

Factors Affecting Customer Satisfaction towards Mobile Food Ordering Applications (MFOAs)

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Abstract

Abundant growth of technology and mobile devices nowadays is creating a great impact on the hospitality sector in general and in restaurants in particular especially in the form of ordering food. Although ordering food through mobile applications considered an active role in the overall restaurant sector, little is known about customer perception about using mobile food applications. Therefore, this study evaluates customer feedback toward ordering food through mobile applications in order to recommend some considerations, allowing restaurant sector to identify areas of weakness and make further improvements to increase customer satisfaction when ordering food through mobile applications. A measurement tool in the form of a questionnaire was used to explore customer satisfaction toward ordering food through a mobile application. The survey contains eight constructs i.e. “control; convenience; enjoyment; technology anxiety; perceived ease of use; usefulness; security and payment; satisfaction. Mann-Whitney U, Kruskal-Wallis tests and confirmatory factor

analysis (CFA) were utilized to analyze 171 questionnaire forms collected from customers. The study results depict that ease of use, usefulness, security and payment were the most important factors affected on customer satisfaction.

Keywords: Online ordering; Electronic ordering; Mobile food ordering applications (MFOAs); Confirmatory factor analysis (CFA).

Introduction

Smart technologies and mobile applications (apps) software have become an extensive part of our daily modern life and an essential channel for businesses looking for better communication with their customers. (Baabdullah et al., 2019; Ismagilova et al., 2019; Lu et al., 2019; Malaquias & Hwang, 2019; Alalwan, 2020). Mobile application which also may known as (an app, web app, online app, iPhone app or smartphone app) refers to a software program designed especially for use in small, wireless

computing devices such as smartphones, iPads, tablets, smart watches rather than laptop or desktop computers. The mobile applications could be downloaded by many online suppliers as Apple's App Store, Google Play Store, and Amazon App Store. Users can do many activates such as shopping, banking, social networking, searching information, entertainment,... etc (Elangovan & Agarwal, 2015; Malik et al., 2017).

The worldwide market for mobile application industry achieved \$3,120 million in 2016, and it is estimated to reach \$16,605 million by 2023 (Sahoo & Sonawane, 2017). At the end of 2016, users downloaded about 2.26 million applications (apps) by Apple's App Store compared to 2.8 million by Google's Play Store, and more than 178.1 billion applications had been downloaded by 2017, and this figure is anticipated to reach about 258.2 billion by 2022 (Statista, 2018).

Mobile food ordering applications (MFOAs) considered one of the most popular mobile applications that have recently been developed by the service sector in Egypt due to the growth of the promising mobile market that included 95.34 million mobile subscriptions and more than 40 million mobile internet users in December (2019) compared to 35.06 million users in December (2018) (MCIT, 2020). Otlop was the first food ordering mobile application in Egypt, launching in 1999, the application is rated 4.6 on Google Play Store and has more than 5 million downloads and provide the users with offers from thousands of restaurants in more than 25 cities (Otlob, 2020). Other mobile food ordering applications that have recently occurred in Egypt include Glovo, Uper Eats, Careem Now, Akelni, and elmenus.

Even though mobile food ordering applications have become popular and

attracting restaurants' customers in Egypt in recent years, the associated subjects of these applications have not been completely studied and examined by researchers and academics. Moreover, as most of the previous studies focused on customer's attitude, adoption, perspective, and intention toward mobile applications in general (Pigatto et al., 2017) and mobile food ordering applications in particular (Yeo et al., 2017; Okumus et al., 2018; Cho et al., 2019; Wang et al., 2019; Alalwan, 2020).

This study will go further by studying the factors affecting customer satisfaction of using mobile applications for ordering food in order to assist restaurant sector to identify areas of weakness and make further improvements on these applications to increase customer satisfaction.

Review of Literature

Mobile Food Ordering Applications (MFOAs)

Mobile food ordering applications (MFOAs) could be defined as mobile applications, that users of smartphones download and use as an easy and modern channel to reach restaurants, view food & beverage menus, make orders and payments without any physical contact with the restaurant staff (Wang et al., 2019). Food & beverages applications were rated by Apple's App Store as the second most mobile applications downloaded by smartphone users (Appfigures, 2016). According to a report issued by Boston Consulting Group in 2017, about sixty percent (60%) of the catering customers adopted at least one of the mobile food ordering applications (BCG, 2017). The mobile applications and in-store tablet computers were recognized as technology trends for customers, chefs and restaurants by the National Restaurant Association (NRA, 2014). There are many benefits could be

achieved if restaurants use the mobile applications as one of their online food ordering channels. These benefits could include increased sales, enhanced restaurant capacity, improved e-customer relationship management (e-CRM), enhanced order accuracy and productivity (Nilashi et al., 2015; Aksenova, 2017).

Control

The growth of interactive technologies in the mobile applications has made the customers more active, engaged and in control. By using MFOAs, customers can do many online activities with just one click such as collecting updated information about the restaurants & menus, making comparison between alternatives, tracking his order progress and delivery, choosing the appropriate method of payment, and providing comments, and reviews (Yang et al., 2017; Carlson et al., 2019).

Convenience

Customers might be most interested in mobile applications, which facilitate food ordering (Doub et al., 2015). Many restaurants are still using phone calls for ordering food process. This traditional method could include lots of human errors and waiting time, which could result in unsatisfactory experience for the customer and negative impacts on products and subsequently on restaurant's profit. Both customers and restaurants can benefit from adopting MFOAs. By using such applications, customers can efficiently and easily access a wide range of restaurants at their convenient time and locations. This application could also be a competitive advantage for restaurants by providing convenience, enhancing accuracy, increasing efficiency, and overcoming problems such as miscommunications, traffic, delayed delivery (Algharabat et al., 2017; Marriott et al., 2017).

Enjoyment

Enjoyment refers to the fun part perceived by customers when they use any technology. (Yeo et al. (2017) found that as long as customers find that mobile food ordering applications (MFOAs) is enjoyable and fun, they regard them as useful and helping in making their life easier, and therefore they are more likely to have positive attitudes toward them and intention to reuse such applications in the future.

Technology Anxiety

Technology anxiety is often considered as an attitude toward technology. A person's negative attitude towards technology was identified as a characteristic of a person with technology anxiety (Garland & Noyes, 2004). This anxiety is called as (technophobia) also indicated as being fear of present or future exposure to technology or devices-related technology (North & Noyes, 2002). Moreover Saadé and Kira (2009) defined technology anxiety as "feeling of being fearful or apprehensive when using or considering the use of technology".

Technology Acceptance model (TAM)

Technology acceptance has been studied over the years for assessing the customers' perception or behavioral intention to accept technology. Davis (1993) developed the TAM, which was derived from The Theory of Reasoned Action (TRA) proposed by Fishbein & Ajzen (1975). TAM describes the acceptance of users in adopting new technology. According to Davis (1993) user's behavioral intention toward using a system or a new technology is determined by two main factors: perceived usefulness and perceived ease of use. This study constructs on the previous theoretical theories and models to

investigate the factors that motivate customer usage for MFOAs.

Perceived Usefulness

Perceived usefulness as defined by Davis (1993) refers to the degree of the user believes that using technology will improve his or her conditions. Moreover Cho et al. (2019) defined perceived usefulness as the ability of a new application and system to assist customers get what they want and need in helpful way by using mobile food ordering applications (MFOAs), customers can perceive a high level of useful value by access any restaurant at any time, for making their orders without any physical move, avoid problems such as traffic, parking, and waiting times (Shaw & Sergueeva, 2019; Wanget al., 2019; Tseng et al., 2019).

Several studies (Sharma & Sharma, 2019; Tamilmani et al., 2019) have empirically confirmed that perceived usefulness has a positive and significant impact on user's satisfaction of using online ordering systems

Perceived Ease of Use

Perceived Ease of Use (effort expectancy) as defined by Okumus et al. (2018) is the level of ease related to the use of a technology. Chan et al. (2010) proven that perceived ease of use affect users' attitudes and intentions. Furthermore, perceived ease of use has a significant impact on users' satisfaction and their intention to continue use an information system (Wu & Wang, 2005). Davis (1993) mentioned that ease of use positively affects the usefulness of the system. This positive relationship between ease of use and usefulness are later supported by (Bruner & Kumar, 2005).

Security and payment

Security, privacy and payment system have been addressed in many studies as the primary reasons of online customer's trust when buying any product (Mukherjee & Nath, 2007). Trust has a positive impact on the customer intention to reuse the online websites as noted by Poon (2008). Online shoppers are known for their low patience of system feedback as mentioned by Flavian et al. (2006). Therefore, mobile applications designer should consider safer payment procedures for user's transaction option. Otherwise, users may hesitate to use the application's payment system. Furthermore Chimote & Dhole (2017) added that Trustworthy payment system of food ordering mobile applications has a positive effect on the customer satisfaction.

Customer Satisfaction

Customer satisfaction as defined by Kotler (2000) is a mental state that results from customer's comparison between his expectations before a purchase and performance perceptions after a purchase.

According to this definition, it could be argued that if customer's usage experience about mobile food ordering applications that match or exceed their expectations, they are more likely to be satisfied and motivated to reuse such applications. This confirmed by Amoroso & Lim (2017) who recommended that as long as customer are satisfied about their experience of using MFOAs, they are expected to be loyal toward such applications and have intentions to use them again.

A Proposed Model and its Research Hypotheses

A study conducted by Kimes (2011) found that control; convenience, ease, speed, and secured paying with credit cards were the

primary reasons that motivate users for ordering food via online channels. This agreed with previous studies, which indicated that most factors satisfy customers and enable them using online service are convenience and control (Colwell et al., 2008). Other studies found that the main reasons of avoiding mobile applications for ordering food are technology anxiety and preferring interaction with the human element (Meuter et al., 2005; Kimes 2011) Based on the above discussion, the following hypotheses are posited (see figure1) in order to achieve the main objective of this study and determine the most factors that affect customer satisfaction when ordering food through mobile applications.

H1: Control has a significant impact on perceived ease of using mobile food ordering applications

H2: Enjoyment has a significant impact on perceived ease of using mobile food ordering applications

H3: Technology anxiety has a significant impact on perceived ease of using mobile food ordering applications

H4: Convenience has a significant impact on usefulness of mobile food ordering applications

H5: Enjoyment has a significant impact on usefulness of mobile food ordering applications

H6: Security and payment has a significant impact on usefulness of mobile food ordering applications

H7: Perceived ease of use has a significant impact on usefulness of mobile food ordering applications.

H8: Perceived Usefulness has a significant impact on customer satisfaction.

H9: Perceived ease of use has a significant impact on customer satisfaction.

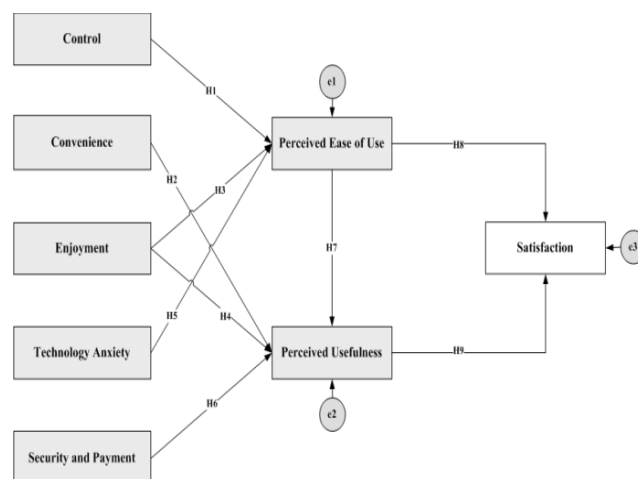


Figure 1: Conceptual model

Methodology

Survey Instrument

This study employed a paper-based survey as the data-gathering instrument, which was adapted and revised from previous studies (Ngai et al., 2007; Kimes, 2011; Kedah & Ismail, 2015). The final questionnaire items are shown in table (1) along with their sources. The questionnaire was fine-tuned through discussions with academic staff, restaurants' managers, IT experts, and some customers using mobile applications for ordering food. The questionnaire was pilot tested to evaluate the wording of the questions, the question sequence, and length. The questionnaire was divided into three sections. In the first section, customers were asked to rate 30 items in response to the question: to what extent do you agree or disagree with each statement? On 5 points Likert scale: "strongly disagree," "disagree," "neither agree nor disagree," "agree" and "strongly agree".

Questions 1-4 measured control construct, questions 5-8 measured convenience, questions 9-11 measured enjoyment, questions 12-15 measured technology anxiety, questions 16-19 measured perceived ease of use (PEOU), questions 20-23 measured

usefulness, questions 24-27 measured security and payment, and questions 28-30 measured satisfaction about using mobile applications. The second section asked restaurant customers about their satisfaction of mobile food applications. The Third section asked customers for demographic characteristics (i.e., gender, age, income, and education).

Sample, Sampling, and Procedures

Restaurants' customers whom used ordering food application were selected for this study. Therefore, convenience sampling was utilized. Paper-based survey was developed and distributed. The survey instrument assured customers confidentially as no personal information was asked that could be used to identify participants. A total of 200 questionnaire forms were distributed to restaurants' customers. Among the questionnaires returned, 171 were usable ones, representing a response rate of 85.5 percent.

Table (1): Construct measurement and sources

Construct	Items	Measure	Source
Control	CL1	I feel in control using mobile food application.	Kimes, (2011)
	CL2	Mobile food application let me in charge	
	CL3	While using mobile food application, I feel decisive	
	CL4	Mobile food application gives me more control over the food that I order for delivery or takeout.	
Convenience	CE1	Mobile food application allows me to initiate a transaction whenever I choose.	Kimes, (2011)
	CE2	Mobile food application allows me to initiate a transaction at a convenient time.	
	CE3	I value the ability to initiate the transaction from the comfort of home	
	CE4	I like the ability to order food at any place.	
Enjoyment	E1	I enjoy using mobile food application.	Davis (1993); Lee et al. (2005).
	E2	The actual process of using mobile food application is pleasant.	
	E3	I have fun using mobile food application.	
Technology anxiety	TA1	I hesitate to use mobile food application for fear of making a mistake I cannot correct	Kimes, (2011).
	TA2	I feel apprehensive about using mobile food application	
	TA3	I have avoided mobile food application because it is unfamiliar to me	
	TA4	Technical terms sound like confusing jargon to me	
Perceived ease of use	PEU1	Interacting with the mobile food application does not require a much mental effort.	Ngai et al. (2007); Kedah & Ismail (2015).
	PEU2	I find the mobile food application to be easy to use.	
	PEU3	My interaction with mobile food application is clear and understandable.	
	PEU4	I find it easy to get the mobile food application to do what I want it to do.	
Usefulness	U1	Using mobile food application is very convenient.	Davis (1993); Ngai et al. (2007); Kedah & Ismail (2015).
	U2	Mobile food application is significant money savings	
	U3	Using the mobile food application can fit my needs.	
	U4	By using mobile food application no misunderstandings and no frustrations can occur.	
Security and payment	SP1	Using mobile food application makes a quicker payment.	Kedah & Ismail (2015).
	SP2	Mobile food application makes is safer spending option when I am travelling.	
	SP3	Mobile food application makes is easier spending option when I am travelling.	
	SP4	Mobile food application reduces risk than carrying cash.	
Ordering food application satisfaction	S1	My decision to use the mobile food application was a wise one.	Kimes, (2011); D'Abate et al. (2017).
	S2	I am pleased with the experience of using the mobile food application.	
	S3	I am satisfied with the performance of the mobile food application.	

Data Analysis

Structural equation modeling (SEM) technique was adopted using Analysis of moment structure (AMOS). AMOS is statistical software and it stands for analysis of a moment structures. It is an added SPSS module, and is specially used for Structural Equation Modeling,

path analysis, and confirmatory factor analysis. It is also known as analysis of covariance or causal modeling software.

First, Confirmatory factor analysis (CFA) was utilized to trail the measurement model of mobile application satisfaction. Second, Cronbach's α and composite reliability (CR) were utilized to test the constructs reliability. Third, maximum likelihood was used to gauge the causal relationship among all the variables. Fourth, Mann-Whitney U test and Kruskal-Wallis were employed to test the differences between customers' gender, age, income, and education.

Results

Personal Profile

This study investigated the customers' feedback about their satisfaction by using mobile applications for ordering food. A survey was distributed to 200 customers. Among the questionnaires returned, 171 were usable ones, constituting a response rate of 85.5 percent. Table (2) represents the profile of customer who took part in the study. Among the 171 customers who participated in the study, 61.4% were males and 38.6% were females. The majority of the customers (77.8%) were 18-24 years old, followed by 11.7% of the customers were 25-34 years old, and 9.4% were between 35-49 years old. Most customers (80.1%) their income 5000 LE or less, followed by only 11.7% of customers have an income between 5001-

1000 LE, and 8.2% they have an income more than 10000. Most of the customers (81.3%) had a university education, followed by 8.2%, 4.7% of the customers had a secondary education; higher secondary respectively finally 4.7% had higher education.

Table (2): Customers' profile (N=171)

Variables	Frequencies	Percentage
Gender		
Female	66	38.6
Male	105	61.4
Age		
18-24	133	77.8
25-34	20	11.7
35-49	16	9.4
50-64	2	1.2
65+	0	0
Income		
5000 LE or less	137	80.1
5001-10000	20	11.7
More than 10000	14	8.2
Education		
Secondary and below	14	8.2
Higher Secondary	8	4.7
University	139	81.3
Others	10	5.8

A Descriptive Analysis of the Factors Influencing Customers' Satisfaction

Statistical Package for the Social Sciences (SPSS) is a software package used for the analysis of statistical data. SPSS version 20 was used to analyze the factors influencing restaurant customers' satisfaction about mobile application when ordering food from restaurants (i.e., 30 items) descriptively. Thirty items were analyzed by their means and standard deviations as showed in Table (3).

Table (3) shows that customers were mostly satisfied with the mobile food application they used and the positive impacts of mobile food application options for the future ordering process, as follows: "I value the ability to initiate the transaction from the comfort of home" (M = 4.44); "Mobile food application

allows me to initiate a transaction at a convenient time.” (M = 4.43); “I like the ability to order food at any place.” (M = 4.43); “Mobile food application gives me more control over the food that I order for delivery or takeout.” (M = 4.22); “Mobile food application allows me to initiate a transaction whenever I choose.” (M = 4.19); “While using mobile food application, I feel decisive”.

However, the customers were mostly dissatisfied with payment options like the way of payment, and anxious from using the application as follows: “Mobile food application makes is safer spending option when I am travelling” (M = 2.96); “I feel apprehensive about using mobile food application” (M = 2.96).

Table (3): A descriptive analysis of the factors influencing customers' satisfaction

Items	Mean	Std. Deviation
I feel in control using mobile food application.	4.15	0.931
Mobile food application let me in charge	4.01	1.119
While using mobile food application, I feel decisive.	4.17	1.074
Mobile food application gives me more control over the food that I order for delivery or takeout.	4.22	0.911
Mobile food application allows me to initiate a transaction whenever I choose.	4.19	0.883
Mobile food application allows me to initiate a transaction at a convenient time.	4.43	0.818
I value the ability to initiate the transaction from the comfort of home.	4.44	0.805
I like the ability to order food at any place.	4.43	0.887
I enjoy using mobile food application.	3.98	1.101
The actual process of using mobile food application is pleasant.	4.12	1.030
I have fun using mobile food application.	4.16	1.067
I hesitate to use mobile food application for fear of making a mistake I cannot correct.	3.05	1.301
I feel apprehensive about using mobile food application.	2.96	1.236
I have avoided mobile food application because it is unfamiliar to me.	3.80	1.112
Technical terms sound like confusing jargon to me.	3.17	1.274
Interacting with the mobile food application does not require a much mental effort.	3.66	1.149
I find the mobile food application to be easy to use.	4.12	0.906
My interaction with mobile food application is clear and understandable.	3.94	0.889
I find it easy to get the mobile food application to do what I want it to do.	4.30	0.900
Using mobile food application is very convenient.	3.82	1.110
Mobile food application is significant money savings.	3.77	1.148
Using the mobile food application can fit my needs.	3.95	1.105
By using mobile food application no misunderstandings and no frustrations can occur.	4.03	1.098
Using mobile food application makes a quicker payment.	4.15	1.057
Mobile food application makes is safer spending option when I am travelling.	2.96	1.236
Mobile food application makes is easier spending option when I am travelling.	4.03	1.037
Mobile food application reduces risk than carrying cash.	4.02	1.093
My decision to use the mobile food application was a wise one.	4.00	1.117
I am pleased with the experience of using the mobile food application.	3.98	1.017
I am satisfied with the performance of the mobile food application.	4.04	1.165

Analysis of Variance

A statistical analysis of variance between genders in terms of application satisfaction

The Mann-Whitney U test was utilized to test for differences between males (n=105) and females (n=66) in terms of mobile food application-satisfaction (Table 4). For example, do males and females differ in terms of mobile food application-satisfaction?

A Mann-Whitney U test revealed no

statistically significant difference between male and female customers in terms of 26 mobile application satisfaction items. More specifically, male and female customers had the same expectations towards “I feel in control using mobile food application; Mobile food application let me in charge; while using mobile food application feel decisive; I am pleased with the experience of using the mobile food application”.

Table (4): Gender differences in terms of mobile food application satisfaction

Items	Gender	Mean Rank	Mann-Whitney U	Asymp. Sig. (2-tailed)
I feel in control using mobile food application.	Male	85.49	3411.0	0.854
	Female	86.82		
Mobile food application let me in charge.	Male	85.57	3420.0	0.880
	Female	86.68		
While using mobile food application, I feel decisive.	Male	86.63	3399.0	0.819
	Female	85.00		
Mobile food application gives me more control over the food that I order for delivery or takeout.	Male	85.61	3424.0	0.888
	Female	86.62		
Mobile food application allows me to initiate a transaction whenever I choose.	Male	84.47	3304.0	0.582
	Female	88.44		
Mobile food application allows me to initiate a transaction at a convenient time.	Male	80.16	2852.0	0.004
	Female	95.29		
I value the ability to initiate the transaction from the comfort of home.	Male	79.86	2820.0	0.001
	Female	95.77		
I like the ability to order food at any place.	Male	84.80	3339.0	0.644
	Female	87.91		
I enjoy using mobile food application.	Male	84.73	3332.0	0.655
	Female	88.02		
The actual process of using mobile food application is pleasant.	Male	82.74	3123.0	0.244
	Female	91.18		
I have fun using mobile food application.	Male	82.85	3134.0	0.254
	Female	91.02		
I hesitate to use mobile food application for fear of making a mistake I cannot correct.	Male	83.68	3221.0	0.427
	Female	89.70		
I feel apprehensive about using mobile food application.	Male	86.22	3442.0	0.940
	Female	85.65		
I have avoided mobile food application because it is unfamiliar to me.	Male	85.46	3408.0	0.853
	Female	86.86		
Technical terms sound like confusing jargon to me.	Male	90.77	2964.0	0.003
	Female	78.41		
Interacting with the mobile food application does not require a much mental effort.	Male	90.44	2999.0	0.125
	Female	78.94		
I find the mobile food application to be easy to use.	Male	87.50	3308.0	0.595
	Female	83.62		
My interaction with mobile food application is clear and understandable.	Male	92.39	2794.0	0.002
	Female	75.83		
I find it easy to get the mobile food application to do what I want it to do.	Male	85.11	3372.0	0.744
	Female	87.41		
Using mobile food application is very convenient.	Male	80.39	2876.0	0.049
	Female	94.92		
Mobile food application is significant money savings.	Male	79.28	2759.0	0.002
	Female	96.70		
Using the mobile food application can fit my needs.	Male	82.31	3078.0	0.169
	Female	91.86		
By using mobile food application no misunderstandings and no frustrations can occur.	Male	87.70	3287.0	0.548
	Female	83.30		
Using mobile food application makes a quicker payment.	Male	82.60	3108.0	0.221
	Female	91.41		
Mobile food application makes is safer spending option when I am travelling.	Male	87.06	3354.0	0.706
	Female	84.32		
Mobile food application makes is easier spending option when I am travelling	Male	90.49	3078.0	0.506
	Female	91.42		
Mobile food application reduces risk than carrying cash.	Male	90.49	2994.0	0.112
	Female	78.86		
My decision to use the mobile food application was a wise one.	Male	85.58	3421.0	0.882
	Female	86.67		
I am pleased with the experience of using the mobile food application.	Male	88.47	3206.0	0.381
	Female	82.08		
I am satisfied with the performance of the mobile food application.	Male	82.45	3092.0	0.206
	Female	91.65		

* P-value<0.05= Significant difference

Mann-Whitney U test revealed a statistically significant difference between males and females in terms of four application-satisfaction items. The results showed that male customers had higher expectations towards “technical terms sound like confusing jargon to me” ($m = 90.77$), “my interaction with mobile food application is clear and understandable” ($m = 92.39$). While the results indicated that female customers had higher expectations than male customers towards “I value the ability to initiate the transaction from the comfort of home” ($m = 95.77$); Mobile food application is significant money savings ($m = 96.70$)”.

The variance between age, income, and education in terms of application satisfaction:

The Kruskal-Wallis test was used to test for differences between the age, income, and education groups for customers who ordering food through mobile application (Table 5). For age group, boxplot graphs showed that age group, customers had significant in these items “I feel in control using mobile food application; Mobile food application gives more control over the food that they order for delivery or takeout; I have fun using mobile food application; I hesitate to use mobile food application for fear of making a mistake the customer cannot correct; I feel apprehensive about using mobile food application; Mobile food application is safer spending option when the customer travelling”.

In addition, the results revealed according to income group some items had significance “I feel in control using mobile food application; Mobile food application allows me to initiate a transaction whenever I choose; Mobile food application allows me to initiate a transaction at a convenient time; I have fun using mobile food application; I feel apprehensive about

using mobile food application; Interacting with the mobile food application does not require a much mental effort; I find it easy to get the mobile food application to do what I want it to do;

My decision to use the mobile food application was a wise one; I am satisfied with the performance of the mobile food application”.

Moreover, the results indicated significant impact with some items in education group as follow “I feel in control using mobile food application; Mobile food application let me in charge; While using mobile food application, I feel decisive; Mobile food application allows me to initiate a transaction whenever I choose; Mobile food application allows me to initiate a transaction at a convenient time; I like the ability to order food at any place; I have fun using mobile food application; I have avoided mobile food application because it is unfamiliar to me; Technical terms sound like confusing jargon to me; I find it easy to get the mobile food application to do what I want it to do; Mobile food application makes is easier spending option when I am travelling; My decision to use the mobile food application was a wise one a; I am satisfied with the performance of the mobile food application.

Table (5): The differences between ages, income, and education groups

Measure	Asymp. Sig. (2-tailed)		
	Age	income	education
I feel in control using mobile food application.	0.003*	0.002*	0.017*
Mobile food application let me in charge	0.174	0.529	0.000*
While using mobile food application, I feel decisive	0.109	0.105	0.044*
Mobile food application gives me more control over the food that I order for delivery or takeout.	0.002*	0.305	0.002*
Mobile food application allows me to initiate a transaction whenever I choose.	0.539	0.021*	0.021*
Mobile food application allows me to initiate a transaction at a convenient time.	0.331	0.032*	0.000*
I value the ability to initiate the transaction from the comfort of home	0.152	0.001*	0.845
I like the ability to order food at any place.	0.361	0.979	0.024*
I enjoy using mobile food application.	0.061	0.055	0.166
The actual process of using mobile food application is pleasant.	0.118	0.575	0.654
I have fun using mobile food application.	0.001*	0.046*	0.000*
I hesitate to use mobile food application for fear of making a mistake I cannot correct	0.000*	0.146	0.830
I feel apprehensive about using mobile food application	0.002*	0.037*	0.361
I have avoided mobile food application because it is unfamiliar to me	0.668	0.918	0.016*
Technical terms sound like confusing jargon to me	0.429	0.947	0.000*
Interacting with the mobile food application does not require a much mental effort.	0.409	0.004*	0.768
I find the mobile food application to be easy to use.	0.648	0.300	0.187
My interaction with mobile food application is clear and understandable.	0.236	0.315	0.276
I find it easy to get the mobile food application to do what I want it to do.	0.317	0.001*	0.004*
Using mobile food application is very convenient.	0.410	0.004*	0.297
Mobile food application is significant money savings	0.195	0.061	0.067
Using the mobile food application can fit my needs.	0.236	0.322	0.478
By using mobile food application no misunderstandings and no frustrations can occur.	0.145	0.784	0.156
Using mobile food application makes a quicker payment.	0.072	0.186	0.065
Mobile food application makes is safer spending option when I am travelling.	0.000*	0.055	0.009*
Mobile food application makes is easier spending option when I am travelling.	0.174	0.054	0.002*
Mobile food application reduces risk than carrying cash.	0.134	0.588	0.165
My decision to use the mobile food application was a wise one.	0.306	0.003*	0.001*
I am pleased with the experience of using the mobile food application.	0.070	0.824	0.192
I am satisfied with the performance of the mobile food application.	0.251	0.000*	0.005*

* P-value<0.05= Significant difference

Analysis of Measurement Model

In this study, a confirmatory factor analysis (CFA) was used to test the reliability and validity of the seven constructs (i.e., control, convenience, enjoyment, technology anxiety, perceived ease of use, usefulness, security and payment), as well as the measurement model overall fit. To test the reliability, the CR and Cronbach’s α in this study exceeded the minimum acceptable level of 0.7 demonstrating a good reliability level (Hair et al., 2010). To test the validity, the AVE exceeded the minimum acceptable level of 0.5 representing good convergent validity (see Table 6) (Hair et al., 2010). The AVE of each study construct was larger than the squared correlation for each two constructs, demonstrating good discriminant validity (see Table 7).

Numerous model goodness-of-fit measures suggest a satisfactory model fit. The chi-square (χ^2) value was 196.24 with 68 degrees of freedom, $\chi^2/df = 2.89$, lower than the acceptable value of 3, $p = .003$; goodness-of-fit index (GFI) = 0.93, adjusted goodness-of-fit index (AGFI) = 0.93, normal fit index (NFI) = 0.95, comparative fit index (CFI) = 0.95, relative fit index (RFI) = 0.91, which were all higher than the acceptable level of 0.90; and root mean square error of approximation (RMSEA) = 0.033, lower than the acceptable value of 0.08 (Hair et al., 2010, Arbuckle, 2011).

Finally, the t -values for all the parameter estimates were statistically significant at the 0.1 percent level.

Analysis of the Structural Model

After CFA was utilized, SEM was utilized to test path/structural model for customers’ intentions to patronize mobile food ordering applications. Based on the rules of previous studies (e.g., Hair et al., 2010, Arbuckle, 2011), the final model (Figuar 2) fits the data well. The χ^2 value was 44.20 with 16 degrees of freedom, $\chi^2/df = 2.76$, $p = .001$, GFI= 0.94, AGFI= 0.92, NFI= 0.93, CFI = 0.96, RFI= 0.94, and RMSEA= 0.042. Table 8 and Figure 2 depict the results of the SEM.

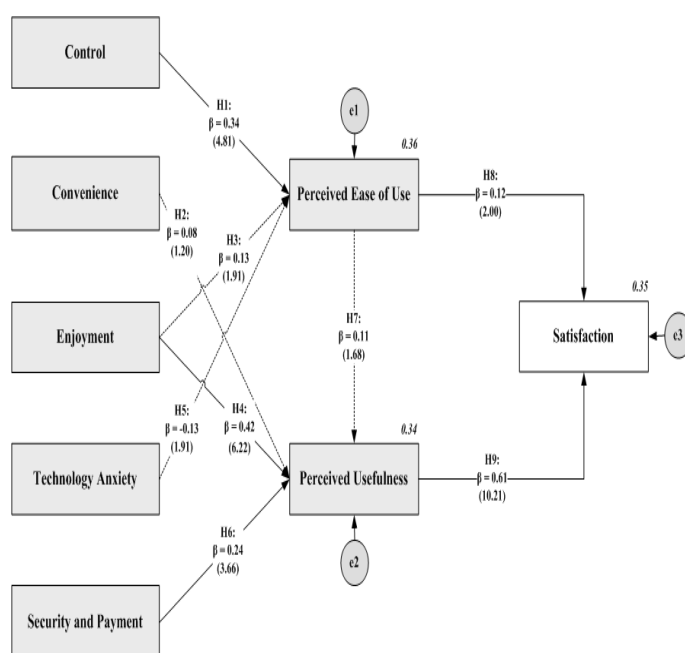


Figure 2: Final structural equation model and standardized estimates

Table (6): Results of confirmatory factor analysis, validity analysis, and reliability test

Construct	Factor loading	t-value	Standardized path coefficient	Composite reliability	Cronbach's α	AVE
Control(CL)				0.77	0.76	0.53
CL1	1.00		0.75			
CL2	0.72	12.39	0.69			
CL3	0.76	14.66	0.72			
CL4	0.79	14.83	0.74			
Convenience(CE)				0.80	0.80	0.51
CE1	1.00		0.69			
CE2	0.76	15.24	0.76			
CE3	0.81	10.03	0.66			
CE4	0.73	13.87	0.73			
Enjoyment(E)				0.87	0.86	0.69
E1	1.00		0.84			
E2	0.78	16.21	0.78			
E3	0.87	23.50	0.87			
Technology anxiety(TA)				0.80	0.78	0.51
TA1	1.00		0.68			
TA2	0.74	5.33	0.74			
TA3	0.74	6.77	0.72			
TA4	0.80	7.04	0.70			
Security and payment(SP)				0.83	0.82	0.62
SP1	1.00		0.84			
SP2	0.88	7.20	0.78			
SP3	0.83	6.83	0.73			
Perceived ease of use (PEU)				0.83	0.82	0.55
PEU1	1.00		0.75			
PEU2	0.79	5.36	0.70			
PEU3	0.89	5.99	0.79			
PEU4	0.82	5.93	0.72			
Usefulness(U)				0.84	0.84	0.57
U1	1.00		0.80			
U2	0.74	14.44	0.74			
U3	0.79	16.81	0.79			
U4	0.69	12.51	0.69			
Satisfaction(S)				0.88	0.87	0.70
S1	1.00		0.88			
S2	0.87	16.98	0.79			
S3	1.01	20.11	0.84			

Notes: AVE: average variance extracted, CL: Control, CE: Convenience, E: Enjoyment, TA: Technology anxiety, SP: Security and Payment, PEU: Perceived ease of use, U: Usefulness, S: Satisfaction.

Table (7): Discriminant validity for the measurement model

Construct	Variance							
	1	2	3	4	5	6	7	8
1. Control	0.53	0.25	0.11	0.08	0.08	0.08	0.12	0.04
2. Convenience	0.23	0.51	0.40	0.01	0.04	0.26	0.08	0.01
3. Enjoyment	0.11	0.01	0.69	0.01	0.01	0.09	0.01	0.13
4. Technology anxiety	0.08	0.01	0.01	0.51	0.02	0.09	0.01	0.01
5. Security and payment	0.09	0.15	0.19	0.02	0.62	0.01	0.01	0.08
6. Perceived ease of use	0.08	0.08	0.01	0.02	0.01	0.55	0.01	0.01
7. Usefulness	0.09	0.01	0.39	0.05	0.05	0.02	0.57	0.11
8. Satisfaction	0.04	0.01	0.15	0.03	0.08	0.01	0.01	0.70

Notes: The bold values along the diagonal line are the AVE values for the constructs, and the other values are the squared correlations for each pair of constructs.

Table (8): Parameter estimates of the structural model

Hypotheses	Path	Factor loading	t-value	Standardized path coefficient (β)	Results
H1	CL → PEU	0.29	4.81**	0.34	Supported
H2	E → PEU	0.11	1.91	0.13	Not supported
H3	TA → PEU	0.37	1.91	0.13	Not supported
H4	CE → U	0.10	1.20	0.08	Not supported
H5	E → U	0.10	6.22**	0.42	Supported
H6	SP → U	0.23	3.66**	0.24	Supported
H7	PEU → U	0.13	1.68	0.11	Not supported
H8	U → SAT	0.69	10.21**	0.61	Supported

Notes:* t-value > 1.96, p < 0.05; **t-value > 3.29, p < 0.001.

Results of Hypotheses Testing

The standardized path coefficients (β) and t-values, presented in Table (8) and Figure (2), were utilized to test the study hypotheses. Control and ease of use factors had significant effects on customers' perception (β = 0.34, p < 0.001), and ease of use and usefulness factors to use the application (β = 0.42, p < 0.001), security and payment with usefulness supporting (β = 0.24, p < 0.001) Hypotheses 5 and 6, respectively. However enjoyment with perceived ease of use factors (β = 0.13, p > 0.05) technology anxiety with perceived ease of use factors (β = 0.13, p > 0.05); convenience with usefulness factors (β = 0.08, p > 0.05); perceived ease of use with usefulness (β = 0.11, p > 0.05) had

insignificant effects on customers' perception of using mobile food applications, rejecting Hypotheses 2, 3, 4 and 7. Usefulness with satisfaction factors; perceived ease of use with satisfaction factors (β = 0.61, p < 0.001), (β = 0.12, p < 0.001), respectively had significant effect on customers intentions to use food ordering applications, supporting Hypothesis 8 and 9.

Discussion and implications

Customer perception towards mobile applications perception is jointly determined by eight factors, which include: control, convenience, enjoyment, technology anxiety, and perceived ease of use, usefulness, security and payment concerning satisfaction. In one hand, the findings of this study revealed some

criteria concerned with control factor that can improve customer's satisfaction toward using the application when ordering food.

These criteria included "Feel control; Let customers in charge; Giving more control over the food that they order for delivery or takeout". In other hand, The study indicated that convenience construct especially in "Initiate the transaction whenever customer choose; Initiate the transaction at a convenient time; The ability initiate the transaction from the comfort of home; The ability to order food at any place were the most acute criteria when ordering food by mobile application" considered as an important items for customers when using the application. These findings are consistent with Algharabat et al. (2017) and Carlson et al. (2019) which showed that perceived control and convenience are keys to customer's use of online and electronic applications for consumer. Therefore, this study suggests that mobile application should help customers for verifying and tracking food orders via tracking icon. Moreover, the application should contain the exact time that the order will deliver to customers.

Furthermore, the study mentioned some significant towards enjoyment construct "the actual process of using mobile food application is pleasant; and customers have fun when using mobile food application". This is consistent with a previous study of Yeo et al. (2017) which proved that pleasant and comfortable electronic/web page is the key to attract and maintain customer's electronic buying experience which eventually increases purchase possibility and customer degree of trust. Therefore, the study suggests food application should allow customers to add any remark, extra service or recommendations regarding their orders. Moreover, the application shall allow

customers to avoid the order that mistakenly placed or exceptional case occurs.

In regards to technology anxiety the study indicated some items had significant effects on customer's perception like "Customers hesitation from using food applications; Customers feel apprehensive about using mobile food application; Technical terms sound make a confusing". These findings are consistent with and Saadé and Kira (2009) and Doub et al. (2015) when indicated that understanding the characteristics and preferences of customers for enabling them using a mobile food application is very important that seek to reach them through digital marketing and mobile application.

Further, the results indicated that there are some items had significant effects concern ease of use factor "Interacting with the mobile food application does not require a much mental effort; My interaction with mobile food application is clear and understandable". Consistent with Doub et al. (2015) and Okumus et al. (2018). Which confirmed the more application difficult, the less use it finally leads to customer dissatisfaction. Therefore, this study suggests the application should provide simple steps enabling customers to place their orders in an easy way. Concerning usefulness factor the study identified some considerations may affect the application usefulness for customers in regards "using the mobile food application can fit their needs; by using the mobile food application no misunderstanding and no frustrations can occur". These findings are similar to the study of Dixon et al. (2009) and Alalwan (2020) where a picture is shown to influence consumer purchasing decision instead of given only the blank written description. Hence, to maximize the degree of satisfaction when using the application should clarify information with reasonable

explanation should be given also, Offer some offers or discounts by coupons or code to encourage customer usage. In addition, virtual food presentation is also necessary.

Security and payment factor proved in this study that had a significant effect on application usage. Customers mostly agreed that “mobile food application makes is safer and easier spending option when customer travel; mobile food application reduces risk than carrying cash” is the most important items enable customers intend to use mobile food application. However, some other customers were less accepted with the item of “using mobile food application makes quicker payment”. These findings differ from the findings by Chimote & Dhole (2017) which found that there was no significant relationship between security/privacy and application satisfaction. The study suggests that restaurants should ensure that mobile food application had convenient payment procedures by providing different choices this will help restaurants making customers more satisfied subsequently will make repeat purchase and recommendations to others.

Regarding customers' profile frequency varies by age, gender, income and education. First, Younger customers particularly those between 25 and 34 years of age are more likely to use food application. Younger consumers place a great value on convenience and control than older users do. The older customers indicated that they have a higher need for human interactions. Therefore, the study suggests that restaurants should encourage them to use applications by providing call center that provides human interaction for more help. Second, female are more frequent user than male. Therefore, the study suggests restaurants should increase their efforts on male to encourage them using food application especially emphasize on control

and convenience factors. Third, according to level of educations the results showed that as customer's income decreased, customer had higher perception of mobile food application for getting offers, discount, free meals, coupons,...etc. These findings are consistent with the findings of several previous research studies Kimes & Laque (2011) and Duggan et al. (2015). Fourth, this study found that the higher educated customer the higher using the mobile food application.

Limitation and future research

This study comprises several limitations, first, this study employed only self-reported questionnaire. Further study could do more interviews and focus groups through research utilizing a wider range of customers using mobile application in ordering food from restaurants. Second, the current study investigated the influence of 31 independent variables on one dependent variable, i.e., customer's perception. Moderator variables should be simultaneously added into the theoretical framework of future research to improve the validity of the study. Third, one of the methodological limitations in this study was the use of self-reported questionnaires. Future studies using qualitative methods should give a broader understanding of factors influencing internship satisfaction. Finally, Future research may attempt to extend this study to all local and international restaurants to obtain a generalized view of the situation of customer's perception in other countries.

References

- Aksenova, O. (2017). *Restaurant apps: Top 8 features*. Available from: <https://www.azoft.com/blog/restaurant-apps-top-features/> . (Accessed 19 December 2018).
- Alalwan, A. (2020), ‘Mobile food ordering apps: An empirical study of the factors affecting customer e-satisfaction and continued intention to reuse’ *International Journal of Information Management*,

- 50, pp. 28–42.
- Algharabat, R., Alalwan, A., Rana, N., & Dwivedi, Y. (2017), ‘Three dimensional product presentation quality antecedents and their consequences for online retailers: The moderating role of virtual product experience’, *Journal of Retailing and Consumer Services*, 36, pp. 203–217.
 - Amoroso, D., & Lim, R. (2017), ‘The mediating effects of habit on continuance intention’, *International Journal of Information Management*, 37(6), pp.693–702.
 - Appfigures (2016) App Stores Start to Mature - 2016 Year in review. Retrieved from <http://blog.appfigures.com> (accessed 15 April 2020).
 - Arbuckle, J. (2011), *IMB SPSS AMOS 20 User’s Guide*. AMOS Development Corporation, Mount Pleasant, SC.
 - Baabdullah, A., Alalwan, A., Rana, N., Kizgin, H., & Patil, P. (2019), ‘Consumer use of mobile banking (M-Banking) in Saudi Arabia: Towards an integrated model’, *International Journal of Information Management*, 44, pp.38–52.
 - BCG (2017). The new digital reality for restaurants. Available from: <https://www.bcg.com/publications/2017/technology-value-creation-strategy-new-digital-reality-restaurants.aspx>. Accessed 3-1- 2019.
 - Bruner, G. and Kumar, A. (2005), ‘Applying T.A.M. to consumer usage of hand held internet devices’, *Journal of Business Research*, 58 (5), pp. 553-558.
 - Carlson, J., Rahman, M., Taylor, A., & Voola, R. (2019), ‘Feel the VIBE: Examining value-in-the-brand-page-experience and its impact on satisfaction and customer en- gagement behaviours in mobile social media’, *Journal of Retailing and Consumer Services*, 46, pp. 149–162.
 - Chan, F., Thong, J., Venkatesh, V., Brown, S., Hu, P., & Tam, K. (2010), ‘Modeling citizen satisfaction with mandatory adoption of an e-government technology’, *Journal of the Association for Information Systems*, 11(10), pp.519–549.
 -
 - Chimote, V. & Dhole, S. (2017), ‘Review Paper on Food Ordering and Payment System using GPS and Android’, *International Journal of Engineering Science and Computing*, 7(4), pp. 10397–10399
 - Cho, M., Bonn, M., & Li, J (2019), ‘Differences in perceptions about food delivery apps between single-person and multi-person households’. *International Journal of Hospitality Management*, 77, pp. 108–116.
 - Colwell, S., Aung, M., Kanetkar, V., and Holdern A. (2008), ‘Toward a measure of service convenience: multiple- item Scale Development and Empirical test’, *Journal of Service Marketing*. 22 (2) pp.160–169.
 - D’Abate, C., Mark. A., and Kathryn, E. (2017). Makings the Most of an Internship: An Empirical Study of Internship Satisfaction. *Academy of Management Learning&Education*, 8(4), pp. 525–532.
 - Davis, F., Bagozzi, R., and Warshaw, P. (1993). ‘User acceptance of computer technology: A comparison of two theoretical models’, *Management Science*, 35(8) pp. 982–1003.
 - Doub, A., Levin, A., Heath, C., and LeVangie, K., (2015), ‘Mobile app-etite: Consumer attitudes towards and use of mobile technology in the context of eating behavior’ Macmillan publishers Ltd. *Journal of Direct, Data and Digital Marketing Practice*. 17 (2) PP 114–129.
 - Duggan, M., Ellison, N., Lampe, C., Lenhart, A., and Madden, M. (2015). Social media update, Pew Research Center’s Internet and American Life Project, <http://www.pewinternet.org/2015/01/09/social-media-update-2014/>, accessed 12 January 2015.
 - Elangovan, N. & Agarwal, P. (2015) “Factors Influencing User Perception on Mobile Social Networking Apps,” *Sumedha Journal of Management*, vol. 4, (2), pp. 27–45.
 - Fishbein, M. & Ajzen, I. (1975), *Belief, Attitude, Intention, and Behavior: an Introduction to Theory and Research*, Addison-Wesley, MA.
 - Flavián, C., Guinalú, M., & Gurrea, R. (2006), ‘The role played by perceived usability, satisfaction and consumer trust on website loyalty’, *Information & Management*, 43(1), pp.1–14.
 - Garland, K., & Noyes, J. (2004). Computer experience: A poor predictor of computer attitudes. *Computers in Human Behavior*, 20(6), 823–840.
 - Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate Data Analysis*. 7th ed., Prentice-Hall, Inc, Upper Saddle River, NJ, USA.
 - Ismagilova, E., Hughes, L., Dwivedi, Y., & Raman, K. (2019), ‘Smart cities: Advances in research – An information systems perspective’, *International Journal of Information Management*, 47, pp.88–100.
 - Kedah, Z., Ismail, Y. (2015), ‘Key Success Factors of Online Food Ordering Services: An Empirical Study’, *Malaysian Management Review*. 50(2), PP.

- 21–31.
- Khairunnisam, K., Ayob J., Wahab, M., Ayob, M., Ayob, M., Ayob, M. (2009). The Application of Wireless Food Ordering System. *MASAUM Journal of Computing*, 1(2)
 - Kimes, S. E. (2011), ‘Customer perceptions of electronic food ordering’. *Cornell Hospitality Report*, 11(10), pp.6–15.
 - Kimes, S., & Laque, P. (2011), ‘Online, mobile, and text food ordering in the U.S. restaurant industry’, *Cornell Hospitality Report*, 11(7), pp.6–15.
 - Kotler, P. (2000), *Marketing Management: Analysis, Planning, Implementation, and Control*, (10th edition), Upper Saddle River, Prentice Hall, NJ.
 - Lee, M., Cheung, C., and Chen, Z. (2005)’, ‘Acceptance of Internet-based learning medium: The role of extrinsic and intrinsic motivation’, *Information & Management*, 42, pp. 1095–1104. doi:10.1016/j.im.
 - Lu, C., Wu, L., & Hsiao, W. (2019), ‘Developing customer product loyalty through mobile advertising: Affective and cognitive perspectives’, *International Journal of Management*, 31(2), pp.126–142
 - Malaquias, R., & Hwang, Y. (2019), ‘Mobile banking use: A comparative study with Brazilian and US participants’, *International Journal of Information Management*, 44, pp. 132–140.
 - Malik, A. Suresh , S., & Sharma .S., (2017), ‘Factors influencing consumers’ attitude towards adoption and continuous use of mobile applications: a conceptual model’, *Procedia Computer Science* 122 ,pp. 106–113
 - Marriott, H., Williams, M., & Dwivedi, Y. (2017), ‘What do we know about consumer m-shopping behaviour?’, *International Journal of Retail and Distribution Management*, 45(6), pp.568–586.
 - MCIT (2020), *ICT Indicators in Brief –monthly issue (January 2020)* ministry of communications and Information Technology available on www.mcit.gov.eg
 - Meuter, M., Bitner, M., Ostrom, A., and Brown, S., (2005), ‘Choosing Among Alternative Service Delivery Modes: An Investigation of Customer Trial of Self-Service Technologies’. *Journal of Marketing*. 69, pp. 61 – 83.
 - Mukherjee, A., & Nath, P. (2007), ‘Role of electronic trust in online retailing: A re-examination of the commitment- trust theory’, *European Journal of Marketing*, 41(9/10), pp.1173-1202.
 - Ngai, E., Poon, J., & Chan, Y. (2007), ‘Empirical examination of the adoption of WebCT using TAM’, *Computers & Education*, 48(2), pp. 250–267.
 - Nilashi, M., Ibrahim, O., Mirabi, V., Ebrahimi, L., & Zare, M. (2015), ‘The role of security, design and content factors on customer trust in mobile commerce’, *Journal of Retailing and Consumer Services*, 26, pp.57–69.
 - North, A., & Noyes, J., (2002), ‘Gender influences on children’s computer attitudes and cognitions’ *Computers in Human Behavior*, 18(2), pp.135-150.
 - NRA, (2014). *What’s Hot 2015 Culinary Forecast*, <http://www.restaurant.org/News-Research/Research/What-s-Hot>, (accessed 12 January 2015).
 - 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, pp.67–77.
 - Otlob (2020) Official webpage of Otlob, Available on: <https://www.Otlob.com/egypt/> (Accessed 24 March 2019).
 - Pigatto, G., Machado, J., Negreti, A., & Machado, L. (2017), ‘Have you chosen your request? Analysis of online food delivery companies in Brazil’, *British Food Journal*, 119(3), pp. 639–657.
 - Poon, W. (2007), ‘Users’ adoption of e-banking services: the Malaysian perspective’, *Journal of Business & Industrial Marketing*, 23(1), pp.59-69.
 - Saadé, R. and Kira, D. (2009). A computer anxiety in e-learning: The effect of computer self-efficacy. *Journal of Information Technology Education*, 8, 177–191.
 - Sahoo, S. & Sonawane, K. (2017), *Food Delivery Mobile Application Market By Deployment Platform (Android, iOS, Others), and End User (Food Delivery Market Place, Restaurants and Others): Global Opportunity Analysis and Industry Forecast, 2017-2023*. Retrieved from: <https://www.alliedmarketresearch.com/food-delivery-mobile-application-market> (accessed on 20 November 2018).
 - Sharma, S., & Sharma, M. (2019), ‘Examining the role of trust and quality dimensions in the actual usage of mobile banking services: An empirical investigation’, *International Journal of Information Management*, 44, pp. 65–75.
 - Shaw, N., & Sergueeva, K. (2019), ‘The non-monetary benefits of mobile commerce: Extending UTAUT2 with perceived value’, *International*

- Journal of Information Management*, 45, pp.44–55.
- Statista (2018). Mobile app usage – Statistics & facts. Available from: <https://www.statista.com/topics/1002/mobile-app-usage/> (Accessed 15 December 2018).
 - Tamilmani, K., Rana, N., Prakasam, N., & Dwivedi, Y (2019), ‘The battle of brain vs. heart: A literature review and meta-analysis of “hedonic motivation” use in UTAUT2’, *International Journal of Information Management*, 46, pp.222–235.
 - Wang, Y., Tseng, T., Wang, W., Shih, Y. W., & Chan, P. (2019), ‘Developing and validating a mobile catering app success model’, *International Journal of Hospitality Management*, 7, pp. 19–30.
 - Wu, Y & Wang, S. (2005), ‘What drives mobile commerce? An empirical evaluation of the revised technology acceptance model’, *Information & Management*, 42 (5), pp. 719–729.
 - Yang, Y., Asaad, Y., & Dwivedi, Y. (2017), ‘Examining the impact of gamification on intention of engagement and brand attitude in the marketing context’, *Computers in Human Behavior*, 73, pp.459–469.
 - Yeo, V., Goh, S., & Rezaei, S. (2017), ‘Consumer experiences, attitude and behavioral intention toward online food delivery (OFD) services’. *Journal of Retailing and Consumer Services*, 35, 150–162.