Chapter 15
Factors Influencing the Adoption of E-Ticketing in Arabic Frontier Markets: Conceptual Extension of UTAUT

Zainah Qasem

Abstract Recent years have witnessed a growing interest of researchers to examine e-commerce (EC) systems and mobile commerce (MC) role in different sectors. e-ticketing—a paperless, electronically recorded to merchant's system, electronic document used for ticketing travellers or event attendants—is one of the most important services in e-commerce.

This conceptual paper aims to investigate, understand, and improve e-ticketing adoption in Arabic frontier markets—Morocco, Tunisia, Bahrain, Jordan, Kuwait, Lebanon, and Oman. To achieve this goal, a revised unified theory of acceptance and use of technology (UTAUT) model was introduced. The introduced model emphasized the significant relationship between theory's main four independent variables—performance expectancy, effort expectancy, social influence, and facilitating conditions—and intention. Trust was incorporated into UTAUT, and nonempirical suggestion of a significant positive relationship between social influence and trust and facilitating conditions and trust were proposed.

Keywords UTAUT · E-Ticketing · Frontier markets · Trust · Social influence

15.1 Introduction

Marketing academic discipline and management activities have seen an apparent revolution during the past two decades. Many academics and practitioners agree that what once considered an effective marketing approach, such as mass communication, and focusing on benefit and utility, has become less effective (Constantinides, 2014). Much of this change is contributed to the evolution of information and communication technologies. Although the market has seen the emergence of different

Z. Qasem (✉)
School of Business, The University of Jordan, Amman, Jordan
e-mail: z.qasem@ju.edu.jo

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influential information and communication technologies, the Internet remains the most prominent among these technologies (Ayeh, Au, & Law, 2016).

The Internet use in business went through different phases of evolution; however, two phases are considered the most influential. First is the phase in which e-commerce systems—systems that facilitate "the process of buying, selling, or exchanging products, services, and information over the internet" (Turban et al., 2006, p. 4)—were introduced. These systems enabled order processing, online payment, and updating information on Web pages (Chan et al., 2001). As a result e-commerce led to the introduction of new and convenient marketing channel, and the exchange of value between producers of different products (goods, services, and ideas) and customers became less complicated and extra comfy (Abdullah & Kadhim, 2016). Following the introduction of e-commerce, the second phase is the integration of mobile computing technologies and mobile applications. This phase enabled universal access to the Internet and mobile e-commerce (Chan et al., 2001).

e-ticketing—a paperless, electronically recorded to merchant's system, electronic document used for ticketing travellers or event attendants (Alfawaer, Awni, & Al-Zoubi, 2011; Qteishat, Alshibly, & Al-ma'aitah, 2014)—is one of the most important applications of e-commerce. Nowadays, providing e-ticketing services is affecting the customer and the business. Modern customers are keen on saving time and effort, and modern businesses are keen on reducing the cost of ticket management (Lu, Chao, & Chen, 2014).

Due to e-ticketing increasing importance, this conceptual paper aims to investigate, understand, and improve e-ticketing adoption, specifically, in frontier collectivist culture markets. To achieve this goal, a revised unified theory of acceptance and use of technology (UTAUT) model is introduced.

This conceptual paper contributes to research in several ways. First, the study shows the important role of UTAUT's constructs in predicting customer intention to adopt new technologies generally and e-ticketing as a new technology specifically. Second, it adds to the literature that supports the need to incorporate trust in UTAUT as a fifth construct to predict adoption of new technology. Third, this study has a nonempirical suggestion to restudy social influence role in UTAUT.

The remainder of the paper is structured as follows. Section 15.2 summarizes the literature related to UTAUT and its constructs relationship. Section 15.3 introduces the research model and hypothesis development. Finally, conclusion and future work are given in Sect. 15.4.

15.1.1 Research Setting

Frontier markets are "smaller, less accessible, yet still investable countries in the developing world" (Berger et al., 2011, p. 227). There are different methods and indexes to classify frontier markets. However, this paper will use Morgan Stanley Capital International (MSCI) index. MSCI method of classification is based on

economic development, size, liquidity, and market accessibility (MSCI, 2018) which matches the elements of Berger et al.'s (2011) definition of frontier markets.

Although still smaller than traditional emerging and developed stock markets, frontier markets are providing important investment opportunities for businesses (De Groot, Pang, & Swinkels, 2012). In spite of the important consideration to frontier markets among the investment community, very little research addresses those markets (Berger et al., 2011). Therefore, this paper will focus on understanding what encourages customers to adopt new technologies in frontier markets in order to provide investors and business owners with an insight into potential business.

According to MSCI, frontier markets are found in the Americas, Europe, the Middle East, and Africa. However, the Middle East and North Africa host seven Arabic frontier markets—Morocco, Tunisia, Bahrain, Jordan, Kuwait, Lebanon, and Oman.

There are two fundamental classifications for cultural differences: individualism and collectivism (Frost, Goode, & Hart, 2010). While individualism displays an independence from social influence, collectivism displays a great importance to group approval (Frost et al., 2010; Hofstede, 2001).

Hofstede's cultural index—a framework for cross-cultural communication—grouped the Arabic countries and provided a single score to the Arabic culture in general (Khanum et al., 2012). According to Hofstede's cultural index, the Arabic group culture is a collectivist culture.

15.2 Literature Review

15.2.1 E-Ticketing

e-ticketing is a form of e-commerce whereby customers reserve a seat at an event or in an airline and all reservations are recorded electronically when the purchase is made on firm's reservation database (Alfawaer et al., 2011; Hoosain et al., 2000; Lee & Wan, 2010; Qteishat et al., 2014).

Known e-ticketing service providers in Arabic frontier markets are very few. For example, in Jordan, there are only two known event registration and e-ticketing solution websites (Karasi.com and Sajilni.com), and also, there are five Jordanian domestic airlines with only three providing e-ticketing services. There is also no information regarding the number of e-ticketing users in Jordan. The previous indicate that e-ticketing is still in its early adoption stages as compared to the USA and Europe.

e-ticketing represents the future of operations for the user and the business itself; it makes customers' lives easier by saving their time and reducing the costs of ticket management for companies (Lu et al., 2014). Therefore, understanding what influences customer decision to adopt e-ticketing is a priority for organizations that benefit from providing services such as event management companies and airlines.

15.2.2 UTAUT and Technology Acceptance Models

e-ticketing is a technological innovation; hence, whether customers will adopt this technology depends on their assessment of the technology (Lee & Wan, 2010).

Previous studies on technology acceptance propose different theories and models that try to explain consumer adoption of different types of systems and technologies (e.g. Alalwan, Dwivedi, & Rana, 2017; Alalwan, Dwivedi, Rana, Lal, & Williams, 2015; Alalwan, Dwivedi, Rana, & Simintiras, 2016; Alalwan, Dwivedi, Rana, & Williams, 2016; Alryalat, Rana, & Dwivedi, 2015; Davis, 1989; Dwivedi et al., 2017; Dwivedi, Rana, Jeyaraj, Clement, & Williams, 2017; Karahanna, Straub, & Chervany, 1999; Mathieson, 1991; Rana & Dwivedi, 2015, 2016; Rana, Dwivedi, Lal, Williams, & Clement, 2017; Rana, Dwivedi, & Williams, 2013; Rana, Dwivedi, Williams, & Weerakkody, 2016; Venkatesh, Morris, Davis, & Davis, 2003; Williams, Rana, & Dwivedi, 2015). However, technology acceptance model (TAM), TAM2, and UTAUT are the most used models to explain customer's adoption of new technology.

TAM was introduced as a model that explains and predicts user acceptance of specific types of technology (Ngai, Poon, & Chan, 2007). TAM, which was based on theory of reasoned action (TRA), theorizes that perceived usefulness and perceived ease of use are the two key beliefs that determine person's intention to adopt a new technology (Davis, 1989). Venkatesh and Davis (2000) combined several external variables (subjective norms, voluntariness, image, job relevance, and output quality) to TAM and introduced TAM2 to accommodate for the continuous development in the technology field.

The success of TAM and TAM2, along with other theories and models in explaining technology acceptance and adoption behaviour, promoted the need to introduce a more holistic model (Qasem, 2014). Venkatesh et al. (2003) presented UTAUT as a holistic theory based on TAM. Variables in eight different models about users' technology acceptance and adoption, including TAM, UTAUT, TRA, motivational model, theory of planned behaviour (TPB), a combined TAM and TPB model, model of PC utilization, diffusion of innovation theory, and social cognition theory, were compared, tested, and integrated into the model. UTAUT consisted of four core variables—performance expectancy, effort expectancy, social influence, and facilitating conditions—and four moderating variables, gender, age, experience, and voluntariness of use (Venkatesh et al., 2003).

In UTAUT performance expectancy is defined as "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al., 2003, p. 447). Effort expectancy is "the degree of ease associated with the use of the system" (Venkatesh et al., 2003, p. 450). Facilitating conditions are defined as "the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system" (Venkatesh et al., 2003, p. 453). Social influence is defined as "the degree to which an individual perceives that important others believe he or she should use the new system" (Venkatesh et al., 2003, p. 453).

UTAUT was described as a robust model, with the ability to describe users' intention to use a new technology up to 70% more than the eight models (Venkatesh et al., 2003, p. 453). Furthermore, model's viability, validity, and stability have been confirmed for technology adoption research studies in several contexts (Alharbi, 2014).

Although the applicability of TAM and UTAUT to predict technology acceptance and adoption was proven in many settings, there is still a general concern about their effectiveness in predicting consumer adoption of technology across different national cultures (Ayeh et al., 2016; Lee, 2016; McCoy et al., 2007). In this regard, substantial research has been conducted to understand the adoption of several online technologies across cultures.

15.2.3 UTAUT and Culture Relationship

Culture is "the collective programming of the mind which distinguishes the members of one group or category of people from others" (Hofstede, 1980, p. 5). Hofstede's index and its cultural dimensions have been the most used approach to define culture, explain the adoption of several technologies across cultures, and justify variation in results (Al-Gahtani, Hubona, & Wang, 2007; Im et al. 2011; Oshlyansky et al., 2007; Tarhini, El-Masri, Ali, & Serrano, 2016).

Straub et al. (1997) stated that cultural differences across countries affect international company's ability to adopt and use information technology. Hill, Loch, Straub, and El-Sheshai (1998) specified that difference in culture and society has an influence on how customers view, accept, and adopt new technologies. Therefore, it is very important to understand how customers in different cultures adopt new technologies.

TAM was described as culturally biased and criticized for being culturally limited (Anderson et al., 1988; McCoy et al., 2007; McCoy, Everard, & Jones, 2005). UTAUT has, also, been verified across cultures. Oshlyansky et al. (2007) described UTAUT is a robust model with the ability to predict user acceptance of technology; however, they have found that the influence of constructs varied among countries. For example, social influence factor was described as a significant factor in Saudi Arabia and had a higher weight than in the other sampled countries (the UK, Greece, Czech Republic, New Zealand, South Africa, India, and Malaysia). These results showed that although some of the tested cultures are all described by Hofstede's index as collectivist cultures (India and Malaysia), yet the effect of social influence varies on each country's customers, which brings attention to the need to investigate the effect of social influence and potential other variables related to the culture and population when interpreting customers' technology adoption across countries and cultures.

Dai and Palvi (2009) also reported similar results; in their findings, they reported that social influence had a higher influence on Chinese customers' decision to adopt MC than the American customers.

Social influence was not the only construct reported to have different significance variation among cultures. Im et al. (2011) reported a higher impact of performance expectancy on behavioural intention in the USA than in Korea. This suggests that the US users consider how easy the technology is to use as a vital variable in their decision on technology adoption compared to the Koreans (Im et al., 2011).

These differences in UTAUT variable significance and weight between different countries, specifically these that score on opposite sides of Hofstede's cultural dimension of collectivism and individualism, indicate that there is still a need to further investigate UTAUT and to systematically investigate and theorize the salient factors that would apply to consumer acceptance and adoption of new technology in different cultural context and new contexts, such as new technologies (Venkatesh et al., 2012).

15.2.4 Trust

Trust has always been an important factor in online communication and usage. However, the fast evolvement of technology and the need to submit personal information especially in personalized services such as e-ticketing have increased trust role significantly (Nwanekezie et al., 2016; Sreenivasan & Noor, 2010). Mayer, Davis, and Schoorman (1995) defined trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectations that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer et al., 1995, p. 172). Grandison and Sloman (2000) suggested that trust is a solid belief in the ability of a thing to act consistently, securely, and dependably within a definite context. As these definitions suggest, uncertainty and risk of vulnerability are two critical conditions that are related directly to trust (Belanche, Casaló, & Flavián, 2012). Trust is believed to reduce vulnerability and assist the individual in comprehending social surrounding of the interchange (Pavlou, 2003), by providing an interpretation to what, when, why, and how others behave (Belanche et al., 2012; Gefen & Straub, 2003).

Trust in an online purchase is described as "an attitude of confident expectation in an online situation of risk that one's vulnerabilities will not be exploited" (Corritore, Kracher, & Wiedenbeck, 2003, p. 740). In the online context, there is no guarantee that the e-vendor will commit to his promises; there is also a high level of uncertainty and risk including conveying inaccurate information, financial fraud, violating of customer privacy, and unauthorized use of credit card information. Consequently, trust is a critical aspect of the online purchase and a key driver for adoption in the online context (Gefen, 2000; Gefen & Straub, 2003). Therefore, trust might be considered a key variable in explaining the adoption of e-commerce in general and online purchase.

15.3 Research Model and Hypothesis Development

15.3.1 Intention to Use E-Ticketing

Intention refers to the "anticipated or planned future behaviour of individuals and is also an immediate determinant of a behaviour" (Chen, 2007, pp. 110–111). In this conceptual paper, intention refers to individual acceptance to adopt e-ticketing.

Many studies have reported a sturdy and significant causal link between behavioural intention and targeted behaviour (Davis, 1989; Sheppard et al., 1988; Venkatesh & Davis, 2000; Venkatesh et al., 2003). As e-ticketing is still at its early stages in Arabic frontier markets, and customers' adoption of this technology is primitive, this conceptual paper will use intention as a commission for actual usage (Lee & Wan, 2010).

15.3.2 UTAUT and E-Ticketing

UTAUT proposes four independent variables as the core variables—performance expectancy, effort expectancy, social influence, and facilitating conditions. UTAUT assumes that there is a positive relationship between performance expectancy and intention to use and adopt new technologies. Performance expectancy refers to individual's expectation of how helpful is the new technology in performing the intended task (Venkatesh et al., 2003). In the case of e-ticketing, performance expectancy refers to the presence of advantages perceived by an individual when using the e-ticketing (Lee & Wan, 2010). The positive relationship between performance expectancy and intention to adopt and use new technology has been well established in the literature, and evidence of its existence and robustness has been reported in a different context and among countries and cultures (e.g. Madigan et al., 2016; Oliveira, Faria, Thomas, & Popovič, 2014). Therefore, a positive relationship between performance expectancy and intention to accept and use e-ticketing is hypothesized.

Hypothesis 1 Performance expectancy has a positive relationship with intention to adopt e-ticketing in frontier collectivist culture markets.

UTAUT also posits that effort expectancy which represents the perceived cognitive effort an individual needs to put in order to learn how to use and utilize the technology (Venkatesh et al., 2003) has a positive relationship with intention to adopt and use new technology. Similar to performance expectancy, effort expectancy and intention relationship has been reported significantly in different context and among countries and cultures. In the case of e-ticketing, effort expectancy represents the perceived cognitive effort put in order to learn how to use and utilize the interface used to purchase the e-ticket (Lee & Wan, 2010).

Hypothesis 2 Effort expectancy has a positive relationship with intention to adopt e-ticketing in frontier collectivist culture markets.

The third core independent variable of UTAUT is facilitating conditions. Venkatesh et al. (2003, p. 453) introduced this variable as "the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system". Although this variable showed a significant relationship with intention, yet it was excluded in some online-related adoption studies. For example, Oshlyansky et al. (2007) excluded facilitating condition specifically because the chosen technology, websites, would be available and accessible to all participants. A known form of facilitating condition is the technical support provided for a technology (Im et al., 2011). In the field of e-ticketing, facilitating conditions refer to the perceived support provided by the e-ticketing system provider. Previous studies have posited a relationship between facilitating conditions and intention to adopt e-ticketing. For example, Zhao, Chen, Wang, and Wang (2016) reported that system support has an influence on predicting customer adoption of mobile ticketing. Based on the previous, this conceptual paper hypothesizes a significant positive relationship between facilitating condition and intention to adopt e-ticketing.

Hypothesis 3 Facilitating conditions have a positive relationship with intention to adopt e-ticketing in frontier collectivist culture markets.

Finally, social influence refers to "the degree to which an individual perceives that important others believe he or she should use the new system". (Venkatesh et al., 2003, p. 453). Previous studies reported mixed findings regarding social influence. Yet, the social influence was reported to significantly influence intention in collectivist cultures. This was interpreted to the higher concern of people opinion in collectivist cultures. Thus, in this study social influence is hypothesized to have a significant positive relationship with intention.

Hypothesis 4 Social influence has a positive relationship with intention to adopt e-ticketing in frontier collectivist culture markets.

15.3.3 UTAUT and Trust

There are numerous features and characteristics of electronic service delivery, such as the lack of face-to-face interaction and the dynamicity of the virtual environment that results in creating uncertainty and reluctance to purchase online (Mariani & Lamarauna, 2017). The latter have positioned trust, in e-commerce relations, in a critical position. Accordingly, trust is expected to hold a significant role in adopting any activity that involves purchase of online goods and services (De Ruyter, Wetzels, & Kleijnen, 2001; Flavián & Guinalíu, 2006; Harris & Goode, 2004). Therefore, it is relevant to assume a significant influence of trust in adopting new technology that involves online transactions such as online purchase and e-ticketing.

Previous studies which investigated online ticket purchase have produced mixed results. For example, Kamarulzaman (2007) reported a nonsignificant direct effect of trust on the adoption of online travel shopping. On the other hand, Wen (2010) reported a positive effect on intention to online travel shopping. Since purchasing e-tickets signifies an alteration of the behaviour of purchasing paper ticket, then it is possible to associate it with instability. Moreover, insecurity associated with the perceived risk of computer system error (Chen, 2007) is expected to lead to suspicion, which magnifies the importance of trust. Therefore, trust is designated as the fifth independent variable.

Hypothesis 5 There is a positive relationship between perceived trust and purchase intention in frontier collectivist culture markets.

15.3.4 Trust and Social Influence

Previous studies established an association between individualism and collectivism and psychological outcomes of interest (values, self-concept, relationality, cognitive processes) (Jarvenpaa, Tractinsky, & Saarinen, 1999). Collectivist culture is described as cultures where individuals' beliefs depend on the social norms of the group (Kluckhorn & Strodtbeck, 1961). Collectivists were also described as sensitive to the ingroup-outgroup boundary (Jarvenpaa et al., 1999; Triandis, 1989). Thus, they are more likely to trust someone who is part of their group or trusted by their group (Yamagishi & Yamagishi, 1994). In reference to the assumption of group influence on trust, it is hypothesized that social influence has an influence to enhance the trust in adopting e-ticketing in frontier collectivist culture markets.

Hypothesis 6 There is a positive relationship between social influence and perceived trust in frontier collectivist culture markets.

15.3.5 Trust and Facilitating Conditions

Ang, Dubelaar, and Lee (2001) proposed that to improve online trust, merchant should be able to deliver the product or service as promised, protect customers' privacy using adequate privacy policies, and, most importantly, have the willingness to rectify in case the purchase did not meet the customer expectations.

As mentioned previously, facilitating conditions are related to the available technical infrastructure to support the use of the system (Venkatesh et al., 2003). In e-ticketing field, facilitating conditions refer to the perceived support provided by the e-ticketing system, which is expected to deliver the product or service as promised, protect customers' privacy by saving any financial or personal information customers share, and rectify any wrong should the purchase not meet the customer

expectations by helping them amend their order. Therefore, we propose that facilitating condition has a positive relationship with trust.

Hypothesis 7 There is a positive relationship between facilitating conditions and perceived trust in frontier collectivist culture markets.

15.4 Conclusion and Future Work

This conceptual paper aims to explore the related issues surrounding e-ticketing adoption in Arabic frontier markets, which is described as a collectivist culture. To achieve this goal, a revised UTAUT model was introduced. UTAUT is a robust theory that explains the adoption of new technology; however, the application of theory has generated contradictory findings (Abubakar & Ahmad, 2013).

To provide explanations to customers' technology acceptance in the frontier collectivist culture markets, such as e-ticketing industry, the proposed model incorporates the factors of the unique characteristics of e-commerce, collectivist culture, and frontier markets. In the revised model, trust is proposed as a fifth independent variable added to the model and posits a positive relationship with intention. In reference to Arabic consumer distinct characteristics which are associated with collectivist culture, the revised model hypothesized that social influence has a significant influence on trust. The model also suggested that facilitating conditions also have a significant relationship with trust.

Following theory establishment, a subsequent empirical test to the revised model must be accomplished. The empirical study should focus on developing a research instrument that signifies the proposed relationships cross-countries to validate the results.

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Zainah Qasem is an assistant professor at the School of Business of the University of Jordan. She has received her B.A. degree in Marketing from the University of Jordan and her M.A. and Ph.D. degrees in Marketing from the University of Leeds-UK. Her active research are consumer behaviour, e-marketing, and e-retailing.