

Consumer Behaviour Towards Mobile Marketing in UAE Restaurants: Application of Technology Acceptance Model

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Abstract. The objective of this article is to analyze the antecedents of the technological acceptance of marketing on mobile devices in the United Arab Emirates restaurant industry, making use of the Technology Acceptance Model (TAM). This study extends the TAM model by adding another important element of consumer behaviour within the context of restaurant industry to explain the intention to use marketing on mobile devices, which provides information on consumer behaviour in the country. This research has the target audience of UAE restaurant industry consumers to collect relevant data. The data has been collected from 300 diners across the different restaurants of UAE by using convenience sampling technique. It has been found that perceived ease of use of mobile marketing and perceived utility of mobile marketing are significant predictors of intention to use mobile marketing. In addition, this study concludes that there is positive attitude towards mobile marketing among restaurant customers in the UAE. Last but not the least, the present study accomplishes that confidence or trust is also a significant predictor of intention to use mobile marketing. Furthermore, the high level of internal consistency in the questionnaire items indicates that it can be used by the marketers to study the consumer behaviour in the UAE.

Keywords. Technology Acceptance Model (TAM), consumer behaviour, UAE Restaurant Industry, perceived ease of use, Mobile Marketing

1. Introduction

Traditional media are the most widely used to convey marketing to consumers. However, the dynamics of information and communication technologies (ICT), as proposed by [1] allowing new ways of marketing through the Internet, electronic and mobile devices that offer advantages in immediate communication and direct with the user, representing a

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huge challenge for advertisers, since consumers have more control over the marketing relationship than they have had with traditional media.

For this reason, new communication strategies use mobile marketing as a form of electronic communication that, through marketing messages, allows direct interaction with consumers, seeks a direct response from them and, in addition, becomes a form of marketing that promotes the sale and provision of information about products or services [2]. It also adds value by sending marketing messages that can be contextualized with the local consumers and meeting the needs of the modern era and the consumers as they are now using devices instead of newspaper and other traditional marketing media [3].

In UAE, according to the UAE's Telecommunication Regulatory Authority, there has been a significant increase in the telecommunications subscribers which include mobile as well as fixed-line and data services and reached 23.64 million in 2019. Over 3.016 m users are subscribers to internet. [4]. The mobile phone penetration is leading mode of communication and it accounts for 77% of the revenues of main operators in the UAE, i.e. Etisalat Group and Emirates Integrated Telecommunications Company [5].

To complement the academic literature in the UAE, which is limited on the subject, it is interesting to know what the technological acceptance of marketing through mobile devices is available. To be more specific this study conducts a case study of mobile marketing by the restaurants in the UAE.

The objective of this article is to analyse the antecedents of the technological acceptance of marketing on mobile devices in the UAE restaurant industry, making use of the Technology Acceptance Model (TAM) proposed by [6]. In fact this study extends the TAM model by adding another important element of consumer behaviour within the context of restaurant industry to explain the intention to use marketing on mobile devices, which provides information on consumer behaviour in the country. The primary goal of this research is to understand the attitude of UAE restaurant consumers towards mobile marketing and to what extent the confidence and trust in the restaurant can affect the consumer buying behaviour. Furthermore, the study aims to investigate the impact of perceived ease of use of mobile marketing by the restaurant customers on the intention to use mobile technologies. This study further analysed that if Trust on the restaurant positively influences the intention to use marketing on mobile devices

2. Literature Review

The technology acceptance model (TAM) which has been presented by [7], is an adaptation to the TRA (theory of reasoned action) model explained by [8], to predict and identify the behaviours of users in front of technologies, facilitate their understanding and generate possible actions. It also takes into account affective and cognitive determinants and considers the internal and external factors such as beliefs, attitudes and intentions, which interact with the systems and define the future behaviour of users. There are two main variables in the TAM mode. The first is the perceived usefulness and the second is the perceived ease of use[9]. These are the antecedents of the consumers and shape their attitude and the intention to use. Perceived usefulness can be defined as the extent to which a consumers believe that using the said system would improve their experience such as for shopping or making purchase decision [10]. In this model the intention is the primary determinant for the adoption of the technology. Intention is affected by the attitude of consumers which is shaped by the positive effects of

technology on personal perceptions and experiences as compared to the ease of use and perceived usefulness [11].

According to [12], the business landscape has taken a swift shift and has created provocation among food businesses to draw focus on investing in mobile marketing and devise marketing campaigns and strategies involving the customers using smartphones. In the words of [13] The technology acceptance model (TAM), which is based on the theory of reasoned action is not only useful in mobile marketing but also there are several other industries where the said TAM model is accepted and quite helpful. One of the study showed that e-commerce based web portal have also used the TAM, where a noteworthy research study has utilized TAM to forecast the user's acceptance of information technology in order to observe the behavior of customers on the World Wide Web[14]. It involves two constructs that model the adoption of IT. Several researchers including [15], have found that the understanding of the student's plan to use LMS is easy to use, useful, fun, and behavioral.

The TAM is based on the variables intention to use and attitude, which are treated in the TRA as determinant of the consumer behaviour and this theory is based on social psychology[16] and therefore TAM is oriented to determine the intention to use the technology [17]. [18]proposes TAM2 as an extension to the traditional one, in which different antecedents that influence perceived utility are concentrated, such as the subjective norm from TRA, experience, will, the image, the relevance of the work, the quality of the technology result, and the ability to demonstrate.

The critical review of the literature depicts consistency with the previous model of Venkatesh and Bala [19] in relation with the addition of antecedents of perceived utility and perceived ease to connect and examine the relationships with the consumers' intention and behaviour. The extended model of TAM in relation with TRA theory exhibits consonance between the perceived utility and perceived ease of diet food apps by research participants in UAE[20]. The present study is distinguished in exploring the positive relationships between confidence and intention to use for denoting the vibrant influence on consumer behaviour of UAE residents in adapting to the use of smartphone diet food apps for placing orders online due to high degree of user friendly innovativeness and eminent social influence. In essence, TAM model shares relevance with the Unified Theory of Acceptance and Use of Technology (UTAUT) in exploring the addition of respective factors in extending the TAM model for food businesses to orient the optimization of mobile marketing strategies [21, 22]. Figure 1 graphically represents the relationship between the variables of the TAM model as indicated.

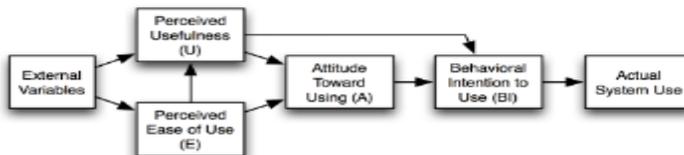


Figure 1: TAM model

Source: [23]

Trust is a binding force in transactions between buyers and sellers, mainly in e-commerce and mobile. Two situations arise in this type of transaction. The first is related to the perception of risk presented by one of the parties, and the second related to the asymmetry of information. For this reason, the perception of trust arises in the literature for the specific case of mobile marketing [24, 25] and is included in the research to

develop a model based on the TAM. Trust is defined as the conviction that consumers have that the expectations they have about the behaviour of the other party will be favourable. Within the context of restaurants the trust is the degree or confidence that diners have in the restaurants to meet their expectations [26, 27]. For the corresponding analysis and the validation of the referenced hypotheses, the model in figure 2 is proposed. It will be used to proceed to verify, through the empirical evidence collected in this study, using regression and correlation techniques.

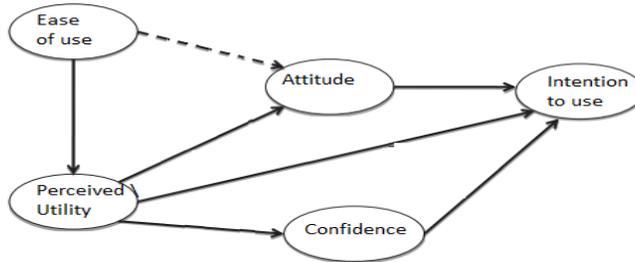


Figure 2. Proposed model for validation of variables

In the proposed model, the confidence variable has been included to extend the technological acceptance model (TAM) and the previous theories of the intention to use marketing on mobile devices that influence consumers of the restaurant industry in the UAE. The hypotheses worked according to the TAM model are proposed below:

H1: Perceived ease of use of mobile marketing has positive relationship with intention to use

H2: Perceived utility of mobile marketing has positive relationship with intention to use

H3: UAE restaurant consumers has positive attitude towards mobile marketing.

H4: Confidence or trust in the restaurant is a significant predictor of consumer behaviour

H5: Perceived utility has a positive impact on influencing trust of the restaurant customers.

H6: Trust on the restaurant positively influences the intention to use marketing on mobile devices.

3. Research Methodology

The present investigation is exploratory and descriptive, and was approached in two stages. In the first stage, a bibliographic search was carried out in order to determine a state of the art and antecedents of similar studies of problem. The secondary research was used to explain underlying theories and TAM model and its extensions in previous studies. In the second stage, with a simple cross-section design, the researcher sought to explain the phenomenon under study by conducting a survey questionnaire as data collection instruments and convenience sampling to recruit 300 consumers in the different restaurants of UAE. Second stage of the study involves researcher's intention of conducting a primary research by using quantitative research approach. The data collection instrument for the study chosen was a questionnaire for conducting a survey.

Questionnaire and convenience sampling are commonly used primary data collection processes in past studies as per [28]. In order to operationalise the variables, the researcher has designed the questionnaire using Likert five point scale. Furthermore, in the study, correlation and regression has been used to analyse the questionnaire data. The use of convenience sampling led the initial primary data collection process and to fasten the data collection process, questionnaire was shared online via email and social media platforms which culminated in gathering 300 responses from the consumers.

4. Data Analysis

This section provides the results of analysis conducted in questionnaire data. The descriptive analysis shows that there were 300 participants in the study among which 55% were male and 45% were female. In addition, this study reports that there were 25.7% under graduate, 24% graduates, 26% postgraduates, and 24.3% PhDs. With respect to monthly spending, the research found that 28.7% of the participants spend less than 1000 AED per month, 25.3% of the participants spend 1001-2000 AED per month, 26.7% spend 2001-3000 AED per month, and 19.3% participants spend 3001-4000 AED per month.

The correlation technique is the most commonly used technique to analyse the relationship between two variables. It shows the relationship by explaining the nature and power of change that may occur in given variable due to change in other variable(s). The below table provides correlation coefficients between independent variables identified in the TAM model and consumer behaviour which is reflected by intention to use.

Table 1-Correlation analysis

		Perceived ease of use	Perceived utility	Attitude towards receiving marketing through mobile device
Perceived ease of use	Pearson Correlation	1	.908**	.920**
	Sig. (2- tailed)		.000	.000
	N	300	300	300
Perceived utility	Pearson Correlation	.908**	1	.926**
	Sig. (2- tailed)	.000		.000
	N	300	300	300
Attitude towards receiving marketing through mobile device	Pearson Correlation	.920**	.926**	1
	Sig. (2- tailed)	.000	.000	
	N	300	300	300
Perceived Trust	Pearson Correlation	.892**	.910**	.895**
	Sig. (2- tailed)	.000	.000	.000
	N	300	300	300
Intent to use Mobile marketing	Pearson Correlation	.889**	.907**	.895**
	Sig. (2- tailed)	.000	.000	.000
	N	300	300	300

The coefficient of correlation between perceived ease of use and intention to use mobile marketing is ($r=.889>0.5$, $p=.000<0.05$) which shows that there is strong positive correlation between perceived ease of use and intention to use mobile marketing. In other words, if there is an increase in the perceived ease of use there will also be an increase in intention to use mobile marketing. Similarly, the coefficient of correlation between

perceived utility and intention to use mobile marketing is ($r=.907>0.5$, $p=.000<0.05$) which shows that there is strong positive correlation. The intention to use mobile marketing also shows strong positive correlation with attitude towards receiving marketing through mobile device ($r=.920>0.5$, $p=.000<0.05$) and perceived trust/confidence ($r=.892>0.5$, $p=.000<0.05$). Overall it is observed that these variables are strong determinants of intent to use mobile marketing among restaurant customers in the UAE. It is important to note that the results shown above are consistent with past studies. [29] reported that confidence or trust shows strong positive correlation with intention to use with a coefficient of 0.712. Therefore the results obtained in this study show consistency with past studies using TAM model to explain the impact of technology on consumer behaviour.

The regression model provides insights about individual and overall impact of independent variables on dependent variable using coefficient of determination and beta coefficients. The regression analysis of this research about determining the impact of Technology Acceptance Model among the customers of UAE different restaurants yield the R square value 0.863 listed in the model summary.

The coefficient of determination in the model presented below is R-squared = 0.869 from which this study infers that the variables in extended TAM model explain 86.9% of change in the intention to use mobile marketing for restaurant customers in the UAE.

In addition the ANOVA in Table2 reinforces the correlation results and indicate that the model is statistically significant. The beta coefficient of perceived ease of use is 0.192 which predicts that if perceived ease of improves by one unit, the intention to use mobile marketing among restaurant customers in the UAE will increase by 0.192 units, while all other factors remain the same. The beta coefficients of perceived utility, attitude, and confidence are 0.340, 0.190, and 0.256. The significance values are all below 0.05 which implies that the impact of each of these variables is statistically significant.

Table2- ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	350.830	4	87.708	463.227	.000 ^a
Residual	55.855	295	.189		
Total	406.686	299			

In order to do the reliability analysis of this study, the value of Cronbach's Alpha has been utilized that controls the internal consistency of the variable constructs and the cluster of items in survey. The value Cronbach's alpha obtained through this study is $0.979>0.7$ which indicates that there is very high level of internal consistency in the questionnaire items. In other words, the questionnaire provided in this study can be used reliably by restaurant marketers in the UAE to evaluate the intention to use mobile marketing in their target customers.

Based on the study, the results above confirms that the extended TAM model proposed demonstrate that confidence is a factor that can be used to extend the TAM model and to explain the consumer behavior of restaurant customers in the UAE. Confidence or trust is a significant predictor of consumer behavior. Hence this model can be used by restaurant marketers to elaborate target consumer behavior and adapt their marketing strategies accordingly.

5. Conclusion and Practical Implications

There have been numerous studies attempting to extend the TAM model within the context of different industries and restaurant industry is no exception. These results support the inference provided in previous section as these show that different factors can be added to the TAM model following the Unified Theory of Acceptance and Use of Technology (UTAUT) and apply them within the context of online food ordering consumer behaviour. Hence it can be implied that extension of TAM model to better explain the consumer behaviour of restaurant consumers in the UAE with respect to innovation in marketing, i.e. mobile phone marketing is a practical phenomenon worth studying. In the context of marketing for food and beverage industry, this study brings light to the changes in the application of marketing mix in the restaurant industry. It implies that traditional marketing mix followed by the businesses is influencing the formation of positioning and promotional market strategies. Food businesses are demanded to draw focus more on the customer base present online due to the growing accessibility and ease of using smartphones at any point of place and time. The restaurant businesses in UAE exhibit dominant presence on social media platforms and are optimizing mobile marketing to target customers.

References

- [1] Al-Marouf, R. S., Salloum, S. A., AlHamadand, A. Q., and Shaalan, K. 2020. Understanding an Extension Technology Acceptance Model of Google Translation: A Multi-Cultural Study in United Arab Emirates. *International Journal of Interactive Mobile Technologies (IJIM)*, 14(03), 157-178.
- [2] Chhonker, M.S., Verma, D. and Kar, A.K., 2017. Review of technology adoption frameworks in mobile commerce. *Procedia computer science*, 122, pp.888-895.
- [3] Hajarian, M., Camilleri, M.A., Díaz, P. and Aedo, I. (2020), "A taxonomy of online marketing methods", in Camilleri, M.A. (Ed.) *Strategic Corporate Communication in the Digital Age*, Emerald, Bingley.
- [4] Muchran, M. and Ahmar, A.S., 2019. Application of TAM model to the use of information technology. arXiv preprint arXiv:1901.11358.
- [5] Kaur, P., Dhir, A., Chen, S., Malibari, A. and Almotairi, M. (2020), "Why do people purchase virtual goods? A uses and gratification (U&G) theory perspective", *Telematics and Informatics*, Vol. 53, available at: www.sciencedirect.com/science/article/pii/S0736585320300356
- [6] Jahan, S. and Alrajawy, I., 2020. Exploring the relationship between Corporate Social Responsibility (CSR) and Organisational Profitability-A study of the UAE Manufacturing Industry. *International Journal of Psychosocial Rehabilitation*, 24(03). <https://doi.org/10.37200/IJPR/V24I3/PR2021129>
- [7] Chiu, J.L., Bool, N.C. and Chiu, C.L., 2017. Challenges and factors influencing initial trust and behavioral intention to use mobile banking services in the Philippines. *Asia Pacific Journal of Innovation and Entrepreneurship*
- [8] Camilleri, M.A. and Falzon, L., 2020. Understanding motivations to use online streaming services: integrating the technology acceptance model (TAM) and the uses and gratifications theory (UGT). *Spanish Journal of Marketing-ESIC*.
- [9] Dwivedi, Y.K., Shareef, M.A., Simintiras, A.C., Lal, B. and Weerakkody, V., 2016. A generalised adoption model for services: A cross-country comparison of mobile health (m-health). *Government Information Quarterly*, 33(1), pp.174-187.
- [10] Camilleri, M.A. and Falzon, L., 2020. Understanding motivations to use online streaming services: integrating the technology acceptance model (TAM) and the uses and gratifications theory (UGT). *Spanish Journal of Marketing-ESIC*.
- [11] Dwivedi, Y.K., Shareef, M.A., Simintiras, A.C., Lal, B. and Weerakkody, V., 2016. A generalised adoption model for services: A cross-country comparison of mobile health (m-health). *Government Information Quarterly*, 33(1), pp.174-187.
- [12] Eze, S.C., Chinedu-Eze, V.C., Bello, A.O., Inegbedion, H., Nwanji, T. and Asamu, F., 2019. Mobile marketing technology adoption in service SMEs: a multi-perspective framework. *Journal of Science and Technology Policy Management*.

- [13] Klaic, M. and Galea, M.P., 2020. Using the Technology Acceptance Model to Identify Factors That Predict Likelihood to Adopt Tele-Neurorehabilitation. *Frontiers in Neurology*, 11, p.1637.
- [14] Iqbal, Z., Malik, M. and Hassan, M.U., 2019. Understanding the adoption of mobile marketing by small and medium enterprises of Pakistan. *International Journal of Business Forecasting and Marketing Intelligence*, 5(2), pp.125-144.
- [15] Jahan, S. and Martin, P., 2019. Exploring the value of your Website Analytics. *EPRA International Journal of Economic and Business Review*, pp.66-69. //doi.org/10.36713/epra2999
- [16] Wen, H.; Pookulangara, S.; Josiam, B.M. A comprehensive examination of consumers ' intentions to use food delivery apps. *Br. Food J.* 2021.
- [17] Yoon, C. (2018). Extending the TAM for Green IT: A normative perspective. *Computers in Human Behavior*, 83, 129-139. <https://doi.org/10.1016/j.chb.2018.01.032>
- [18] Kamble, S., Gunasekaran, A. and Arha, H., 2019. Understanding the Blockchain technology adoption in supply chains-Indian context. *International Journal of Production Research*, 57(7), pp.2009-2033.
- [19] Kanojia, P. and Lal, M., 2020. Impact of Trust on Customer Adoption of Digital Payment Systems. In *Impact of Mobile Payment Applications and Transfers on Business* (pp. 16-42). IGI Global.
- [20] Kapoor, A.P. and Vij, M., 2018. Technology at the dinner table: Ordering food online through mobile apps. *Journal of Retailing and Consumer Services*, 43, pp.342-351.
- [21] Kiat, Y.C., Samadi, B. and Hakimian, H., 2019. Consumer behavior towards acceptance of mobile marketing. *International Journal of Business and Social Science*, 8(4), pp.92-105.
- [22] Koul, S. and Eydgahi, A., 2018. Utilizing technology acceptance model (TAM) for driverless car technology adoption. *Journal of technology management & innovation*, 13(4), pp.37-46.
- [23] Jahan, S., Alrajawy, I., Abid Ali, S. and Martin, P., 2021. Analysing the impact of Globalisation on business performance: case of UAE food industry. *International Journal for Quality Research*, 15(2), pp.665-678. DOI – 10.24874/IJQR15.02-19
- [24] Lai, P.C., 2020. The literature review of technology adoption models and theories for the novelty technology. *JISTEM-Journal of Information Systems and Technology Management*, 14(1), pp.21-38.
- [25] Lee, L.Y.S., 2019. Hospitality industry web-based self-service technology adoption model: A cross-cultural perspective. *Journal of Hospitality & Tourism Research*, 40(2), pp.162-197.
- [26] O'Grady, V. 2020. UAE mobile penetration hits 200 per cent. developingtelecoms.com/telecom-technology/wireless-networks/9190-uae-mobile-penetration-hits-200-per-cent, 2020.
- [27] Jahan, S., Ali, S. and Hussaini, T., 2021. Impact of Internet Usage on the Academic Performance of Undergraduate Students in Karachi. *Universal Journal of Educational Research*, 9(3), pp.579-585.
- [28] Sakkthivel, A.M. and Ramu, N., 2018. Investigating the gender influence on technology adoption model towards smart phones-evidences from emerging economies. *International Journal of Business Excellence*, 16(1), pp.35-46.
- [29] Okumus, B., Ali, F., Bilgihan, A. and 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.