TECHNIUM
SOCIAL SCIENCES JOURNAL

Vol. 25, 2021

A new decade for social changes

www.techniumscience.com

ISSN 2668-7798

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

Customer use of online order for food delivery service: the application of UTAUT2 Model

Francis Osei[1], Gertrude Agyemang[2], Collins Kankam-Kwarteng[3], Ofosu Amofah[4]

[1,2,3]Department of Marketing, School of Business, Kumasi Technical University, Kumasi, Ghana, [4]Department of Marketing, School of Business, Ho Technical University, Ho, Ghana

oseifrancis1234@gmail.com[1], trudygertude92@gmail.com[2], colkann@gmail.com,[3]amofahofosu@gmail.com[4]

Abstract. Purpose – Online Food Delivery service can be defined as a service offered by a Restaurants or any food services business that allows the customers of such establishments to carry out a variety of Online Food Delivery operations via a mobile device, such as a mobile phone, tablet or personal digital assistant. The purpose of this paper is to examine factors that influence customers to adopt and subsequently use Online Food Delivery services in Ghana using the unified theory of acceptance and use of technology 2 (UTAUT2). Design/methodology/approach – Using questionnaire survey, the study sampled 200 users of online Food Delivery service app in Ghana as respondents. The primary data collected were analyzed using SmartPLS software. Findings – Findings of the study indicate that performance expectancy, effort expectancy and Perceived control were determinants that positively influenced the purchase intention of consumers. On the other hand, we found that ease of use, facilitating conditions, hedonic motivation, social influence, and price value were not key factors determining the purchase intention of delivery apps. The applicability of UTAUT2 model was confirmed in the context of the research. Practical implications – online order for food is a new phenomenon in Ghana's hospitality industry, thus it is imperative to understanding the customer adoption behavior. The outcome will aid any food services business to develop strategies that will sustain the interest of consumers to embrace online Food Delivery service. Originality/value – This paper is among the first ever known attempts to examine online Food Delivery service adoption in Ghana using UTAUT2 model.

Keywords. Food Delivery App, UTAUT2, Information Quality, Purchase Intention, Food Service Consumer

1.Introduction

The exponential growth of e-commerce has spawned new ways of business all over the world, as well as changing how tasks and jobs are traditionally performed. (Liu et al., 2017 and Cho et al., 2019). Mobile commerce, which connects suppliers and customers through smartphone apps, has grown rapidly due to its convenience and ability to exchange information quickly (Lyu et al., 2015 and Kim et al., 2019). Food services, hotels, and real estate, among other industries, have shifted from offline to online services. (Du et al., 2014). Food delivery applications on mobile devices that can communicate in real time offer speed and convenience to busy customers (Lee et al., 2017). Customers' use of online food ordering has evolved

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

dramatically over time around the world. Restaurants in the United States, for example, have seen a 3–35 percent increase in sales since using food delivery apps. (Cho et al., 2019). Food delivery apps are expected to become a major part of the restaurant and fast-food industries in the United States. More than one-fifth of China's population use food delivery software (Maimaiti et al., 2018). In China, using mobile apps for food delivery has become very easy (Cho et al., 2019). Furthermore, from 870, 000 in 2013 to 25 million in 2018, the number of customers in Korea's delivery food app market has increased exponentially (Joins, 2019). According to the findings of the Factual Survey on Small Businesses' Use of Online Delivery Services, 95.5 percent of 1000 restaurant owners who use delivery apps posted net income of 46.2 percent to 49.3 percent after using the apps.

The world was struck by a global outbreak known as Coronavirus Disease 19 (COVID-19) in the year 2020, which was declared a pandemic by the World Health Organization. Preventive steps were placed in place to slow the spread of the deadly virus. All events, including restaurants, wedding receptions, funerals, beaches, and other social gatherings, have been halted until further notice. As a result, food delivery apps are becoming increasingly common in Ghana (Ministry of Communications, 2021). This is becoming increasingly common, particularly as the number of Coronavirus cases continues to rise at an exponential rate. Customers can browse through a variety of foods and compare prices through the advent of online food distribution in this pandemic period. Delivery apps can be used as a simple and highly effective sales and marketing tool by restaurants in Ghana with limited advertisement and marketing capabilities. While online food delivery services include cost-effective options and fast delivery times, they have a number of drawbacks, including the inability to control external factors such as traffic and weather. With these constraints in mind, the purpose of this study is to investigate customers' use of an online food delivery services in Ghana in order to identify ongoing innovation aimed at enhancing customer convenience, loyalty, and retention in a developing economy like Ghana during a pandemic. For empirical research, the extended UTAUT2 (Unified Theory of Acceptance and Use of Technology 2) model was used for this study. The TAM (Technology Acceptance Model) and UTAUT models are thought to have less explanatory capacity than this model (Venkatesh et al, 2012). Despite the fact that the rapid growth of delivery apps has prompted a great deal of study, there have been few academic studies on the topic (Cho et al., 2019; Lee et al., 2017 and Okumus et al., 2018). Therefore, this study seeks to determine customers' use of online food delivery service in the Ghanaian context using the UTAUT2 model.

2.Literature Review

Numerous studies have used the TAM (Technology Acceptance Model), which is based on the theory of reasoned action (TRA), to understand technology acceptance. (Pavlou, 2003). The theory has been used to examine mobile commerce information systems. (Lopez-Nicolas et al., 2008), e-commerce (Ha et al., 2009) and social networks (Pookulangara and Koesler, 2011). Relationships between variables in technical settings are studied by the model, on the other hand, is insufficient because it is unable to adequately account for the effects of various exogenous variables and the TAM variables (Agarwal et al., 2000). It has also been criticized for failing to provide a comprehensive description of work-technology environments. (Morosan, 2016). In addressing these limitations, Venkatesh, Morris, Davis, and Davis (Venkatesh et al., 2003) proposed a detailed model of UTAUT, which unified numerous previous theories and models on technology adoption, like TAM. According to UTAUT, behavioral intention and use are directly influenced by performance expectancy, effort

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

expectancy, continuous intention, social influence and facilitation conditions (Venkatesh et al., 2003).
Since its initial publication, the UTAUT has been used in a variety of research studies to explore technology adoption, such as in video-based learning. (Mikalef et al, 2016) CRM systems looked into the factors that influence CRM system acceptance and use. (Pai and Tu, 2011) in social media (Curtis et al., 2010), It investigated how non-profit public relations professionals used social media resources in online banking (Abu-Shanab and Pearson, 2009), this study was carried out in order to gain a deeper understanding of the adoption of Internet banking. (Lin et al., 2014). Similarly, UTAUT model can be used to examine Online Food Delivery (OFD) services of customers in Ghana.

2.1Purchase Intention

Purchase intentions can be used to evaluate the feasibility of a new distribution channel, allowing managers to determine whether the concept merits further development and which geographic areas and consumer categories to target through the channel (Morwitz et al., 2007). Their significance stems from the fact that intentions are regarded as the most important predictor of actual behavior (Montano and Kasprzyk, 2015); thus, their research is critical to the success of any online retailer. The important variable to be explored in this study is buying intentions. The construct occurs during the pre-purchase stage and captures the psychological factors that influence customer behavior (Armitage and Conner, 2001). To forecast consumer behavior, it is important to understand the attitudes, perceptions, and internal elements that lead to buy intent (Fishbein and Ajzen, 1977). In this study, online purchase intention is defined as a consumer's willingness to buy a product from an online retailer, as defined by Pavlou (2003). Aside from traditional purchasing in physical stores, purchase behavior has been studied in a variety of marketing fields, including green marketing (Nguyen et al., 2016), luxury brands and products (Beuckels and Hudders, 2016), B2B transactions (Wei and Ho, 2019) and finally, online purchase (Sundström et al., 2019). In this study, online purchasing behavior is defined as the frequency with which consumers make purchases via the Internet, according to George (2004). Consumer intentions, according to (Ajzen, 1991), are a measure of how willing people are to engage in a given action, which in this case would be defined as online purchase behavior. One of the first challenges to the development of e-commerce has been discovered to be a lack of desire to buy online (He et al., 2008), and researchers such as Lim et al. (2016) remark that online buying intention and online purchasing behavior need to be researched further. The first research hypothesis for this study, based on the foregoing, investigates the impact of online buying intent on customer purchase behavior.

2.2 Performance Expectancy

The extent to which using online food delivery platforms can benefit customers in conducting certain activities is referred to as performance expectation. It is defined as "the extent to which a user expects that using a system will assist him or her in achieving job performance gains." (Venkatesh et al., 2003). According to studies, one of the most significant predictors of the intention to use technology is performance expectancy. (Venkatesh et al., 2003; Kijsanayotin et al., 2009; Liu et al., 2014). 116 studies were found. (Williams et al.,2015) that assessed the link between performance expectancy and purchase intention, 80 percent of the studies discovered this link to be significant. The link between Performance Expectancy and Purchase Intention has been proven in a variety of occurrences, including the acceptance of Internet banking. in Jordan (AbuShanab et al., 2010), acceptance of mobile devices in Finland (Carlsson et al., 2006), in South Africa, the internet is widely used for job searching (Pavon and Brown, 2010),

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

the adoption of electronic medical records by licensed nurses, accredited nurse practitioners, and physician assistants in the state of South Dakota of USA (Wills, El-Gayar, and Benett, 2008) and Sri Lankan State Universities, students are taking online courses. (Wijewardene et al., 2018). As a result, performance expectancy is described as a person's belief that using online food delivery services will help them perform better at work. Therefore, it is stipulated that:
H1: Performance Expectancy positively impacts Purchase Intention.

2.3 Effort Expectancy

The degree of ease associated with using online food delivery services is referred to as Effort Expectancy. Perceived Ease of Use (TAM/TAM2), Complexity (MPCU), and Ease of Use (TAM/TAM2) are constructs from current models that are relevant to this construct (IDT). It can be referred to as the anticipated complexity of a technology and the amount of effort required to use it. 58 percent studies have discovered a significant link between effort expectancy and purchase intention (Williams et al., 2015). In a variety of contexts, such as customer adoption of information technology in Canadian companies, the relationship between Effort Expectancy and Purchase Intention has been found to be significant (Neufeld et al., 2007), digital libraries are well-liked by university students in the northeastern United States. (Nov and Ye, 2009), four Taiwanese distribution service companies' employees have adopted CRM systems. (Pai and Tu, 2011) and mobile banking adoption in Pakistan (Abbas et al., 2018). The ease with which OFD equipment can be used is referred to as effort expectancy. Thus, it is stipulated:
H2: Effort Expectancy positively influences Purchase Intention.

2.4 Social Influence

The degree to which a customer is persuaded to use online food delivery services by other people in their social circle is referred to as social influence. The relationship between social influence and behavioral intention was investigated by marketing researchers, 75 percent discovered this link to be relevant (Williams et al., 2015). Previous research has found a connection between social influence and purchase intention to be important in a variety of situations. such as introduction of e-government services in Qatar (Al-Shafi and Weerakkody, 2009), in Taiwan, users are adopting e-Government services provided by kiosks. (Hung et al., 2007), in Greece, the behavior of mobile Internet users has changed. (Kourouthanassis et al., 2010), acceptance of a C2C auction platform by Chinese students (Pahnila et al., 2011) and in Uganda acceptance of Information Communication Technology (ICT) services among university library end-users (Tibenderana et al., 2010). In this case, social influence can be interpreted as the weight a person places on the opinions of others when deciding whether or not to use OFD services. Thus, it is stipulated:
H3: Social Influence affects Purchase Intention positively.

2.5 Facilitating Conditions

Customers' requirements for the resource and support required to execute a behavior is referred to as Facilitating Conditions. (Brown and Venkatesh, 2005; Venkatesh et al., 2003). A customer's understanding of the value of having technological infrastructure in place to encourage the use of any system is often known as a facilitating condition. Previous research looked at the link between facilitating conditions and purchasing intention and found that 69 percent found it to be meaningful. (Williams et al. 2015). Furthermore, studies have discovered a connection, in many cases, such as the adoption of e-filing by US taxpayers, Facilitating

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

Conditions and Purchase Intention have been found to be relevant (Schaupp et al., 2009), in Kuala Lumpur, internet banking is becoming more common. (Sok Foon and Chan Yin Fah, 2011), in Singapore, school teachers have shown an interest in using technology. (Teo, 2011), In South Africa, undergraduate university students accept mobile phones. (Biljon and Kotzé, 2008), and in Taiwan, there has been a change in attitudes toward 3G mobile contact users. (Wu et al., 2007). A person's conviction that the infrastructure is in place to encourage the use of online food delivery services is one of the facilitating conditions. Thus, the following hypothesis is stipulated:

H4: Facilitating Conditions positively influences Purchase Intention.

2.6 Hedonic Motivation

A lighthearted enjoyment resulting from the use of technology. It is based on the concept of a secret reward for having fun. This construct is thought to have a positive impact on emerging technological adoption (Brown and Venkatesh 2005), It also proves to be a factor in influencing customer behavior in terms of adoption of technology (Brown and Venkatesh 2005; Childers et al. 2001). The pleasure of entertainment or hedonic of the users to what they have is referred to as motivation. It could be as simple as having a good time or being entertained. Therefore, hedonic motivation has a direct impact on purchase intentions as a study conducted in Venkatesh et al. (2012). Furthermore, motivation brings hedonistic gratification from using technology to be an important factor in determining the user's acceptance and usage of technology (Brown and Venkatesh, 2005). Many previous studies have shown that hedonic motivation has a significant influence on technological adoption and is an important factor (Brown and Venkatesh, 2005; Thong et al., 2006; Childers et al., 2001There are few studies that look at hedonic influences as they relate to user acceptance (Pillai and Mukherjee, 2011).

H5: Hedonic Motivation influences purchase intention positively

2.7 Perceived Control

Perceived control is characterized as the desire to portray an individual's ability, superiority, and proficiency in a variety of situations, which is widely acknowledged as a human motivator. Perceived control refers to the availability of a response that can directly affect or change the objective characteristics of an incident (Averill 1973).

Online shopping has become a faster, more convenient, and less expensive option for consumers to make purchases than shopping in brick-and-mortar establishments, thanks to the development of self-service technologies and the popularity of the Internet (Lee at al., 2011). The number of internet shoppers in China has risen quickly, reaching almost 310 million in 2014. (China Internet Network Information Center, 2014). As a result, the internet retail industry in China, as well as around the world, is growing more competitive (Nikhashemi et al., 2016). Nevertheless, online consumer behavior is still in the exploratory stage in both theoretical and empirical study (Cummins et al., 2014).

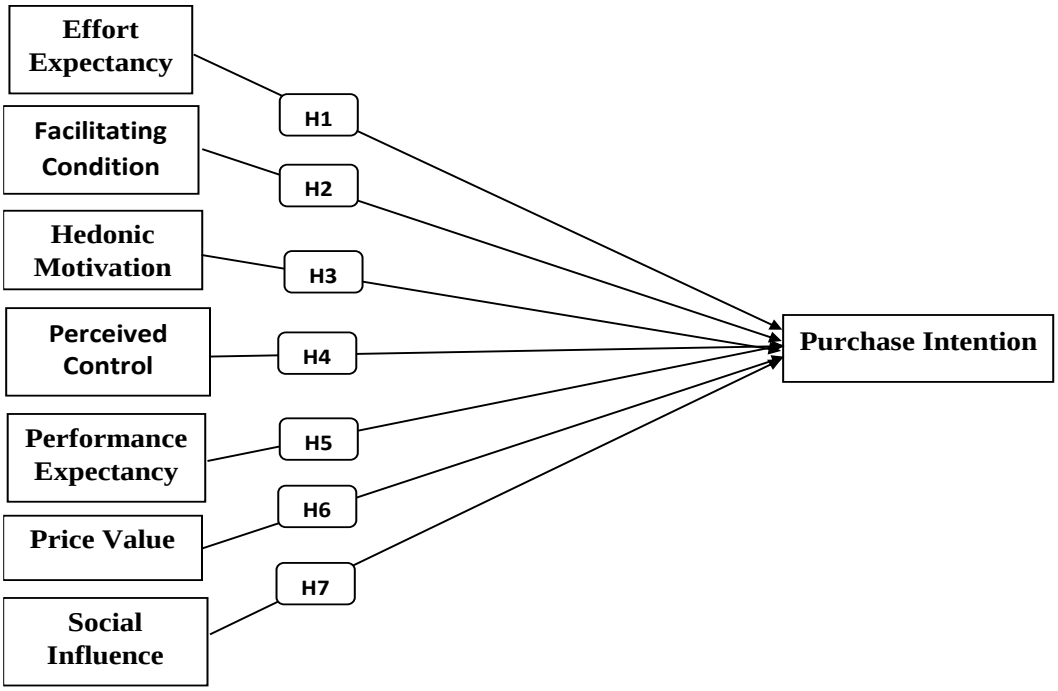
Purchase intention is the subjective probability or potential that a customer would buy a specific product or brand, and it has been presented as a predictor of future purchases (Lee et al., 2011). Consumer factors, such as experience and attitude toward online buying, had indirect influence on purchase intention in online shopping, according to (Shim et al.,2001). Marketing-mix attempts to heighten perceived control could be one method to boost consumers' purchase intention (Lee and Allaway, 2002). Perceived control, according to Ajzen (2002), is people's belief that they have control over how an activity is performed. Individuals' perceptions of danger, stress, happiness, and well-being in the face of an unpredictable environmental occurrence are influenced considerably by their sense of control over the event (Lee and

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

Allaway, 2002). When customers believe they have control, they are able to make the appropriate psychological changes to the service ahead of time, lowering their risk and uncertainty perceptions (Featherman and Pavlou, 2003). Thus, it is hypothesized that:
H6: Perceived control has a positive influence on purchase intention

2.8 Price Value

Price value is often regarded as a key factor in predicting purchasing intention, which can have an effect on a company's competitive advantage (Chang and Tseng, 2013). In the information technology fields, researchers and marketers of customer-electronics products have recently stressed on price value. Users' acceptance of new technologies or smart mobile devices was studied using this concept. According to the results, the price-value concept is critical in attracting customers (Soltani and Gharbi, 2008). If the benefits of using a technology are determined to be higher than the monetary costs, the price value is positive. The effect of such a price value on purchase intentions is positive. (Venkatesh et al., 2012). Based on the results, (Venkatesh et al., 2012) defined price value as customers' cognitive tradeoffs between the perceived benefits of the applications and monetary costs for using them (Dodds et al., 1991). In the marketing sense, the price value covers two perspectives: monetary costs and nonmonetary costs. Monetary costs, in relation to the price charged, apply to the benefit that has been identified (Petrick, 2002). The value identified in exchange for costs such as time and effort are referred to as nonmonetary costs (Boksberger and Melsen, 2011). Thus, it can be stipulated that:
H7: Price value has a positive influence on purchase intention
All the hypotheses in the theoretical model are depicted in Figure 1.



Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

3. Methodology

3.1. Sampling and Data Collection

Residents of Ghanaian who were at least 18 years old and had used a delivery app at least once a month were selected for the study sample. The delivery apps selected were Uber eats, KFC delivery and Jumia food which account for more than 60% of the market. Therefore, the selected sample is representative of the whole population of delivery users. Data collection took place over a one-month period from January 10, 2021, to February 27, 2021, via an on-line survey administered by google survey. The sampling was more than 50,000 respondents who are staffs and post graduate students of Kumasi Technical University and Kwame Nkrumah University of Science and Technology. Invitation links for the survey were sent to a total of 700 prospective respondents. Study subjects were asked whether they had ever logged in to three delivery app, searched for a food item, and placed an order at least once per month. Of the 1000 prospective respondents who followed the link, only those who responded positively were selected for the survey. The statements were presented to all respondents in the same order, resulting in a final sample size of 200 for empirical analysis. Table 3.1 shows a profile of the sample.

Table 3.1: Demographic Profile of Respondents

Demographic profile		**Frequency**	**Percentage %**
Gender	Male	82	41 %
	Female	118	59 %
Age	16-20years	21	10.5 %
	21-30years	94	47 %
	31-40years	62	31 %
	41-50years	23	11.5 %
Marital	Married	84	42%
	Single	113	56.5%
	Divorced	2	1%
	Widowed	1	0.5%
Occupation	Student	48	24%
	Office worker	57	28.5%
	Sales and Services	61	30.5%
	Government employee	22	11%
	Professional job	3	1.5
	Self-employed	8	4
	Other	1	0.5
Educational	MSLC/JHS	5	2.5 %

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

	SHS	11	5.5 %
	Diploma	41	20.5 %
	Degree	59	29.5 %
	Post Graduate	81	40.5 %
	Others	3	1.5 %
Frequency of use for 1 month	1–2 times	39	19.5 %
	3–4 times	146	73%
	5–6 times	10	5 %
	7–8 times	5	2.5 %
Annual income	Below GH 500	9	4.5%
	GH 500-1000	39	19.5%
	GH 1000- 2000	67	33.5%
	GH 2000-3000	25	12.5%
	GH 3000-4000	14	7%
	GH 4000-5000	31	15.5%
	Above GH5000	15	7.5%

3.2. Research Instrument

A total of seven factors were considered based on the findings of previous studies. Of the UTAUT2 factors, we followed Venkatesh et al. (2012), San Martín and Herrero (2012), Escobar-Rodriguez and Carvajal-Trujillo (2013), and Singh and Matsui (2017) in including four performance expectancy items, three facilitating conditions items, five hedonic motivation items, four Perceived control items, four effort expectancy items, three Purchase intention items, two price value items, three social influence item. All items were measured on a five-point Likert scale ranging from “strongly disagree” to “strongly agree.”

3.3 Data analysis

Structure equation modeling (SEM) was used to measure the relationship between the variables and SPSS 20.0 was used to present the demographic profile of the respondents on sample data. We used a three-step approach to conducting data analysis. First, the reliability and construct validity were assessed by conducting confirmation factor analysis (CFA) in the first step. The research model and the proposed hypotheses were evaluated by the structural equation model (SEM) in the second step. Covariance-based SEM (CB-SEM) and Partial least square SEM (PLS-SEM) are the two categories of SEM. CB-SEM analyzes the relation between measured covariance-related variables. In contrast, PLS-SEM analyzes the dependent and independent variables depending on the projection and the prediction to optimize the explained variances (Wang et al., 2019). According to Wang et al. (2019), in maximizing the explained variances, PLS-SEM analyzes the dependent and independent variables based on the forecast and approximation. Based on a series of exogenous structures, PLS-SEM estimates the degree of

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

changes in endogenous constructions. To measure structural relations and confirmatory factor analysis between study variables, we used Smart PLS 3.0 (Hair et al., 2017). Additionally, in order to test the significance of the path coefficients and loadings, a bootstrapping (resampling = 5000) method was used (Hair et al.,2014).

4.Data Analysis and Results

4.1. Measurement Model

Table 4.1: Reliability and Validity Factor Loadings

Research constructs	Cronbach's alpha	CR	AVE	Rho _A	Loadings
Effort Expectancy	**0.953**	**0.966**	**0.877**	**0.954**	
EE1					**0.882**
EE2					**0.960**
EE3					**0.957**
EE4					**0.944**
Facilitating Conditions	**0.939**	**0.961**	**0.893**	**0.942**	
FC1					**0.914**
FC2					**0.983**
FC3					**0.936**
Hedonic Motivation	**0.916**	**0.937**	**0.749**	**0.918**	
HM1					**0.882**
HM2					**0.780**
HM3					**0.905**
HM4					**0.915**
HM5					**0.838**
Perceived control	**0.831**	**0.890**	**0.676**	**0.885**	
PC1					**0.821**
PC2					**0.565**
PC3					**0.930**
PC4					**0.919**

TECHNIUM SOCIAL SCIENCES JOURNAL

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

Performance Expectancy	**0.812**	**0.875**	**0.639**	**0.851**	
PE1					**0.817**
PE2					**0.847**
PE3					**0.880**
PE4					**0.632**
Purchase Intention	**0.924**	**0.953**	**0.871**	**0.933**	
PI1					**0.856**
PI2					**0.972**
PI3					**0.967**
Price value	**0.903**	**0.953**	**0.911**	**0.918**	
PV1					**0.961**
PV2					**0.947**
Social Influence	**0.754**	**0.890**	**0.802**	**0.754**	
SI1					**0.896**
SI2					**0.896**

The adequacy of the measurement model was evaluated based on the criteria of reliability, convergent validity, and discriminant validity. First, reliability was examined based on the composite reliability (CR) values. Table 2 shows that all of the values are above 0.7, indicating adequate composite reliability. The average variance extracted (AVE) values for all variables were higher than the suggested threshold value of 0.5, suggesting the convergent validity of the scale.

To examine the discriminant validity of factors whose convergent validity have been established, we compared the average variance extracted (AVE) of each latent factor against the squared correlation coefficients between potential factors, verifying whether all of the AVE values exceed the squared correlation coefficients (1981). Analysis results are reported in Table 3 and show that the squared correlation coefficients among all potential factors was 0.055–0.474 and are smaller than the AVE values range 0.545–0.791, indicating that all potential factors had discriminant validity.

Table 4.2: Discriminant Validity

	EE	**FC**	**HM**	**PC**	**PE**	**PV**	**PI**	**SI**
Effort Expectancy	0.937							
Facilitating Conditions	0.946	0.945						
Hedonic Motivation	0.723	0.726	0.866					
Perceived Control	0.801	0.784	0.837	0.822				
Performance Expectancy	0.232	0.281	0.538	0.488	0.800			

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

Price Value	0.640	0.679	0.927	0.782	0.551	0.954		
Purchase Intention	0.880	0.845	0.885	0.925	0.395	0.823	0.933	
Social Influence	0.925	0.894	0.884	0.861	0.379	0.812	0.938	0.896

4.2. Structural Model

Structure equation modeling (SEM) was conducted using the Partial least square (smart PLS) for hypothesis testing. In order to test the hypotheses using the path coefficients returned by SEM. Table 4 and Figure 2 shows the results of the tests of the hypotheses on the relationship between each of the factors. Performance Expectancy (β = -0.067, t = 2.374, *p* = 0.018) was found to have a significantly positive effect on Purchase Intention, thus supporting H1. Effort Expectancy (β= 0.318, t = 3.188, *p* = 0.002) was found to have a significantly positive effect on Purchase Intention, thus supporting H2. Social Influence (β = 0.183, t = 1.207, *p* = 0.228) was not found to have a significant effect on Purchase Intention, thus rejecting H3. Facilitating Conditions (β = -0.124, t = 1.091, *p* = 0.276) was not found to have positively affect Purchase Intention, thus rejecting H4. Hedonic Motivation (β = 0.175, t = 0.066, *p* = 0.287) was not found to significantly affect Purchase Intention, thus rejecting H5. Perceived control (β = 0.411, t = 5.076, *p* = 0.000) was found to positively affect Purchase Intention, thus supporting H6. Price value (β = 0.108, t = 0.685, *p* = 0.494) were not found to significantly influence continuous use intention, thus rejecting H7.

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

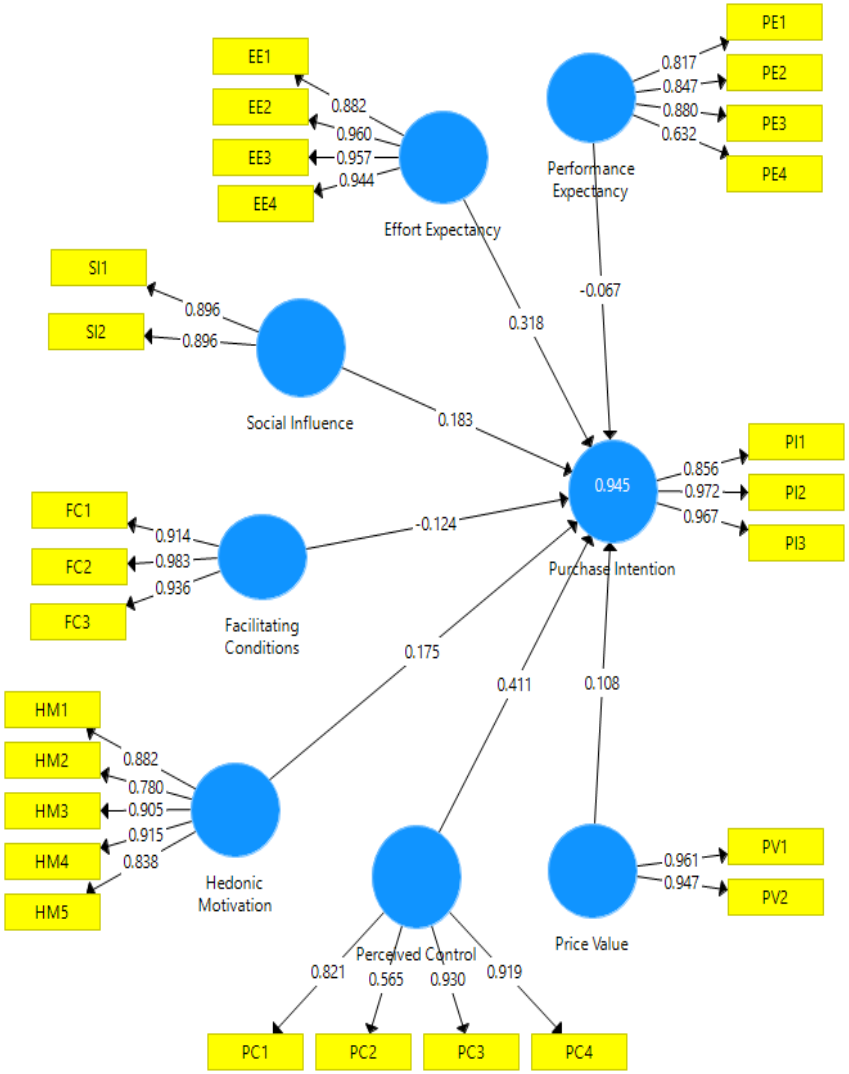


Table 4.3: Structural Analysis

	Hypothesis	Path coefficients	T -Statistics	P-Values	Supported/ Rejected
PE -> PI	H1	-0.067	2.374	**0.018**	Supported
EE -> IP	H2	0.318	3.188	**0.002**	Supported
SI ->IP	H3	0.183	1.207	**0.228**	Rejected
FC-> IP	H4	-0.124	1.091	**0.276**	Rejected
HM-> IP	H5	0.175	1.066	**0.287**	Rejected
PC-> IP	H6	0.411	5.076	**0.000**	Supported
PV -> IP	H7	0.108	0.685	**0.494**	Rejected

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

5. Discussion and Conclusions

5.1. Discussion

The aim of this study was to employ an extended UTAUT2 model that augments the UTAUT2 model with Perceived control to validate the key determinants affecting purchase intention for food delivery apps. This model encompasses various explanatory variables as the determinants for use of delivery app services, including performance expectancy, facilitating conditions, hedonic motivation, Perceived control, effort expectancy, price value, and social influence.

Data analysis results demonstrated that performance expectancy, effort expectancy and Perceived control were determinants that positively influenced the purchase intention of consumers. Therefore, the intention to use an app to order food depends on the user's perceived control and performance expectancy of the app. These findings partially agree with earlier studies (Lee, Lee, Jeon ,2017; Okumus, Bilgihan, and Ozturk,2018; Prasanna, and Huggins,2016) and demonstrate that providing accurate and reliable information in a detailed manner via an adequate app design will lead consumers to perceive delivery apps as useful. This suggests that consumers will purchase intention when they perceive the usefulness of delivery app services, such as saving time, the speed of conducting a transaction, and the diversity of purchase opportunities. We also find that users were influenced by peers. This result is in line with those of Singh and Landman (2017) and Shaw and Sergueeva (2019) and shows that consumers use delivery apps when they perceive them to be more useful than ordering food via phone or smartphone. Ultimately, this study demonstrates that the determinant factor with the strongest positive influence on the purchase intention of delivery apps is performance expectancy and that perceive control plays a crucial role in enhancing the effects of performance expectancy.

On the other hand, we found that ease of use, facilitating conditions, hedonic motivation, social influence, and price value were not key factors determining the purchase intention of delivery apps. This is attributable to the advancement of smartphones and ICT technology that have stabilized app implementation to the extent that consumers face few difficulties in using them. The result on hedonic motivation may be attributable to the short process from search to order, giving consumers little time for pleasure. Finally, consumers do not perceive a price-value benefit because there are no differences in material benefits between placing an order via phone/smartphone or delivery app. Furthermore, social influence was found to have no direct effect on the purchase intention, implying that there is no connection between social influence and purchase intention to be important in a variety of situations by the user. The empirical evidence demonstrates that the extended UTAUT2 model augmented with Perceived control can explain consumers' purchase intentions to order and purchase food using delivery apps.

5.2. Conclusions

This research used the UTAUT2 model to investigate e-commerce customer behavior in the continuous use of mobile delivery app services from a theoretical standpoint. The UTAUT2 model is assumed to have more explanatory power than the TAM model, which had been used to test technology acceptance for a long time, as well as the UTAUT model, which had supplemented TAM. This research is notable in that it used the UTAUT2 model to assess customer behavior, which has seldom been used in the field of food services. Furthermore, this study verified that perceived control is a key variable in food service consumers' acceptance of new information systems by using it as an antecedent variable in the UTAUT2 model and exploring how it is linked to success expectancy, effort expectancy, and purchase intention. This study provides significant scholarly contributions by combining research developments in the fields of food services and information technology. As a result, the theoretical structure

presented in this model could be used as a foundation for future research on food service consumers' e-commerce activity.

In order to encourage customers to continue using delivery app services, it is important to consider the significance of factors such as perceived power, success expectancy, and social impact. To improve users' performance expectations, it will be important to manage the information given. Operators of delivery apps would need to provide users with detailed, accurate information. Vendors of delivery apps must ensure that the information they provide is of the highest quality in terms of accuracy and timeliness in order to accomplish this.

To achieve this goal, vendors must periodically update their menus and price fluctuation details to avoid causing inconvenience to customers. They can also demonstrate their trustworthiness by providing detailed restaurant information to users. Vendors should review their details regularly and confirm the accuracy of information such as business hours, holiday hours, distribution areas, restaurant events, and any excellence certification information to reduce consumer inconvenience and app complaints. The practice of charging a commission for the use of delivery apps is also discouraged, as the additional charge can cause customer dissatisfaction.

In other words, there have been instances where food ordered through a delivery app has smaller servings than food ordered through a traditional method, as well as the charging of delivery fees to customers, resulting in user dissatisfaction. As a result, delivery app providers and restaurants must work together to create a fair and mutually beneficial commission structure that lowers food service costs for customers. When it comes to app design, users must be able to read the content. We recommend using big data, a common technology, to provide objective information such as the number of orders across food categories and the rankings of popular menus as a means of gaining consumers' trust.

Information on a wide range of restaurants across food categories should be given to enable users to choose from a broad range of foods in order to improve performance expectancy as viewed by consumers. Furthermore, product comparisons across restaurants and food categories should be made as simple as possible to help consumers make more informed decisions. In this regard, the composition and design of distribution apps are critical. In order to save time, transaction procedures must also be simplified.

When it came to choosing which app to use, users were found to be heavily influenced by their peers, implying that delivery app providers must be diligent in seeking word-of-mouth marketing. Given that users in their 20s and 30s make up a significant portion of delivery app users and are frequent social network users, there is a need to aggressively use social media to reach these age groups as a core user base.

5.3 Limitations and future research

While this study opens up new avenues for restaurant research, it is not without flaws. As a consequence, its findings must be viewed in the context of the analysis. For example, the data was only collected in Ghana, so the analysis only represented consumers' intentions to purchase OFDS in Ghana. By concentrating on the Ghanaian market, the study only looked at consumer behavior in relation to restaurants in Ghana, which reflects the general lifestyle of the Ghanaian population (job emphasis, limited free time, abundance of restaurants) (Kotler et al., 2016). As a result, the findings' applicability outside of Ghana may be limited. Future research can be replicated in other countries to address this issue.

This research created a model that fully explains OFDS adoption while remaining parsimonious. As a result, scholars may advance this field by adding various constructs that characterize customer or device characteristics, as well as the relationship with the restaurant

(loyalty, trust). Future studies should model different demographic and behavioral variables as moderators, as this study used a general sample to optimize external validity. Future research may look at whether factors like gender or age have an effect on OFDS purchases. Moreover, future research might look at how the buying decisions of the individual who actually makes the purchase using OFDS reflect the motives of the entire consumption party (family, group of friends).

Even though it was impossible to conceptualize the actual consumers' intentions to use separate OFDS within the context of a single sample, this study focused on general intentions to use OFDS rather than any individual OFDS. Future research could concentrate on particular types of OFDS as the OFDS market becomes more competitive and customers have enough knowledge to decide the positioning of different OFDS.

The position of price incentives such as coupons or discounts in this context may be an important area for future research. Artificial intelligence algorithms are increasingly being used in the pricing strategies of online retailers, so this field may be even more fruitful. Overall, the research provided preliminary insight into how restaurant patrons use OFDS. Further research is needed to understand the processes by which customers, OFDS, and restaurant stakeholders' appropriate value as this field of food service and technology consolidates.

References

[1] Abbas, S. K., Hassan, H. A., Asif, J., Ahmed, B., and Haider, S. S. (2018). Integration of TTF, UTAUT, and ITM for mobile Banking Adoption. International Journal of Advanced Engineering, Management and Science (IJAEMS) Vol-4, Issue-5.

[2] Agarwal, R., and Karahanna, E. (2000). Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. MIS quarterly, 665-694.

[3] Ajzen, I. (1991). The theory of planned behavior. Organizational behavior and human decision processes, 50(2), 179-211.

[4] Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior 1. Journal of applied social psychology, 32(4), 665-683.

[5] Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. British journal of social psychology, 40(4), 471-499.

[6] Averill, J. R. (1973). Personal control over aversive stimuli and its relationship to stress. Psychological bulletin, 80(4), 286.

[7] Beuckels, E., & Hudders, L. (2016). An experimental study to investigate the impact of image interactivity on the perception of luxury in an online shopping context. Journal of Retailing and Consumer Services, 33, 135-142.

[8] Boksberger, P and Melsen, L (2011). Perceived value: A critical examination of definitions, concepts and measures for service industry. Journal of Service Marketing 25(3):229-240

[9] Brown, S. A., and Venkatesh, V. (2005). Model of adoption of technology in households: A baseline model test and extension incorporating household life cycle. *MIS quarterly*, 399-426.

[10] Carlsson, C., Hyvönen, K., Repo, P., Walden, P., (2005). Asynchronous Adoption Patterns of Mobile Services, Proceedings of the 38th Hawaii International Conference on System Sciences (HICSS-38), Island of Hawaii, USA

[11] Chang, E. C., and Tseng, Y. F. (2013). Research note: E-store image, perceived value and perceived risk. Journal of business research, 66(7), 864-870.

[12] Childers, T. L., Carr, C. L., Peck, J., and Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behavior. Journal of retailing, 77(4), 511-535.

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

[13] China Internet Network Information Center (CNNIC), 2014
[14] Cummins, S., Peltier, J. W., Schibrowsky, J. A., and Nill, A. (2014). Consumer behavior in the online context. Journal of Research in Interactive Marketing.
[15] Curtis, L., Edwards, C. and Kirsten, L.F., (2010). Adoption of Social Media for Public Relations by Non-Profit Organisation. Public Relations Review 36(1): 90-92
[16] Dodds, W. B., Monroe, K. B., and Grewal, D. (1991). Effects of price, brand, and store information on buyers' product evaluations. Journal of marketing research, 28(3), 307-319.
[17] Du, Y. and Tang, Y. (2014). Study on the development of O2O e-commerce platform of China from the perspective of offline service quality. Int. J. Bus. Soc. Sci., 5, 308–312.
[18] Escobar-Rodríguez, T., & Carvajal-Trujillo, E. (2013). Online drivers of consumer purchase of website airline tickets. Journal of Air Transport Management, 32, 58-64.
[19] Featherman, M. S., and Pavlou, P. A. (2003). Predicting e-services adoption: a perceived risk facets perspective. *International journal of human-computer studies*, *59*(4), 451-474.
[20] Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research.
[21] Foon, Y. S., and Fah, B. C. Y. (2011). Internet banking adoption in Kuala Lumpur: an application of UTAUT model. International Journal of Business and Management, 6(4), 161.
[22] George, J. F. (2004). The theory of planned behavior and Internet purchasing. Internet research.
[23] Hair Jr, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. European business review.
[24] Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. Journal of the Academy of Marketing Science, 45(5), 616-632.
[25] He, D., Lu, Y., & Zhou, D. (2008). Empirical study of consumers' purchase intentions in C2C electronic commerce. Tsinghua Science & Technology, 13(3), 287-292.
[26] Hung, Y. H., Wang, Y. S., and Chou, S. C. T. (2007). User acceptance of e-government services. PACIS 2007 Proceedings, 97.
[27] Joins. The 'Stay-at-home Folk' Behind the Growth of the Delivery App Market to 70 billion KRW, 5 March 2019. Available online: https://news.joins.com/article/23401558 (accessed on 8th April, 2021)
[28] Kijsanayotin, B., Pannarunothai, S., and Speedie, S.M. (2009). Factors influencing health information technology adoption in Thailand's community health centers: Applying the UTAUT model. International Journal of Medical Informatics, 78(6), 404-416. doi: 10.1016/j.ijmedinf.2008.12.005
[29] Kim, S.H.; Bae, J.H.; Jeon, H.M. (2019). Continuous intention on accommodation apps: Integrated value-based adoption and expectation—Confirmation model analysis. Sustainability, 11, 1578.
[30] Kotler, P. (2016). A framework for marketing management. Pearson Education Limited.
[31] Kourouthanassis, P. E., Georgiadis, C. K., Zamani, E., and Giaglis, G. M. (2010, June). Explaining the adoption of mobile internet applications. In 2010 Ninth International

Technium Social Sciences Journal
Vol. 25, 496-514, November, 2021
ISSN: 2668-7798
www.techniumscience.com

Conference on Mobile Business and 2010 Ninth Global Mobility Roundtable (ICMB-GMR) (pp. 148-153). IEEE.

[32] Langer, E. J (1983). The Psychology of Control. Behavioural and Cognitive Psychotherapy. 14(2). Sage Publications

[33] Lee, C. H., Eze, U. C., and Ndubisi, N. O. (2011). Analyzing key determinants of online repurchase intentions. Asia Pacific Journal of Marketing and Logistics.

[34] Lee, E.Y.; Lee, S.B.; Jeon, Y.J.J. (2017). Factors influencing the behavioral intention to use food delivery apps. Social Behavior and Personality: an international journal, 45(9), 1461–1473.

[35] Lee, J., and Allaway, A. (2002). Effects of personal control on adoption of self-service technology innovations. Journal of Services marketing.

[36] Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors influencing online shopping behavior: the mediating role of purchase intention. Procedia economics and finance, 35, 401-410.

[37] Liu, W.; Batra, R.; Wang, H. (2017). Product touch and customers' online and offline buying: The role of mental representation. J. Retail. 93, 369–381.

[38] López-Nicolás, C., Molina-Castillo, F. J., and Bouwman, H. (2008). An assessment of advanced mobile services acceptance: Contributions from TAM and diffusion theory models. Information and management, 45(6), 359-364.

[39] Lyu, S.O.; Hwang, J. (2015). Are the days of tourist information centers gone? Effects of the ubiquitous information environment. Tour. Management 48, 54–63.

[40] Maimaiti, M.; Zhao, X.; Jia, M.; Ru, Y.; Zhu, S. (2018). How we eat determines what we become: Opportunities and challenges brought by food delivery industry in a changing world in China. European Journal of Clinical Nutrition., 72(9), 1282–1286.

[41] Mikalef, P., Pappas, I. O., Giannakos, M. N., Krogstie, J., and Lekakos, G. (2016, September). Big Data and Strategy: A research Framework. In MCIS (p. 50).

[42] Ministry of Communication (2021) Available online: www.moc.gov.gh (Accessed on 21st January,2021)

[43] Morwitz, V. G., Steckel, J. H., and Gupta, A. (2007). When do purchase intentions predict sales?. International Journal of Forecasting, 23(3), 347-364.

[44] Neufeld, D., Dong, L. and Higgins, C. (2007). Charismatic leadership and user acceptance of information technology. European Journal of Information Systems. 16(4):494-510

[45] Nguyen, D., Rieu, I., Mariani, C., & van Dam, N. M. (2016). How plants handle multiple stresses: hormonal interactions underlying responses to abiotic stress and insect herbivory. Plant Molecular Biology, 91(6), 727-740.

[46] Nikhashemi, S. R., Tarofder, A. K., Gaur, S. S., and Haque, A. (2016). The effect of customers' perceived value of retail store on relationship between store attribute and customer brand loyalty: Some insights from Malaysia. Procedia Economics and Finance, 37, 432-438.

[47] Nov, O. and Ye, C. (2009). Resistance to change and the adoption of digital libraries: An integrative model. Journal of the American Society for Information Science and Technology 60(8):1702-1708

[48] Okumus, B.; Ali, F.; Bilgihan, A.; Ozturk, A.B. (2018) Psychological factors influencing customers' acceptance of smartphone diet apps when ordering food at restaurants. International Journal of Hospitality Management, 72, 67–77.

[49] Pahnila, S., Siponen, M., and Zheng, X. (2011). Integrating habit into UTAUT: The Chinese eBay case. Pacific Asia Journal of the Association for Information Systems, 3(2), 2.

[50] Pai, J. C., and Tu, F. M. (2011). The acceptance and use of customer relationship management (CRM) systems: An empirical study of distribution service industry in Taiwan. Expert Systems with Applications, 38(1), 579-584.

[51] Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. International journal of electronic commerce, 7(3), 101-134.

[52] Pavon, F and Brown, I.T (2010). Factors influencing the adoption of the World wide web for job-seeking in South Africa. SA Journal of Information Management 12(1)

[53] Petrick, J. F. (2002). Development of a multi-dimensional scale for measuring the perceived value of a service. Journal of leisure research, 34(2), 119-134.

[54] Pillai, A., and Mukherjee, J. (2011). User acceptance of hedonic versus utilitarian social networking web sites. Journal of Indian Business Research.

[55] Pookulangara, S., and Koesler, K. (2011). Cultural influence on consumers' usage of social networks and its' impact on online purchase intentions. Journal of Retailing and Consumer Services, 18(4), 348-354.

[56] San Martín, H., & Herrero, Á. (2012). Influence of the user's psychological factors on the online purchase intention in rural tourism: Integrating innovativeness to the UTAUT framework. Tourism Management, 33(2), 341-350.

[57] Schaupp, L. C., Carter, L., and McBride, M. E. (2010). E-file adoption: A study of US taxpayers' intentions. Computers in Human Behavior, 26(4), 636-644.

[58] Shafi, A. S., and Weerakkody, V. (2009, August). Understanding citizens' behavioural intention in the adoption of e-government services in the state of Qatar. In ECIS (Vol. 1, pp. 1618-1629).

[59] Shaw, N., & Sergueeva, K. (2019). The non-monetary benefits of mobile commerce: Extending UTAUT2 with perceived value. International Journal of Information Management, 45, 44-55.

[60] Shim, S., Eastlick, M. A., Lotz, S. L., and Warrington, P. (2001). An online prepurchase intentions model: the role of intention to search: best overall paper award—The Sixth Triennial AMS/ACRA Retailing Conference, 2000☆. Journal of retailing, 77(3), 397-416.

[61] Singh, K., & Landman, A. B. (2017). Mobile health. In Key Advances in Clinical Informatics (pp. 183-196). Academic Press.

[62] Singh, M., & Matsui, Y. (2017). How long tail and trust affect online shopping behavior: An extension to UTAUT2 framework. Pacific Asia Journal of the Association for Information Systems, 9(4), 2.

[63] Soltani, I.B. and Gharbi, J.E. (2008). Determinants and Consequences of the website perceived value. Journal of Internet Banking and Commerce 13(1):1-13

[64] Sundström, M., Hjelm-Lidholm, S., & Radon, A. (2019). Clicking the boredom away–Exploring impulse fashion buying behavior online. Journal of Retailing and Consumer Services, 47, 150-156.

[65] Teo, T. (2011). Factors influencing teachers' intention to use technology: Model development and test. Computers and Education, 57(4), 2432-2440.

[66] Thong, J.Y.L., Hong, S.J. and Tam, K.Y., (2006). The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuance. International Journal of Human-Computer Studies, 64(9), 799-810

[67] Tibenderana, P., Ogao, P., Ikoja-Odongo, J., and Wokadala, J. (2010). Measuring levels of end-users' acceptance and use of hybrid library services. International Journal of Education and Development using ICT, 6(2), 33-54.
[68] Venkatesh, V.; Morris, M.G.; Davis, G.B.; Davis, F.D. (2003). User acceptance of information technology, toward a unified view. MIS Quarterly, 27, 425–478.
[69] Venkatesh, V.L.; Thong, J.Y.; Xu, X. (2012). Customer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Q, 36, 157–178.
[70] Wang, Y. (2006). A cross-cultural study of customer attitudes and emotional responses of apparel purchase behavior", unpublished doctoral dissertation, Florida State University, Tallahassee, FL.
[71] Wang, Z., Ji, K., Zhou, Y., Liang, Y., & Tarokh, V. (2019). Spiderboost and momentum: Faster variance reduction algorithms. Advances in Neural Information Processing Systems, 32, 2406-2416.
[72] Wei, C. L., & Ho, C. T. (2019). Exploring signaling roles of service providers' reputation and competence in influencing perceptions of service quality and outsourcing intentions. Journal of Organizational and End User Computing (JOEUC), 31(1), 86-109.
[73] Wijewardene, D., Azam, S.M.F and Ali, K. (2018). Students' acceptance of online courses and perceived risk: A study of UTAUT in the Sri Lankan State Universities. International Journal of Advances in Scientific Research and Engineering. Vol. 4, Issue 1
[74] Williams, M. D., Rana, N. P., and Dwivedi, Y. K. (2015), The unified theory of acceptance and use of technology (UTAUT): a literature review. Journal of Enterprise Information Management, 28(3), pp. 443-488.
[75] Wills, M., El-Gayar, O.F. and Bennett, D. (2008). Examining healthcare professionals' acceptance of electronic medical records using UTAUT. Dakota State University
[76] Wu, Y. L., Tao, Y. H., and Yang, P. C. (2007, December). Using UTAUT to explore the behavior of 3G mobile communication users. In 2007 IEEE international conference on industrial engineering and engineering management (pp. 199-203). IEEE.