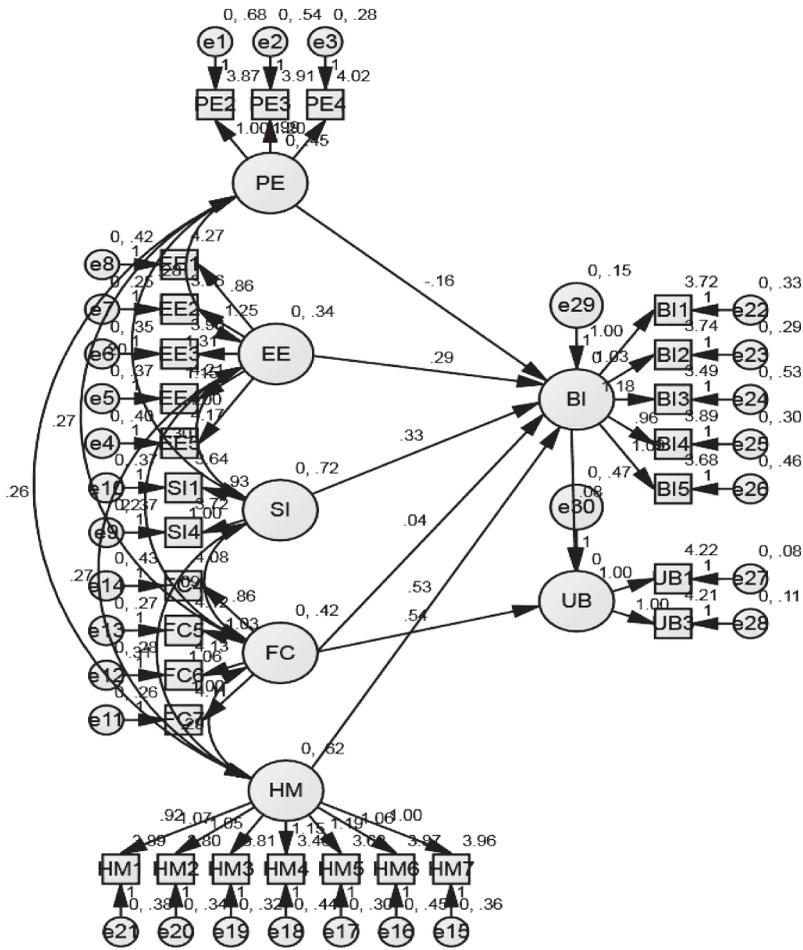
In their studies, several researchers investigated the notions of SI and demonstrated that SI influences individuals’ practices (Ouattara, 2017; Venkatesh & Davis, 2000; Venkatesh et al., 2003; Weeger et al., 2016). Social influence represents “the degree to which an individual perceives how important it is that other people believe one should use technology” (Venkatesh et al., 2003). Moreover, several authors found that SI is a significant indicator of behavior



Female Respondents
 Unstandardized Estimates
 Chi-Square = 1890.252
 Degree of freedom = 666
 CMIN/df = 2.838 probability = 0.000
 RMSEA = 0.065 TLI = 0.839 CFI = 0.858
 NFI = 0.779 GFI = 0.976 AGFI = 0.829

Figure 7. The baseline model (Unconstrained model) (Multiple-group analysis) for female subjects with unstandardized estimates.

intention to use technology where age moderates the relationship between SI and behavioral intention (Ali et al., 2016; Hew et al., 2015; Okumus et al., 2018; Venkatesh et al., 2003).



Male Respondents
 Unstandardized Estimates
 Chi-Square = 2001.114
 Degree of freedom = 722
 CMIN/df = 2.772 probability = 0.000
 RMSEA= 0.064 TLI = 0.845 CFI= 0.852
 NFI=0.787 GFI= 0.960 AGFI= 0.867

Figure 8. The constrained model (Structural weights model) (Multiple-group analysis) (Unstandardized estimates) for male subjects.

Facilitating conditions

Facilitating Conditions refer to “the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system” (Venkatesh et al., 2003). UTAUT model proposed that consumers’ recognition of facilitating conditions straightforwardly affects the appreciation

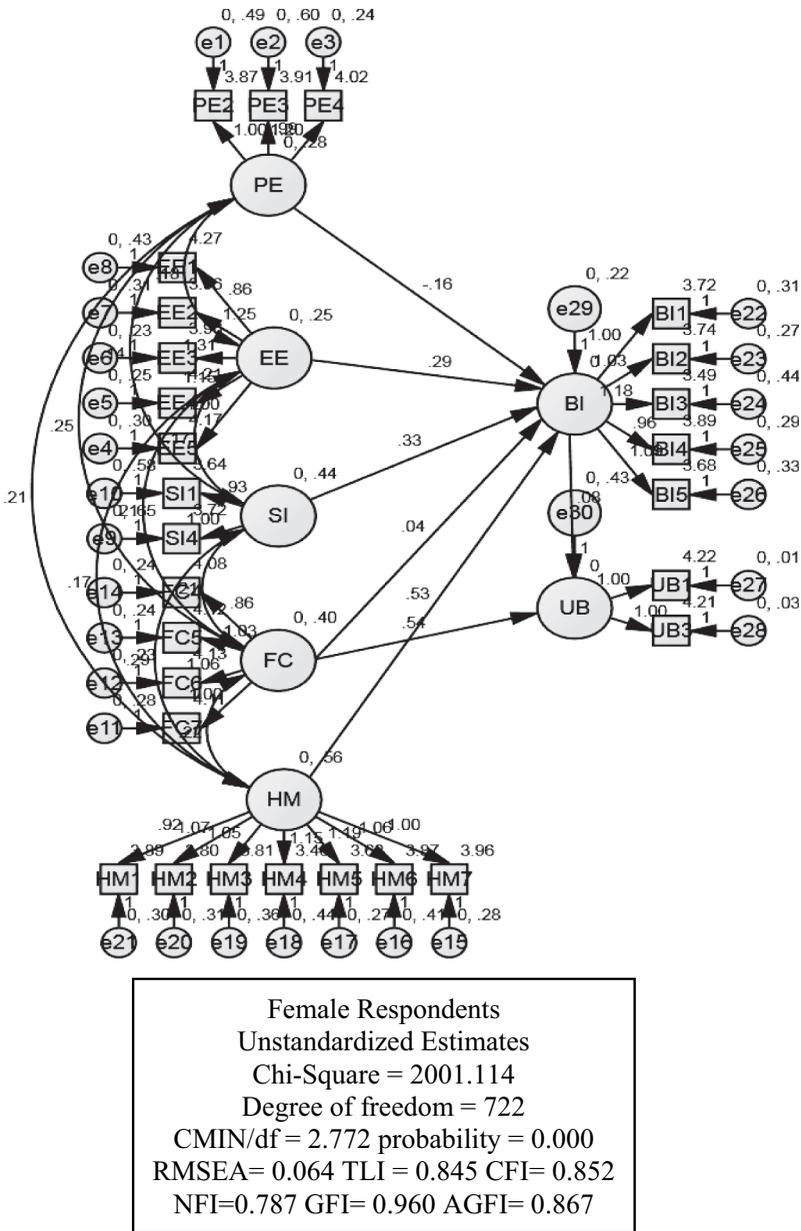


Figure 9. The constrained model (Structural weights model) (Multiple-group analysis) (Unstandardized estimates) for female subjects.

of technology because it was recognized that the surrounding environment either empowers or confines the adoption (Venkatesh et al., 2003). Different studies (Ali et al., 2016; Khalilzadeh et al., 2017; Maruping et al., 2016; Okumus et al., 2018) have verified FC in individual behaviors toward technology, and the results of these studies recognized and reinforced its significant impact on actual usage and behavioral intentions to apply technology.

Hedonic motivation

Hedonic motivation refers to “the pleasure or enjoyment an individual derives from using technology” (Venkatesh et al., 2012), and it has been shown to perform a significant part in deciding technology acceptance and use (Brown & Venkatesh, 2005). Venkatesh et al. (2012) have integrated HM into the UTAUT 2 model to supplement UTAUT, which had only the extrinsic motivation or functional benefit. From a hedonic motivation viewpoint, users aspire to enjoyment and believe that the buying process will be a pleasant experience (Ozturk, Bilgihan et al., 2016). Studies in the past have established that when customers observe higher levels of hedonic motivation, they are prompted to have positive behavioral intentions, such as repeat purchase and continued usage (Chiu et al., 2014; Kandampully et al., 2015; Ozturk et al., 2016; Rodriguez & Trujillo, 2014).

Behavioral intention and use

The two resulting variables within the UTAUT are the behavioral intention and the actual usage or conduct. BI relates to a person’s subjective possibility toward an assumed behavior (Venkatesh et al., 2012) and is an undeviating determining factor of the actual usage. Scholars in the previous numerous studies and settings exhibited that intention impacts behavior (Alalwana et al., 2018; Ramirez-Correa et al., 2015; Tan et al., 2014). Meanwhile, the intention to utilize a framework can vary over time; the behavior is the natural form of use (Arman & Hartati, 2015). The pragmatic research findings have shown that technological innovations (e.g., embracing innovation in the service distribution process) significantly impact consumer gratification and behavioral intention when patronizing a restaurant (Su, 2011).

Moderating effects of age and gender

Studies in the past have recommended that age and gender are essential demographic factors that moderate the connections between consumers’ perceptions of technology and their behavioral intentions (Palau-Saumell et al., 2019; Venkatesh et al., 2003). Previous researchers investigated the moderating effects of age and gender in UTAUT 1 and 2 between the independent variables and the dependent variable and behavioral intentions (Venkatesh et al., 2003, 2012). In UTAUT 1, Venkatesh et al. (2003) have investigated the moderating effects of age and gender between the independent variables (performance expectancy, effort expectancy, social influence, and facilitating conditions) and the dependent variable (behavioral intentions). The authors found that the impact of performance expectancy and behavioral intentions was more substantial for young men. In comparison, the effect was more

influential for older women with inadequate experience in the relationships between effort expectancy and social influence toward behavioral intentions. The authors found that age and gender moderate the relationship between facilitating conditions and behavioral intentions. The authors also found that older women implemented a more significant influence on this relationship.

Additionally, they found that age and gender moderate the relationship between hedonic motivation and behavioral intentions. Likewise, Yu (2012) found that the impact of performance expectancy on behavioral intentions and facilitating use conditions is higher in men than in women. Contrarily, other authors have examined the moderating effects of gender and age using UTAUT models; they did not find any significant results among social media users (Workman, 2014) or mobile banking users (Oliveira et al., 2014).

Studies in the past also focused on the significance of understanding how specific individualities, like age, affect intentions to utilize a technology (Jaradat et al., 2018; Rojas-Méndez et al., 2017). Morris et al. (2005) have claimed that personal distinctions like age among the consumers are significant in understanding how and why consumers make distinctive choices for technology embracement. For example, older people usually have had fewer opportunities to utilize modern technologies, so they must be introduced to contemporary technologies (Jaradat et al., 2018). According to Jaradat et al. (2018), older people tend to perceive a reduction in their cognitive capabilities to learn, which could be a barrier to embracing and using new technological developments. According to Rojas-Méndez et al. (2017), young consumers, compared to the elderly, tend to have a positive approach toward embracing the technology, demonstrating that senior individuals are inclined to communicate using interactive means instead of using novel technologies.

The effect of gender on technology adoption has received significant attention in previous studies. Several studies have examined the moderating effect of gender on technology adoption in various contexts, including mobile payment (Jose Liebana-Cabanillas et al., 2014) and mobile marketing (Karjaluo et al., 2008). Gutek and Bikson (1985) have postulated that men are more technology-savvy in comparison to women. Similarly, Rojas-Méndez et al. (2017) have stated in their findings that men tend to have a more positive state of mind toward embracing technology compared to women. However, evidence shows that gender is noteworthy in clarifying IT adoption and implementation (Rainer et al., 2003), acceptance of online activities (Shaw & Gant, 2002), and shopping patterns (Fram & Grady, 1997).

According to the study conducted by Venkatesh and Morris (2000), effort expectancy is more significant for women than men. Previous studies reinforced the impression that constructs related to effort expectancy will be strong determinants of individuals' attention for women (Venkatesh & Morris, 2000; Venkatesh et al., 2000). Drawing from the contentions made within the effort expectancy setting, it is expected that gender and age work

together. Thus, it is anticipated that effort expectancy will be most prominent for women, especially those who are elderly. Additionally, men give extra effort to overcome various confines and complications to seek their objectives compared to women. Women tend to concentrate more on the degree of exertion involved and the method to realize their goals (Venkatesh & Morris, 2000). Thus, men tend to depend less on facilitating conditions when considering novel technology, while women emphasize external supporting variables.

Age and gender are measured as the moderating factor in nearly all the UTAUT model relationships (Venkatesh et al., 2003). The concepts of technology acknowledgment models are diverse among young and old consumers, considering the influence of age. Older customers tend to confront more trouble handling modern or sophisticated information, influencing their knowledge of current technologies (Jaradat et al., 2018; Rojas-Méndez et al., 2017). Besides, gender and age have a combined influence on the relationship between facilitating conditions and intention. As individuals become older, the variation of their gender roles will be more noteworthy. Thus, older women will put more emphasis on facilitating conditions. There is empirical evidence that gender differences within the significance of facilitating conditions become more noticeable with increasing age (Morris et al., 2005; Venkatesh et al., 2003). Therefore, the effect of facilitating conditions on behavioral intention is moderated by both age and gender.

The impact of hedonic motivation on behavioral intention is moderated by age and gender due to divergences in consumers' innovativeness, novelty-seeking, and novelty observations about a targeted technology. Novelty seeking is the inclination of a person to look for unique information or motivations. Furthermore, age is associated with consumer technology innovativeness (Lee et al., 2010). Additionally, age and gender are related to customer technology innovativeness (Lee et al., 2010). Within the early stages of employing modern technology, younger men tend to show more novelty and innovativeness. This more prominent propensity will, in turn, increase the relative significance of hedonic motivation in younger men's new technology use decisions.

Hypothesis defining

Hypotheses are derived from the theory on which your conceptual model is based and are often relational. Along these lines, the hypothesis can be defined as a logically conjectured relationship between two or more variables expressed in the form of testable statements (Sekaran & Bougie, 2015). Hence, based on the above discussion and the proposed model, the author formulated the following hypotheses.

H1a-e: Age moderates the relationship between performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation with behavioral intention.

H1f: Age moderates the relationship between facilitating conditions and use the behavior of customers.

H1g: Age moderates the relationship between behavioral intention and use behavior of customers.

H2a-e: Gender moderates the relationship between performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation with behavioral intention.

H2f: Gender moderates the relationship between facilitating conditions and the use behavior of customers.

H2g: Gender moderates the relationship between behavioral intention and use behavior of customers.

Methodology

Research design

Research design outlines collecting, estimating, and investigating the data based on the study's research questions (Sekaran & Bougie, 2015). A quantitative study approach must be the most appropriate methodology for achieving the research objectives and getting the answers to this study's research questions due to the specified purposes. A quantitative research design is suitable because it requires evaluating connections between variables using a quantitative research approach.

Instrument development

A questionnaire was designed with items adapted from a prior literature review. The questionnaire for the current study was organized into two sections. The first section included six questions on the respondents' demographic characteristics, such as age, gender, education, nationality, profession, and income. The second section contained 39 questions on the significant constructs included in the proposed model. The items for the various constructs used in this study were adapted from Buchanan (2011), Davis (1989), Gupta and Dogra (2017), Kim and Woo (2016), Venkatesh and Davis (2000),

and Venkatesh et al. (2003), and Venkatesh et al. (2012), and Wang and Wu (2013), and Wang et al. (2009). Questions in the second section were measured using a five-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5).

Data collection technique

The researcher developed a self-directed questionnaire to collect data and verify the research instrument’s reliability and validity. The foremost advantage of this method would be that they offer a simple way to get replies from an impressive number of individuals (Rowley, 2014). A pretest was conducted by sending the questionnaire to seven different researchers working in Malaysia to check the questionnaire’s face validity. All of these researchers have been involved in hospitality and tourism research for a long period in Malaysia. They have the experience of utilizing technology in general and in hospitality and tourism in particular. The survey was conducted from October to December 2020. The researcher visited the various Sakae Sushi Restaurant outlets in Klang Valley and Hai Di Lao, PLOY, Sushi King, and Yayoi Japanese Teishoku restaurants in Kuala Lumpur. A Convenience Sampling method was applied where the sample was taken from a group of people easy to contact or reach. A structured questionnaire was distributed to the diners at the locations mentioned above. The researcher sought permission from the restaurant management to approach customers at the dining table to seek their participation in the research.

Data analysis technique

In this study, the author utilized two specific statistical software tools. Statistical Package for the Social Sciences (SPSS) was employed for analyzing the initial data. Analysis of Moment Structures (AMOS) version 24.0 for Structural Equation Modeling (SEM) analyzed measurement models and a structural model to assess the proposed hypothesized model. SPSS was employed to analyze the quantitative data attained from the survey. SPSS version 25.0 was used for scale measurement, descriptive analysis, and hypothesis testing. In this study, the SEM software package AMOS was employed to investigate empirical relationships between survey questions of every variable and between components of independent variables (PE, EE, SI, FC, and HM) and the dependent variable (Behavioral Intention). The rationale for choosing the SEM for statistical analysis was to provide a systematic mechanism for approving variables and predictors relationships and testing the relationship between constructs in a unified framework (Hair, et al., (2006).Hoyle, (1995). Second, it offers effective and comprehensive analytical tools to tackle complicated systems (Bryne, (2016).Hair et al., 2006; Tabachnick and Fidell,

(2007). In SEM, relationships between constructs and indicators are accepted through confirmatory factor analysis (CFA), often recognized as the measuring model, and structural relationships are evaluated using the structural model (Hair et al., 2006; Hoyle, 1995).

The instrument's reliability and validity were carried out to ensure that all the constructs were free from random error. Like other statistical methods, SEM requires appropriate data sets to get consistent evaluations. Hair, et al., (2008). have prescribed that a sample size of at least 200 and not surpassing 400 is considered proper. They also discovered that when the data set reaches 400 to 500 respondents, the SEM analysis would be too sensitive, and almost every deviation is observed, resulting in a low goodness-of-fit. It can thus be concluded that a minimum and a maximum sample of 200 and 400, respectively, are needed for SEM research studies Oke, et al., (2012) The sample size would be approximately 400 customers as the population size would be more than 20,000 (Cochran, (1977).; Hair, et al., (2010).; Krejcie and Morgan, 1970) Thus, the researcher plans to collect samples between 350 and 400 samples for data analysis.

Multicollinearity test

Collinearity representation is characterized by the analysis of the correlation matrix for independent variables. The cumulative impact of two or more independent variables signifies the model's multicollinearity effect (Hair et al., 2010). According to Field, (2013). and Kline (2015), tolerance levels below 0.1 and VIF (Variance Inflation Factor) above 10 show major issues with multicollinearity. Independent variables, performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation, reported VIF values ranging from 1.747 to 2.915 with a tolerance of 0.140 to 0.857 to the dependent variable behavioral intention. As shown in Table 1, all VIF values were less than 10, and the thresholds were greater than 0.1, indicating that multicollinearity is not troublesome in this investigation.

Table 1. Multicollinearity test.

Coefficients ^a		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.134	.532		2.083	.010		
	PE	.799	.185	.183	2.612	.000	.857	2.391
	EE	.818	.478	.272	0.788	.000	.735	1.849
	SI	.393	.749	.098	1.407	.000	.140	2.407
	FC	.164	.092	.031	1.319	.000	.398	2.915
	HM	.453	.324	.018	1.675	.000	.315	1.747

a. Dependent variable: Behavioral Intention

Note: BI = Behavioral Intention; PE = Performance Expectancy; EE = Effort Expectancy; SI = Social Influence; FC = Facilitating Conditions; HM = Hedonic Motivation

Thus, it is ascertained that the favored bias method is frequent in self-reported studies (Alalwan, 2018). Participants were advised to respond appropriately after understanding the concerns that resulted in the hindsight bias shielding as indicated by Roese & Vohs, (2012) and Podsakoff, et al., (2012), indicating that there is no issue of multicollinearity between independent and dependent variables in this study.

Data analysis and results

Reliability of the study

Cronbach Alpha test was carried out to ensure the seven constructs' internal consistency in the survey questionnaire. The Cronbach's alpha (α) denotes the questionnaire's overall reliability, and values around 0.7 are suitable for ability tests, and values below 0.7 are acceptable for psychological constructs (Kline, 2015). Table 2 displays Cronbach's alpha coefficients for all constructs used in the study. All the measures exhibited adequate reliability with Cronbach's alpha values ranged between 0.788 and 0.928, which falls well within the recommended threshold of 0.70 (Pallant, 2005), which suggests that the "measures were free from random error and thus reliability coefficients estimate the amount of systematic variance" (Churchill, 1979). The overall Cronbach alpha value was also found to be 0.955, extremely good. The higher Cronbach Alpha values showed that all the items were internally consistent, and the higher Cronbach Alpha for the overall scale specifies that convergent validity was met.

Demographic profile of the respondents

A total of 526 respondents participated in this study. However, 437 responses were usable. From the total collected sample size of 437 respondents, 43% were male, and 57% were female. Most of the respondents were 21–35 years old, comprising 64.3% respondents, followed by the 36–50 years old group with 20.4%, whereas 13% were aged between 51 and 65. These results depict that people aged between 21–35 years were the most popular group in responding,

Table 2. Reliability of the study.

Variables	Cronbach Alpha (α)	Number of Items
Performance Expectancy	0.806	6
Effort Expectancy	0.838	5
Social Influence	0.788	5
Facilitating Conditions	0.876	8
Hedonic Motivation	0.928	7
Behavioral Intention	0.904	5
Use Behavior	0.821	3
Overall	0.955	39

whereas those over 51 were less interested in the investigation. The findings also suggested that 293 Malaysians and 144 non-Malaysians participated in the survey. The Non-Malaysian respondents were mainly from China, Hong Kong, Korea, Indonesia, Japan, Myanmar, and Thailand. Regarding the educational background, 57.9% of respondents hold a bachelor's degree, 20.1% have a secondary school level, 16.7% have a master's degree, and 3.9% were PhD holders. On being asked about the profession, 30.4% worked as Executive or Manager, 17.6% were professionals, 9.6% were self-employed, 5.3% were Government employees, and 4.6% were retired people. It was also found that 22% of the respondents were students, while 10.5% of respondents were involved in "other" professions not listed in the survey questionnaire. The finding suggested that 28.1% of respondents had an income level of below RM 3000, followed by 23.6% of respondents who had an income level between RM 3001 to RM 5000. 19% of respondents reported their income between RM 5001 to RM 7000, and 14% of respondents' income was between RM 7001 to RM 9000. Lastly, 15.3% of respondents reported their income as RM 9000 or above (Table 3).

KMO and Bartlett's test of sphericity

The Kaiser-Meyer-Olkin (KMO) index is an indicator of predictive relevance, for which a KMO index (= 1) demonstrates that indicators of the items should be added, while a KMO index (= 0) suggests that the method of arranging the

Table 3. Demographics of the study (n = 437).

Variable	Category	Frequency (F)	Percentage (%)
Gender	Male	188	43
	Female	249	57
Age	20 and Below	10	2.3
	21– 35	281	64.3
	36– 50	89	20.4
	51– 65	57	13.0
Nationality	Malaysian	293	67
	Others	144	33
Education	Primary	6	1.4
	Secondary	88	20.1
	Bachelor	253	57.9
	Master	73	16.7
	PhD	17	3.9
Profession	Student	96	22.0
	Professional	77	17.6
	Executive/Manager	133	30.4
	Self Employed	42	9.6
	Govt. Employee	23	5.3
	Retired	20	4.6
Income (RM)	Others	46	10.5
	Below 3000	123	28.1
	3001– 5000	103	23.6
	5001– 7000	83	19
	7001– 9000	61	14
	Above 9001	67	15.3

Table 4. KMO statistics and Bartlett's test of sphericity.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.933
Bartlett's Test of Sphericity	Approx. Chi-Square	11,554.175
	Df	741
	Sig.	.000

items into factors is insignificant. Furthermore, a KMO index greater than 0.6 was considered reasonable by Pett, et al., (2003). The KMO and Bartlett's Test of Sphericity result is shown in Table 4, which illustrates that the Kaiser-Meyer-Olkin (KMO) measurement of sampling adequacy was .951, well above the recommended value of 0.7. The Bartlett Sphericity Test was $p < .001$, indicating the adequacy of the data collected for executing factor analysis. The KMO statistic varies between 0 and 1. A value close to 1 suggests that the correlation patterns are comparatively compact and that the EFA is required to generate distinct and consistent factors (Field, 2013).

Exploratory factor analysis

Exploratory factor analysis (EFA) has been widely used as a technique to develop scales and subscales. The purpose of factor analysis is to identify the fewest possible constructs needed to reproduce the original data. Each variable's relationship to each factor tells whether the item is related to only one factor (constructs) or more than one. Therefore, applying EFA using principal components analysis with varimax rotation was imperative to test the current study's hypothesis. Table 5 suggests that seven different factors influence the sample and establishes that such factors were internally consistent. This must be confirmed that the item's loading to latent variables less than 0.5 was suppressed from the output. As shown in Table 5, all Effort Expectancy items, hedonic motivation, and behavioral intention met the minimum factor loading criterion ($>.5$). PE1, PE5, and PE6 of performance expectancy were deleted due to weak factor loadings ($<.5$), while SI2, SI3, and SI5 were also deleted in social influence factors. Furthermore, facilitating conditions and use behavior factors FC1, FC2, FC3, FC8, and UB2 were deleted due to weak factor loadings ($<.5$).

Table 6 represents the composite reliability (CR), average variance extracted (AVE), maximum shared variance (MSV), and discriminant validity of the constructs. AVE for all constructs except PE (0.474) is more significant than 0.5. Obtained from the simulation research performed by Fornell and Larcker (1981), the construct's converging validity is still sufficient if the AVE is less than 0.50 and the CR is higher than 0.6, which is accurate for PE in this research (CR = 0.727). Fornell and Larcker (1981), the AVE creator, mentioned that AVE was a more restrictive metric than CR. Based on the CR, it can be inferred that the convergent validity of the framework is acceptable.

Table 5. Summary of CFA model estimates.

Constructs/Items	Factor loadings
Performance Expectancy	
PE1***: I was satisfied with the ordering process using a tablet menu.	.418
PE2: The tablet menu provides complete information about the dishes, which is helpful in ordering the meals.	.677
PE3: The tablet menu provides a zoomable graphical interface that enables me to see each dish more clearly.	.667
PE4: The tablet provides good functionality that enables me to browse the menu more conveniently.	.565
PE5***: The tablet menu provides fast response, which is useful in the process of ordering meals.	.351
PE6***: Using a tablet menu would enable me to order my food more quickly.	.137
Effort Expectancy	
EE1: I expect to find the tablet menu easy to use.	.731
EE2: I would find it easy to get the tablet menu to do what I want it to do.	.658
EE3: I think the tablet menu provides an easy navigation interface.	.686
EE4: Learning to operate the tablet menu for ordering meals would be easy for me.	.701
EE5: It would be easy for me to become skillful at using the tablets to browse the menu.	.617
Social Influence	
SI1: People who I like have dined in the restaurants that use a tablet menu.	.686
SI2***: People who I like will dine in the restaurant that uses a tablet menu in the near future.	.435
SI3***: Most people around me think that one should have dined in the restaurant that uses a tablet menu.	.428
SI4: Most people around me have dined in the restaurant that uses a tablet menu.	.711
SI5***: Dining in the restaurant that uses a tablet menu provides a sense of higher social status.	.239
Facilitating Conditions	
FC1***: The tablet menu design is convenient for me to use.	.390
FC2***: Assistance is available if I have difficulties to order from a tablet menu.	.496
FC3: Finding information about tablet menu items was easy.	.413
FC4: The information in the tablet menu was well organized.	.581
FC5: Use of font and image colors in the tablet menu was pleasant.	.786
FC6: The fonts used in the tablet menu were easier to read.	.785
FC7: The font size used in the tablet menu was easier to read.	.712
FC8***: The tablet menu increased my sense of participation in the ordering process.	.298
Hedonic Motivation	
HM1: I had fun interacting with the tablet menu.	.712
HM2: Using the tablet menu to order meals provided me with a lot of enjoyment.	.726
HM3: Using the tablet menu to order meals make me feel like I am doing something new and different.	.790
HM4: Using the tablet menu to order meals make me feel surprised.	.777
HM5: Using the tablet menu to order meals make me feel excited.	.802
HM6: Using the tablet menu to order meals provide me with a different dining experience.	.751
HM7: I will enjoy using the tablet menu for ordering meals.	.688
Behavioral Intention	
BI1: I intend to go to a restaurant in the future that uses the tablets as a menu card.	.688
BI2: I expect to patronize a restaurant in the future that uses the tablets as a menu card.	.734
BI3: I plan to visit a restaurant in the next month that uses the tablets as a menu card.	.775
BI4: I will use the tablet menu for food ordering system in the future.	.674
BI5: I will recommend visiting those restaurants that use tablets for food ordering to my friends.	.686
Use Behavior	
UB1: I will continue to dine in the restaurants that use tablet-based menu.	.874
UB 2***: Providing a tablet menu in the restaurants is positive customer service.	.353
UB 3: I am likely to dine at least once a month in a casual dining restaurant that uses a tablet-based menu.	.879

**Items excluded from the analysis

Besides, for all constructs, the results meet the criterion that there is no possible evidence of discriminant validity: (1) $MSV < AVE$; and (2) the square root of AVE should be higher than the inter-construct relations (Byrne, 2016).

Table 6. Composite reliability, AVE, and the discriminant validity of the scales.

Construct	CR	AVE	1	2	3	4	5	6	7
(1) UB	0.960	0.518	0.961 ^a						
(2) PE	0.727	0.474	0.629	0.688 ^a					
(3) EE	0.838	0.511	0.511	0.718	0.715 ^a				
(4) SI	0.677	0.512	0.333	0.374	0.559	0.716 ^a			
(5) FC	0.853	0.593	0.445	0.662	0.598	0.308	0.770 ^a		
(6) HM	0.929	0.652	0.327	0.517	0.525	0.524	0.511	0.807 ^a	
(7) BI	0.907	0.660	0.278	0.427	0.592	0.653	0.456	0.753	0.812 ^a

^aSquare root of the average variance is along the diagonal

Moderating effects analysis

A moderation analysis was conducted to test the validity of the moderation hypotheses. AMOS’s multi-group analysis was applied to assess moderators’ effect on the impact of determinants on behavioral intention and use behavior. The purpose of the comparison within or between groups is to examine if there are substantial variations. Two groups of hypotheses were evaluated using AMOS’s multi-group analysis to assess moderators’ effect on the impact of determinants on use and behavioral intention. The purpose of the comparison between groups is to examine whether there are substantial variations among or between groups. If these categories (such as gender) are not substantially different, it will suggest that this gender moderator (two groups: male and female) does not affect predictors’ behavioral intent. The first step in this process is to determine whether these groups use the same path diagram. If this is so, the next step is to evaluate if there are any disparities between groups. To explore the age differences, the author divided the survey respondents into two groups: the older group (> 35 years) and the younger group (≤ 35 years), as shown in Table 7. 291 younger respondents (≤ 35 years) expanded their professional practice. They could be more acquainted with the technology than another group. The older group has 146 subjects (> 35 years) who may not be familiar with the previous group’s technology.

Table 7. The regression weights for young vs. older respondents between various paths.

Hypothesis	Path	Young		Old		Z-score	Sig. dif.
		Estimate	P	Estimate	P		
H1a	Performance Expectancy → Behavioral Intention	-0.007	0.906	-0.099	0.305	-0.799	No
H1b	Effort Expectancy → Behavioral Intention	0.078	0.255	0.065	0.501	-0.113	No
H1c	Social Influence → Behavioral Intention	0.150	0.002	0.429	0.000	3.166***	Yes
H1d	Facilitating Conditions → Behavioral Intention	0.046	0.528	0.327	0.002	2.18**	Yes
H1e	Hedonic Motivation → Behavioral Intention	0.636	0.000	0.349	0.000	-3.04***	Yes
H1f	Facilitating Conditions → Use Behavior	0.019	0.705	0.200	0.002	2.209**	Yes
H1g	Behavioral Intention → Use Behavior	0.402	0.000	0.573	0.000	1.503	No

*** A *p*-value is statistically significant at the 0.01 level (two-tailed)

** A *p*-value is statistically significant at the 0.05 level (two-tailed)

Sig. dif: yes = This path differs significantly across groups.

Sig. dif: no = This path does not differ significantly across groups.

The path diagram of the baseline model (unconstrained model) for younger and older subjects with unstandardized estimates is presented in [Figures 2 and 3](#) and yields a χ^2 (chi-square) of 1646.357, degree of freedom = 666, p -value = 0.000 (p -value are significant at the level of 0.05). It shows that the model fits very well the data for both categories. Other evidence also confirms the goodness of fit to the data (CMIN/DF = 2.472, RMSEA = 0.058, TLI = 0.864, CFI = 0.880, NFI = 0.816, GFI = 0.970, AGFI = 0.865). Using a multi-group analysis, the constrained model estimates the parameters in the calculation and structural weights that are confined to be similar in both categories. Constraint models (structural weight models) for males and females are shown in [Figures 4 and 5](#).

The model fits both groups' data very well; it yields a χ^2 (chi-square) of 1717.401, degree of freedom = 722, and p -value = 0.000 (which is significant at the level of 0.05). Other evidence also supports the goodness of fit of the model to the data (CMIN/DF = 2.379, RMSEA = 0.056, TLI = 0.873, CFI = 0.879, NFI = 0.808, GFI = 0.969, and AGFI = 0.823) (see [Figures 4 and 5](#)). There is no variance between the baseline and measurement weights since the chi-square difference test indicates a large difference between the baseline and constrained models. According to these statistics: the degree of freedom increases = 56, and the CMIN increases = 71.044, and p -value = 0.015 (which is significantly different). This finding shows that, while both categories could use the same pathway model, there is a substantial variation in the structural weight figures. This preliminary assessment shows evidence that suggests one or more of the immediate impacts distinguishes greatly across the two sub-categories. It is prescribed that various measures be evaluated to determine exact pathways that vary greatly between the two categories (Holmes-Smith, et al., (2006)).

In the current analysis, since there are specific pathways in the framework, seven sets of investigations/evaluations were performed (deploying the model 7 times, every moment exploring the substantial variation in every direct pathway). [Table 7](#) shows that only four direct paths differ significantly across the two groups. These direct paths are social influence, facilitating conditions and hedonic motivation toward behavioral intention, and facilitating conditions toward customers' use behavior. Thus, it could be concluded that the impact of determinants between social influence (SI \rightarrow BI), facilitating conditions (FC \rightarrow BI), and hedonic motivation (HM \rightarrow BI), toward behavioral intention and also facilitating conditions (FC \rightarrow UB), toward use behavior of customers were moderated by age.

[Table 8](#) shows the moderating effects of gender (male vs female) on the model's various relationships, which consisted of 188 male respondents and 249 female respondents. The evaluation of the influence of determinants (PE, EE, SI, FC, and HM) toward behavioral intention (BI) and Usage Behavior (UB) was moderated by gender. The baseline model (unconstrained model) is

Table 8. The regression weights for male vs. female respondents between various paths.

Hypothesis	Path	Male		Female		Z-score	Sig. dif.
		Estimate	P	Estimate	P		
H2a	Performance Expectancy → Behavioral Intention	-0.078	0.223	0.087	0.257	1.65*	Yes
H2b	Effort Expectancy → Behavioral Intention	0.169	0.031	-0.025	0.745	-1.778*	Yes
H2c	Social Influence → Behavioral Intention	0.273	0.000	0.447	0.000	2.163***	Yes
H2d	Facilitating Conditions → Behavioral Intention	0.187	0.023	0.132	0.117	-0.467	No
H2e	Hedonic Motivation → Behavioral Intention	0.371	0.000	0.391	0.000	0.207	No
H2f	Facilitating Conditions → Use Behavior	-0.117	0.082	-0.101	0.045	0.183	No
H2g	Behavioral Intention → Use Behavior	0.689	0.000	0.612	0.000	-0.794	No

*** A *p*-value is statistically significant at the 0.01 level (two-tailed)

* A *p*-value is statistically significant at the 0.05 level (two-tailed)

Sig. dif: yes = this path differs significantly across groups.

Sig. dif: no = this path does not differ significantly across groups.

generated (Figures 6 and 7) and yields a χ^2 (chi-square) of 1890.252, degree of freedom = 666, *p*-value = 0.000, (*p*-value are significant at the level of 0.05). It shows that the model fits very well the data for both categories. Other proof also confirms the goodness of fit to the data (CMIN/DF = 2.838, RMSEA = 0.065, TLI = 0.839, CFI = 0.858, NFI = 0.779, GFI = 0.976, AGFI = 0.829). Using a multi-group analysis, the constrained model estimates the parameters in the measurement and structural weights that are constrained to be equal in both categories. Constraint models (structural weight models) for males and females are shown in Figures 8 and 9.

The structural weight values for males and females are considered the same as in the structural weight models (Figures 8 and 9). The model fits the data for both groups very well. It yields a χ^2 (chi-square) of 2001.114, degree of freedom = 722, and *p*-value = 0.000 (significant at the level of 0.05). Other evidence also supports the goodness of fit of the model to the data (CMIN/DF = 2.772, RMSEA = 0.064, TLI = 0.845, CFI = 0.852, NFI = 0.787, GFI = 0.960, AGFI = 0.867). There is no disparity between the baseline and measurement weights since the chi-square difference test indicates a massive variation between the baseline and constrained models. According to these statistics, the degree of freedom increases = 56, and the CMIN increases = 110.862, and *p*-value = 0.000 (which is significantly different). This finding shows that, while both categories could use the same path diagram, there is a substantial variation in the structural weight estimates. This initial test confirms that at least one direct effect is substantially different between the two sub-categories. It is proposed that various approaches be calculated to classify particular pathways that vary greatly between the two categories (Holmes-Smith et al., 2006).

Table 8 shows that only three direct paths differ significantly across the two groups. These direct paths are performance expectancy, effort expectancy, and social influence toward behavioral intention. Thus, it could be concluded that the impact of determinants between performance expectancy and behavioral

intention (PE → BI), effort expectancy and behavioral intention (EE → BI), and social influence and behavioral intention (SI → BI) were moderated by gender.

Discussion and conclusion

This research adds to our analytical interpretation of technology application to the restaurant industry in various ways. Previous researchers have not looked at the UTAUT 2 model's effectiveness to forecast the tablet menu's use. This study, thus, contributes to the literature by demonstrating that UTAUT 2 is typically very well linked to this new piece of technology. This research has developed and analyzed the moderating effects of gender and age, which were partially supported. The structural model estimated the identical structural model in both younger and older groups. The present study's key findings showed that age regulated the relationship between social influence, facilitating conditions, hedonic motivation with behavioral purpose, and the relationship between facilitating conditions and behavior. The finding supports the statement that social influence is a direct determinant of behavioral intention (Venkatesh et al., 2003) and significantly influences one's choice to practice new technology (Venkatesh & Davis, 2000). It was also noted that both the young and the old customers share the same view that using the tablet menu helps improve society's role. The finding was also in line with Chang et al. (2019) and Wang et al. (2009).

It was also hypothesized that age would moderate the association between facilitating conditions and behavioral intention. Older customers are more likely to face difficulty using the new technology (Morris et al., 2005). Thus, as the result suggests, older consumers tend to place more prominence on the readiness of ample support than younger consumers. The findings displayed that this hypothesis was found positive, and the results were in line with the findings of Palau-Saumell et al. (2019) and Venkatesh et al. (2012). In predicting user behavior, age was found to be moderating the relationship between facilitating conditions and use behavior. It was also significant, thus supporting the findings of Venkatesh et al. (2003) and Venkatesh et al. (2012). Compared to the young, the results indicated that older customers tend to emphasize the accessibility of adequate support as older customers tend to confront more trouble in handling modern technologies. The results also found that age identically moderated the relationship between hedonic motivation and behavioral intention for young and older customers and was supportive to the previous studies by Chang et al. (2019) and Venkatesh et al. (2012). The influence of hedonic motivation on behavioral intention is usually more significant for young people with less technology involvement. Since the hedonic information system is prominent in the digital market, such as computer games and videos on tablets, hedonic motivation plays a

significant role in determining the hedonic information system's priorities. The findings also demonstrate that hedonic incentives are potent factors in the use of technology.

Age does not moderate the relationships between performance expectancy and effort expectancy with behavioral intention. This finding was contrary to Venkatesh et al. (2003); (2012)) original conclusions, which specified that the relationships between performance expectancy and effort expectancy with behavioral intention are moderated by age. However, these two findings are in line with the previous studies where age did not moderate these two relationships in the studies related to online hotel booking (Chang et al., 2019), mobile app acceptance in hotels and restaurants (Kim, 2016; Palau-Saumell et al., 2019), internet banking (Khater et al., 2020), social media users (Workman, 2014), and mobile banking (Oliveira et al., 2014). Similarly, age also did not moderate the relationship between behavioral intention and use behavior. Therefore, this hypothesis was not found to be significant and thus rejected the author's assumption. Age was also not incorporated in the original UTUAT and UTAUT 2 studies to study its moderating effect on the relationship of behavioral intention and use behavior. This finding is another significant contribution to the current research and the body of knowledge.

The effect of gender on the acceptance of tablet menus has drawn extensive examination. Existing studies in various contexts suggest a substantial disparity between males and females, with male users recommended to have a more positive state of mind toward embracing technology than women (Rojas-Méndez et al., 2017; Yueh et al., 2015). The results displayed that gender moderates the relationship between performance expectancy, effort expectancy, and social influence with behavioral intention. The findings exhibited that performance expectancy plays an essential role for both males and female customers similarly. Thus, they supported the literature's suggestions that the potential influences both male and female users, which would enhance their intention to use tablet menus. Therefore, in terms of gender, performance expectancy affects both male and female users similarly, a finding in line with that of Chang et al. (2019), Dutta and Borah (2018), Rojas-Méndez et al. (2017), and Venkatesh et al. (2003), and Yueh et al. (2015).

The results underpin the notion that gender is critical for moderating effort expectation effects using the tablet menu. This hypothesis aligns with the previous studies that recommended that effort expectancy is more significant for men than women (Venkatesh & Morris, 2000). Previous studies strengthened the impression that concepts linked with effort expectancy were an influential determining factor of individual interest to men (Venkatesh & Morris, 2000; Venkatesh et al., 2000). The result exhibited that gender moderates the relationship between social influence and behavioral intention for both men and women. The finding reinforces the assertion that social influence is an immediate determinant of behavioral intention (Venkatesh et al.,

2003) and substantially influences one's choice to apply new technology (Venkatesh & Davis, 2000). The results also observed that both the male and female customers share the identical viewpoint that using the tablet menu improves their role in society. The finding is also in line with those of Chang et al. (2019), which has found that gender moderates the relationship between Social Influence and Behavioral Intention for online hotel booking.

Gender does not moderate the relationships between the facilitating conditions and hedonic motivation with behavioral intention. Both hypotheses were not supportive, which contradicts the literature that men tend to depend less on facilitating conditions when considering novel technology. At the same time, women tend to put more importance on external supporting variables. The findings of the hypothesis related to hedonic motivation were not supportive. Eventually, they contradicted the literature that joy or gratification generated from technology plays a vital part in evaluating the adoption and usage of technology (Venkatesh et al., 2012). However, the finding of this study was in line with other authors (Oliveira et al., 2014; Palau-Saumell et al., 2019; Workman, 2014), who investigated the moderating effects of gender on the relationship between hedonic motivation and behavioral intention and did not find any significant relationship in different contexts.

Similarly, age does not moderate the relationships between facilitating conditions and behavioral intention with customers' use behavior. One of the novel findings of this study and contribution to the body of knowledge was testing this hypothesis. The author postulated that gender would moderate the relationship between behavioral intention and use behavior. However, the study found that this hypothesis was not found to be significant and thus rejecting the assumption made by the author. One of the significant contributions of the current research is integrating gender to moderate the relationship between behavioral intention and use behavior. This finding is entirely distinctive as both UTAUT and UTAUT 2 models did not incorporate gender to moderate the relationship between behavioral intention and use behavior.

Another one of the main contributions of this research consisted of demographics. The current research is presumably the first research in Malaysia to comprehend the customer's recognition of tablet menus in casual dining restaurants. The study's findings showed that Malaysians, especially young people, appreciate tablet menus in restaurants as they appear to be more efficient than paper menus. A young generation of millennials is a lot more tech-savvy than the old generation. Therefore, this new trend in tablet menus could completely change the dining experience between them.

Theoretical implications of the study

The current research has both theoretical and functional ramifications. In particular, this research's importance is illustrated in the literature on technology acceptance, customer behavior, and tablet menu literature recognition. This research adds to our analytical interpretation of the application of technology in the restaurant industry in several ways. Past researchers have not looked at the UTAUT 2 model's feasibility to assess the tablet menu's use. Thus, this research adds to the literature by proposing that UTAUT 2 typically relates well to this innovative technology piece. This being a new study would be of tremendous importance to academia and the restaurant industry. This study's findings lay the groundwork for future research on the tablet menu. There was no research on the functionality of menus and ordering experience as the primary subject was seen. It is undoubtedly the first work carried out using the UTAUT 2 model to examine the customer's recognition of restaurant tablet menus. Future research may be performed from the theoretical context to explore the consumer's potential advantage using the online tablet-based menu over the conventional paper-based menu.

Managerial implications

The use of digital tablet menus has a statistically substantial potential impact on the customer's experience in ordering. Such menus can support restaurant owners in raising offerings to serve their customers' needs in a better way (Tan & Netessine, 2019). The hospitality industry has also promoted environmental measures. The integration of tablet menus may encourage this momentum, as this guarantees a reduction in the use of paper in the restaurant business to print restaurant menus. Implications for hotel managers would include investing resources in making tablet applications enjoyable and engaging, growing consumers' choices toward the product, and creating a sense of enhanced performance by seamless and exciting app functionality (Beldona et al., 2014). Managers of quick-service and mid-scale restaurants may consider investing in tablet-based menus since such restaurants' consumers reported higher acceptance expectations relative to fine dining establishments (Ansel & Dyer, 1999; Oronsky & Chathoth, 2007). More and more restaurants would most likely rely on technology to establish a competitive advantage in the future.

Limitations of the study

Despite its contributions, the present research still has certain shortcomings that could be addressed in future studies. Lifestyle and culture could vary from one country to another. For a further generalization of this study's results, cross-cultural evaluation using another large sample obtained elsewhere is

appropriate. Additionally, the model is cross-sectional as it evaluates experiences and attitudes at a particular point in time. However, expectations change with time as people acquire more knowledge. Another drawback was that this research was restricted to casual dining environments and that these findings could not be broadly applicable to other divisions of the restaurant industry. While nutritional information was not one of the variables examined in this research, some participants made explicit remarks on the questionnaires that nutritional information impacted their purchasing decision. Future studies should investigate the effect of diet knowledge on consumer ordering experience.

Possible future research

Future studies should investigate the effect of providing nutritional information on the tablet menu on the customer ordering experience. Researchers should also explore the type of dietary details that customers want to see on the menu. While these days, people are becoming health-conscious and diet-efficient due to their lifestyle and fast-paced life, they tend to eat nutritious foods high in calories and low in fat. Future researchers may use a more extensive defined survey to explore the impact of demographic inequalities and disparities in technology perceptions on service quality standards. Future research should also include additional moderating variables such as ambiance, cultural differences, education, income, price, prior experience, type of restaurant, etc.

Future research may extend the present investigation by evaluating multicultural transformations to ascertain the factors influencing consumers' motives for practicing the restaurant's tablet menu. As the present study was a cross-sectional study conducted at a specific point in time, another longitudinal study replicating the present study could be carried out to understand how customers change perceptions over an amplified period. The findings of the relationship between the different constructs of the UTAUT 2 model strengthened the current study on tablet menus and customer satisfaction. They, therefore, provided the basis for academia in future studies.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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