

Marwa Magdy Ghanem / Soad Omran Mansour / Heba Adel

The impact of national culture on the adoption of e-tourism in Egyptian tourism companies

Abstract

Many previous studies shed light on the importance of studying the factors that preclude effective adoption of technology in the tourism industry. Prior studies also affirmed the presence of a relationship between the national culture, the acceptance of technology, and the effective adoption thereof. However, those studies differ in the cultural variables used and in results on their influence on technology adoption. This study used the national culture theory of Hofstede (2010) and the Technology Acceptance Model (Davis, 1989) to measure the impact of national culture and normative beliefs of marketing managers on the adoption of e-tourism. Data analysis was carried out using multiple linear regressions and one-way analysis of variance (ANOVA). The results showed that the culture of uncertainty avoidance had a significant positive impact on perceived ease of use and perceived usefulness. Each of the last two elements also affected the attitudes of marketing managers in tourism companies towards e-tourism and their intention to use it. Also, the results affirmed that long-term orientation culture has no significant impact on the perceived usefulness, ease of use or actual use of e-tourism for Egyptian tourism companies. It however seems to affect quality or/and effective adoption of e-tourism business.

Key words: e-tourism; theory of national culture; Technology Acceptance Model; tourism companies; Egypt

Introduction

The rapid development of communication and information technology has created many opportunities for improving effectiveness of tourism industry. For instance, the internet made it easy to communicate with tourists of various nationalities, provided opportunities for e-partnership, reduced the costs of services and lowered consumer prices, facilitated tourism products development and increased the competitiveness of tourism companies generally. However, the adoption of modern technology in tourism faces many challenges, especially in developing countries (Abdel-Fadeel, 2011), particularly regarding the acceptance and effective adoption of e-tourism (Ritchie & Ritchie, 2002; Werthner & Ricchi, 2004). Several researches have emerged to study the reasons of delay or failure in the adoption of ICTs in the tourism business (e.g. Li & Wang, 2010; Fey & Denison, 2003; Frotaine & Richardson, 2003) have confirmed that reasons for failed technology adoption may be attributed to governmental policies and legislation, the extent of availability of programs and applications, communications infrastructure, senior management support and skills, and other social and cultural factors such as the extent of acceptance of change among instrumental and secondary employees and partners (Abdel-Fadeel, 2011; Fey & Denison, 2003; Frotaine & Richardson, 2003; Venkatesh, Morris, Davis & Davis, 2003).

Marwa Magdy Ghanem, PhD, Tourism Studies, Suez Canal University, Ismailia, Egypt;
E-mail: marwamagdy00@gmail.com

Soad Omran Mansour, PhD, Tourism Studies, Suez Canal University, Ismailia, Egypt;
E-mail: Soad_Omran@yahoo.com

Heba Adel, Tourism Studies, Suez Canal University, Ismailia, Egypt;
E-mail: bassentadel@gmail.com

To date, the issue of the impact of culture on technology acceptance in general and in tourism has received little attention. Furthermore, the existing studies are mostly conducted in developed, Western countries (i.e. reference here). Given differences between cultures in general, and between developed and developing world cultures, more in-depth investigations are needed to provide a better understanding of the degree influence of the national culture and normative beliefs of tourism sector stakeholders on the adoption of technology. So far, there are only few studies conducted in the Arab world and with conflicting or ambivalent results (Alamri, Cristea & Al-Zaidi, 2014; Al-Hujran, Al-Dalahmeh & Aloudat, 2011; Azam & Quaddus, 2013; Srite & Karahanna, 2006). The aim of this study is, therefore, to expand on the existing knowledge on technology adoption by investigating the impacts of culture and normative beliefs in the context of Egyptian tourism. It is based on the Hofstede's (2010) national culture theory and Davis's (1989) Technology Acceptance Model.

This paper starts with a discussion of e-tourism in Egypt and the challenges faced by the tourism sector in the effective adoption of information technology, followed by an explanation of the dimensions of Hofstede's (2010) national culture theory and Davis's (1989) Technology Acceptance Model for measuring technological adoption in addition to the importance of these theories and how they were used in previous studies.

E-tourism in Egypt: present situation and challenges

The Egyptian tourism business sector is slow to adopt e-tourism. Although statistics indicate an increase in the number of internet users in Egypt since 2011, such that 38% of the population now use the internet daily, Dean, Bellefonds, Stevens and Zwillenberg (2012) and Abdel-Fadeel, (2011) acknowledged that tourism business does not properly benefit from the opportunities provided by internet technology. They articulated that the vast majority of tourism companies are still in the first stages of the application of e-tourism and their activities on the internet are limited to presenting basic company and service information, and communicating with business partners (tourism agents and tour programs abroad) through e-mails only (Dean et al., 2012; Abdel-Fadeel, 2011).

A number of researchers pointed out that the weakness of adoption of e-tourism among Egyptian tourism companies might be attributed to several reasons, including: (1) lack of awareness of the importance of investment in the e-tourism business and the adoption of information technology (Mavromatis & Buhalis, 2004); (2) lack of experience in e-marketing and e-commerce in general (Eraqi, 2005; Kamel & Hussein, 2002); (3) lack of senior management support; (4) lack of the policies and laws that regulate the e-tourism business in Egypt (Abdel-Fadeel, 2011; Kamel & Hussein, 2002); and (5) cultural challenges such as fear and unwillingness to change (Abdel-Fadeel, 2011).

The national culture and the adoption of e-tourism: impact and methods of measurement national culture theory

Although widely used, Hofstede's model is not without its limitations. Hofstede himself warns that the cultural dimensions he proposes are only indices of culture (reference), as culture is a nebulous and multifarious phenomenon (Keillor, Hauser & Griffin, 2009). Apart from the complexity of culture, the second major limitation is its Eurocentrism and preoccupation with 'national' culture is too rudimentary to fully grasp the complex ways in which culture works independent of nation states.

Nevertheless, the cultural dimensions remain expedient tool for the study of prevailing cultures in societal or organizational contexts (Hofstede & Hofstede, 2005; Laznjak, 2011).

Hofstede's definition of culture – "collective programming from the mind that distinguishes the members of one human group from the other" (Hofstede, 1980, p. 260) – is widely used by social scientists (Straub, Loch, Evaristo, Karahanna & Srite, 2002). Hofstede's cultural dimensions describe the effects of the community culture on the values of its members and how they condition human conduct (Hofstede, 2010). By these dimensions, the attitudes of individuals in a community can be judged and the individuals of one community can be distinguished from individuals of other communities in terms of their values, beliefs, attitudes and mentality.

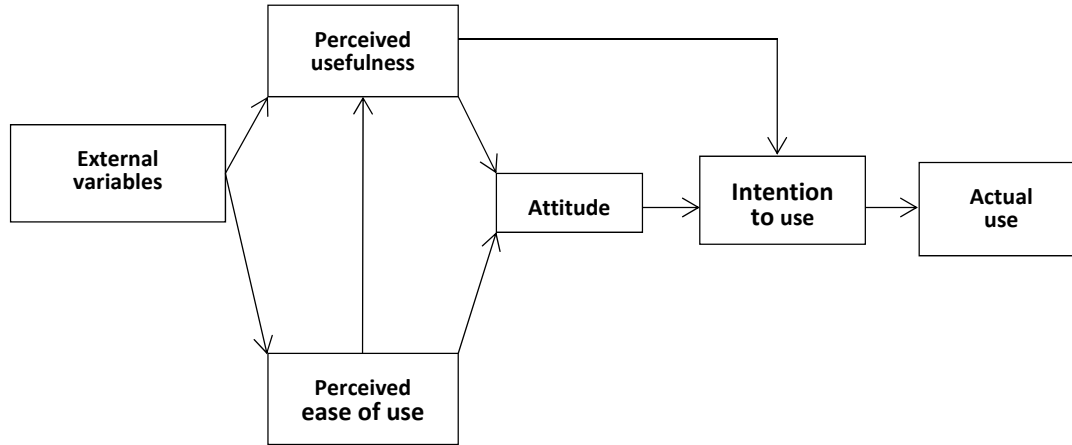
Hofstede's five basic dimensions are the authoritarianism index versus limited authority (power distance), the collectivity index versus individuality, the uncertainty avoidance index versus uncertainty acceptance, the masculinity pattern index versus femininity, and the long-term temporal orientation versus the short-term. Based on a pilot study operated on twelve general and marketing managers in seven Egyptian travel companies, two (uncertainty avoidance and long-term orientation) of the five dimensions of culture theory have been deemed as the most possible influential cultural dimensions on the adoption of etourism in the context of Egypt from the perspective of the interviewed managers. However, it is suggested that future research should measure the impact of other dimensions of the culture theory in similar contexts. The adopted two culture theory dimension are identified as follows (Hofstede, 2010, 2011); (1) uncertainty avoidance versus uncertainty acceptance (UA) measures how communities or people deal with cases of risks ambiguity, uncertainty and the unexpected events and anxiety of change. A high UA index indicates that the community is less tolerant to change and tends to avert anxiety about the unknown by imposing strict and bureaucratic rules, regulations and laws. Low-index communities are more open to change, and the rules, laws and principles are less stringent and more flexible. (2) Long-term versus short-term orientation (LTO) indicates the perspective of the community members toward the future in terms of focusing on the long-term and their acceptance of change, or focusing on the short-term through their adherence to the traditional aspects and their pride in the past, with more non-acceptance of change.

Technology Acceptance Model (TAM)

Derived from the theory of reasoned action (TRA), the TAM (Davis, 1989) has become one of the most influential models used in predicting and explaining behavior towards acceptance or rejection of technology, and it is more commonly used than alternatives such as the innovation diffusion theory, the theory of planned behavior and the unified theory of acceptance and use of technology. Many meta-analyses and review articles (e.g. King & He, 2006; Marangunić & Granić, 2012; Shumaila, Gordon & John, 2007) asserted the high credibility of TAM in explaining and predicting human behavior, and it has received considerable empirical support from various evaluations of user adoption in diverse contexts (e.g. Al-Hujran et al., 2011; Lacka, Chan & Yip, 2013; Lee, Tarcan & Varol, 2010; Trimi & Kim, 2013; Marangunić & Granić, 2012; Pavlou, 2003; Renko & Popović, 2015; Varol & Tarcan, 2009; Venkatesh & Davis, 2000). However, a major criticism of TAM is that it ignores social influences on technology adoption (Mathieson, 1991), but Tarcan and Varol (2010) and Venkatesh and Davis (2000) argued that social and human factors can be integrated into TAM to improve its predictive powers. A few studies, such as Venkatesh and Bala (2008) and Venkatesh and Davis (2000) tried to add other dimensions to the original theory of TAM, but those studies did not receive adequate attention in respect of application and measurement. Therefore, due to its widely usage and its examined

validity and reliability across different technologies and various usage contexts, this study adopts the TAM (Figure 1) to understand technology adoption in the context of the Egyptian tourism industry.

Figure 1
Technology Acceptance Model



Source: Davis (1989).

In his theory Davis (1989) assumed that the acceptance and adoption of technology is determined by two major variables: perceived usefulness (PU) and perceived ease of use (PEOU). PU refers to "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320), while PEOU referred to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). Davis (1989) also asserted that several external factors affect the PEOU, which in turn affects PU and consequently precipitates users' attitude (Attitude) to be either positive or negative towards the technological development which, in turn, drives the desired behaviors towards usefulness and intention to use (IU) and finally actual use (AU) of technology (Al-Hujran et al., 2011). Thus, the following hypothesis are formulated to guide this study (see Figure 2):

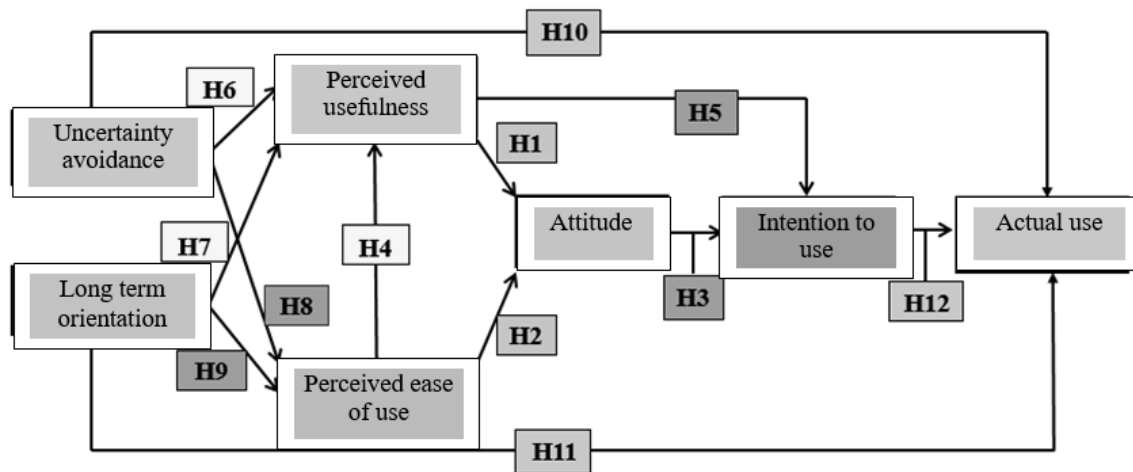
1. There is a direct relationship between PU and Attitude towards the use of e-tourism (H1)
2. There is a direct relationship between PEOU and Attitude towards the use of e-tourism (H2)
3. There is a direct relationship between Attitude and the IU e-tourism (H3)
4. There is a direct relationship between PEOU and PU of e-tourism (H4)
5. There is a direct relationship between the PU and IU e-tourism (H5)

Several studies confirmed that external variables affecting ease of use and the PU can be attributed to normative beliefs and culture (e.g. Alamri et al., 2014; Abdul Rashid, Sambasivan & Abdul Rahman, 2004; Al-Hujran et al., 2011; Fey & Denison, 2003; Frotaine & Richardson, 2003; Keillor et al., 2009; Lee, Trimi & Kim, 2013; Srite & Karahanna, 2006; Venkatesh et al., 2003). Based on the analysis of these studies and the application of Hofstede's theory for measuring national culture (Hofstede, 2010), several hypotheses linking the two dimensions of Hofstede's theory (uncertainty acceptance (UA) culture and the long-term orientation (LTO) with the TAM theory to measure the impact in the context of e-tourism at the Egyptian tourism companies. The present study has assumed that the uncertainty acceptance (UA) culture and the long-term orientation (LTO) culture among managers

of tourism companies affects their outlook towards the perceived ease of use (PEOU) and perceived usefulness (PU) of e-tourism. Both perceived ease of use (PEOU) and the perceived usefulness (PU) affect the Attitude of the managers at tourism companies and determine their intention to use (IU) e-tourism, which in turn affects the actual use (AU) thereof, thus it is posited that:

1. There is a direct relationship between UA and the PU of using e-tourism (H6)
2. There is a direct relationship between LTO and the PU of using e-tourism (H7)
3. There is a direct relationship between UA and PEOU e-tourism (H8)
4. There is a direct relationship between the LTO and the PEOU of e-tourism (H9)
5. There is a direct relationship between UA and AU of e-tourism (H10)
6. There is a direct relationship between LTO and the AU of e-tourism (H11)
7. There is a direct relationship between IU and the AU of e-tourism (H12)

Figure 2
Conceptual model and hypotheses



Research methods

Measurements and instrument

To measure the five dimensions of TAM, the scale from Al-Hujran et al. (2011), Srite and Karahanna (2009) and Yoon (2009) was used. To measure the Hofstede's cultural dimension, scale from Al-Hujran et al. (2011), Hofstede (2010) and Yoon (2009) was also used. The previous studies indicate high validity and reliability of this scale. The wording of some of these questions was amended and other questions were proposed, as shown in Table 1, for the questions to be suitable for the study context (e-tourism) and the research community (Egyptian tourism companies). For example, a number of previous studies measured the AU from the frequency of use of the web pages and the period of browsing them, while the present study considers that such measurements do not reflect the minimum limit of the e-tourism uses at tourism companies, and proposed measuring the AU by a question on the dealing with business partners via the internet and facilitation of direct e-booking. The proposed model consists of 7 dimensions which were measured by a set of 21 variables on which the respondents

were asked to rate on a scale of 1 (completely disagree) to 5 (completely agree). These dimensions and variables are presented in Table 1.

Sampling, instrument and process of data collection

To test the proposed model, a self-completion questionnaire was demonstrated to marketing managers at the tourism companies in the Greater Cairo Governorate, since marketing managers -in Egypt- are the category who are supposed to be the most in touch with the internet technology, especially in the presence of the multiple marketing opportunities available on internet networks (Abdel-Fadeel, 2011). A simple random sampling method was followed and a cross-sectional analysis was used as data was collected over a two and a half-month period (from July to September 2015). To check for the clarity of the questions a pilot study was conducted with 15 respondents 3 weeks before the beginning of field study.

A page was set up for the questionnaire on Google forms to facilitate filling out the forms and to increase the response rate. As Cooper and Schilinder (2014) advised, respondents have been given time to think about the questions to help them provide accurate answers. Either by email or after phone calls, the link of the questionnaire on Google Forms was sent by Email. Emails and Telephone numbers were obtained from the official Egyptian travel companies guide (2014), which published by the Egyptian Ministry of Tourism. Also, face to face drop-and-collect technique at which questionnaire was personally delivered –and later collected has been used. All respondents were assured that all information provided will be treated anonymously, kept strictly confidential and used only for academic purposes. In addition, the findings with interested respondents. 300 questionnaires were distributed by these means and a total of 109 questionnaires were completed, and SPSS v22 was then used for data analysis.

Reliability and validity

Researchers (DeVellis, 2012; Veal, 2011) indicated that the Cronbach's alpha can be regarded as the most appropriate method to investigate the reliability or internal consistency of survey research. They acknowledge that, a Cronbach's alpha is acceptable when its value is higher than seven. In this study, the values of Cronbach's alpha test appeared to range between 0.92 and 0.98, which indicates a high internal consistency among the items (see Table 1). Validity has described as the extent to which an empirical instrument measures what it is supposed to measure (Cooper & Schilinder, 2014). To ensure content validity, an extensive literature review was carried out to specify scales which were previously employed in prior research to measure the current study constructs (see Table 1). Also, multiple linear regression was used to prove the validity of hypotheses (H1H12), and to find the impact coefficients of each independent variable (predictor) in every proposed model. The ANOVA test was also conducted to evaluate the statistical significance of the coefficients of the independent variables.

Table 1
Constructs, variables and reliability (Cronbach Alpha)

Construct	Items/source	Abbreviation	Number of elements	Cronbach's alpha coefficient
Uncertainty avoidance (UA)	I do not prefer to be exposed to situations that I do not all the details thereof and do not know how to deal with (Yoon, 2009)	UA1	4	0,929
	I cannot trust companies that try to get information about my company and establish on line relationship with it (Yoon, 2009)	UA2		
	I do not prefer to deal with companies that have no branches in Egypt	UA3		
	Working at a company that provides rules for organizing the e-tourism work is better than working for a company that does not provide these rules (Al-Hujran et al., 2011)	UA4		

Table 1 Continued

Construct	Items/source	Abbreviation	Number of elements	Cronbach's alpha coefficient
Long term orientation (LTO) (Hofstede, 2010)	The company where I work plans to search for work partners through the internet	LTO 1	4	0.943
	The company where I work accord attention to long term planning	LTO 2		
	The company where I work accord attention to fast gains through short term plans	LTO 3		
	Personally, I prefer to achieve fast gains through short term plans more than the gains achieved through long term planning	LTO 4		
Perceived ease of use (PEOU)	Use of internet in tourism work is effective and improves work productivity (Al-Hujran et al., 2011)	PEOU1	4	0.989
	Using the internet helps me to improve my performance at work (Al-Hujran et al., 2011)	PEOU2		
	Internet is useful in searching for new work partners	PEOU3		
	Internet is useful in working with the present partners (B2B)	PEOU4		
Perceived usefulness (PU) (Srite & Karahanna, 2009)	I find difficulty to get the information that I am searching for through the internet	PU1	3	0.983
	I find difficulty in dealing online with the tourists	PU2		
	It is difficult to learn the e-marketing skills	PU3		
Attitude (A) (Srite & Karahanna, 2009)	I prefer dealing with work partners face to face rather than through the internet	A1	2	0.983
	I believe that tourism marketing through the conventional method is better than through the internet	A2		
Intention to use (IU) (Yoon, 2009)	I intend to learn the methods of tourism work online	IU1	2	0.995
	I intend to use the internet more than what I do at present, in order to finish my work effectively	IU2		
Actual use (AU)	The company where I work offer direct e-booking	AU1	2	0.987
	The company where I work deals with the present work partners through the internet	AU2		

Results and discussion

This study measures the impact of the national culture and normative beliefs of the Egyptian tourism company employees on the adoption of e-tourism using Hofstede's (2010) cultural dimensions and the TAM (Davis, 1989). The study suggested that the uncertainty acceptance (UA) culture and the long-term orientation culture of managers of tourism companies affect their views towards the perceived ease of use (PEOU) and the perceived usefulness (PU) of e-tourism. PEOU and PU also affect attitude (A) towards e-tourism adoption and affect managers' Intention to use (IU) e-tourism.

The results indicated that uncertainty acceptance (UA) affects the perceived usefulness (PU) and the perceived ease of use (PEOU). Also, the results showed that each of PEOU and UA affect PU, as their statistical significance levels were less than 0.05. Table (2) shows that each of them has direct proportional effect to almost the same degree on the PU because of the nearness of the values of their unified factors (0.234 and 0.248). In addition, the value of standardized β was found to be 0.353, indicating an effect of the UA on the PEOU. This confirms the validity of the study hypotheses H4, H6 and H8. In line with the results of the present study, Al-Hujran et al. (2011) confirmed that the uncertainty acceptance (UA) can affect the acceptance of the risk and the obscurity which can be

created by the internet and the new technology. The culture of uncertainty in the effectiveness of adoption of e-tourism in work may stem from the lack of awareness of what can be achieved by tourism companies from e-work, either in obtaining competitive advantage against other companies or in marketing the tourism product and attracting tourists to buy the service directly through the internet (business-to-consumer, B2C) or the possibility to communicate with business partners and create new partnerships (online business-to-business, B2B). The lack of certainty in the interest attributable to tourism companies from e-work, as stressed by Abdel-Fadeel (2011), may be attributed to lack of the skills necessary for tourism work on the internet, lack of knowledge, lack of support from senior management and lack of effective training.

The study findings agree with respect to the positivity of the uncertainty acceptance (UA) impact on perceived ease of use (PEOU) and the perceived usefulness (PU) with the vast majority of studies examining the effect of Hofstede's dimensions on the acceptance of technology, despite differences in the field and the context of the application, and the majority of such research having been conducted in developed countries (e.g. Al-Hujran et al., 2011; Alamri et al., 2014; Srite & Karahanna 2006). The results of the present study differ from those of Azam and Quaddus (2013), who did not find a direct relationship between UA and PU and PEOU.

The statistical results also proved that the long-term orientation (LTO) culture does not affect the perceived usefulness (PU) of adoption of e-tourism at the Egyptian tourism companies, as the statistical analysis results confirmed that the statistical significance (Sig.) is equal to 0.959 (greater than 0.05). This result is also in line with the value of the standard coefficient (standardized β) of the LTO (0.005), which proves invalidity of the hypothesis H7. Also, the results evident that LTO culture does not affect the PEOU of adopting e-tourism at the Egyptian companies (0.093-), which confirms the invalidity of H9 (see Table 2).

Generally, the difference between the prior studies' results concerning the impact of the dimensions of culture on technological adoption may be due to the different contexts or environments within which those studies were conducted, particularly with regard to developing or developed context (Brown & Venkatesh, 2003; Gefen, Karahanna & Straub, 2003). The difference between the results may also be attributed to the difference in the level of technological adoption under study (primitive adoption for presenting company's information only or full adoption that allows opportunities for direct selling and dealing with business partners and making new B2B partnerships through the internet). However, the difference between the results suggests the need for future research to focus on clarifying the differences and studying the causes thereof in a deeper and more specific way.

Table 2
Multiple regression results

Hypothesis	Standardized β	Correlation is significant at	Significance	Residual sum square	Accuracy %
Model 1					
H4 PEOU \rightarrow PU	0.234	<0.05	Significant	20.59	91.33
H6 UA \rightarrow PU	0.248	<0.05	Significant		
H7 LTO \rightarrow PU	0.005	<0.05	Insignificant		
Model 2					
H8 UA \rightarrow PEOU	0.353	<0.05	Significant	51.10	82.84
H9 LTO \rightarrow PEOU	-0.093	<0.05	Insignificant		

Table 2 Continued

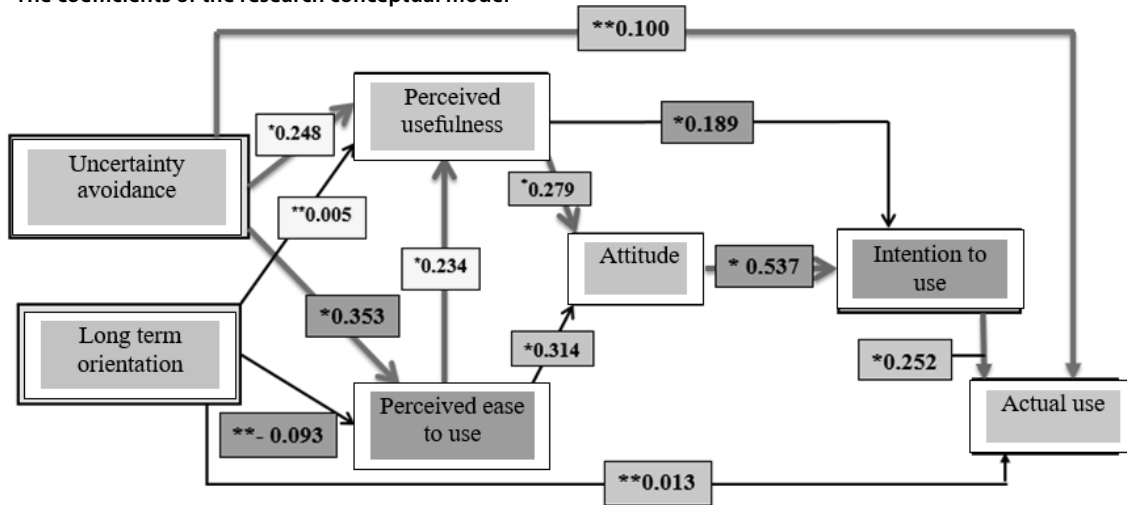
Hypothesis		Standardized β	Correlation is significant at	Significance	Residual sum square	Accuracy %
Model 3						
H1	PU \rightarrow A	0.279	<0.05	Significant	71.18	69.87
H2	PEOU \rightarrow A	0.314	<0.05	Significant		
Model 4						
H5	PU \rightarrow IU	0.189	<0.05	Significant	59.31	78.68
H3	A \rightarrow IU	0.537	<0.05	Significant		
Model 5						
H10	UA \rightarrow AU	0.100	<0.05	Insignificant	72.72	78.71
H11	IU \rightarrow AU	0.252	<0.05	Significant		
H12	LTO \rightarrow AU	0.013	<0.05	Insignificant		

The statistical results have generally shown that the long-term orientation (LTO) and the culture of uncertainty acceptance (UA) do not affect the actual use (AU) of the internet by the marketing managers in Egyptian tourism companies, as the statistical significance for both variables was found to be greater than 0.05, and the values of their standard coefficients (standardized β) were 0.013 for LTO and 0.100 for the uncertainty acceptance (UA), which invalidates study hypotheses H10 and H12, in contradiction to Lee et al. (2013), who found that communities or the people who have tendency to work to achieve quick results use technology less, and vice versa. However, the results of the present study in this regard corroborate Keillor et al. (2009), who found no relationship between the culture of long-term orientation (LTO) and the actual use (AU). However, the present study proved that tourism companies under study use the internet in the tourism business to communicate with tourists and to market tourism services, and that most of them do not provide direct e-booking services. These companies also work through the internet network with no clearly defined future planning. Previous studies (Abdel-Fadeel, 2011; Buhalis, 2003) confirmed that adoption of technology in the tourism industry is carried out on several levels, starting with using the internet to disseminate information about the company and email communication (information provision), advancing to provide direct booking and sale of tourism products and trips (online selling and direct booking), and thus transferring from mere marketing and customer contact to achievement of sales and thus financial return. This B2C trajectory is in parallel to making B2B partnerships via the internet and contracting with e-travel agents such as Expedia, Travelocity and Booking.com. The results of the present study confirmed that the companies under study are still at the first level, as the majority of those companies use the internet as means for dissemination of information about themselves, thus overlooking the highest levels of adoption which are the most influential in business competitiveness in the tourism industry.

Finally, the results of the present study indicated that the perceived ease of use (PEOU) and the perceived usefulness (PU) have a direct impact on managers' attitude towards the adoption of e-tourism, as the statistical significance thereof was found to be less than 0.05, which proves that the impact of the PEOU is greater than the impact of the PU with regard to the unified coefficients for each: (0.314) for PEOU compared with (0.279) for PU. These results are in contrast to the results of previous studies (Al-Hujran et al., 2011, 2011; Fu, Farn & Chao, 2006), which indicated a greater impact of PU on attitude. These results also proved that the PU and attitude taken towards the use of e-tourism can improve the intention to use (IU), and that the impact of attitude (0.537) is greater than the impact of perceived usefulness (PU) (0.189). Therefore, the results showed that the IU has a direct impact on

the actual use (AU) (see Figure 3), which suggests the need to increase awareness of the importance of e-tourism within tourism companies, and to draw the attention to the available opportunities so as to attain competitive advantages from tourism work on the internet by effective training. The following presents some suggestions based on the results of the present study to improve the level of adoption of e-tourism at the Egyptian companies.

Figure 3
The coefficients of the research conceptual model



*Correlation is significant at <math><0.05</math>.

**Correlation is insignificant.

Conclusion and implications for theory and practice

This study aims to investigate the impact of national culture and normative beliefs on technology adoption in the context of tourism companies. In this respect, the national culture theory of Hofstede (2010) and the Technology Acceptance Model (Davis, 1989) have been adopted. Several studies have examined the relationship between the national culture, the acceptance of technology, and the effective adoption thereof. However, those studies differ in the cultural variables used and in results on their influence on technology adoption. It is worth mentioning here that prior studies also lack exploring these relations in the context of tourism and more particularly in the context of developing countries. The results of this study add to theory by providing further evidence that may contribute to the understanding and knowledge of the relationship between national cultural and technology adoption in tourism context. For instance, the results showed that the culture of uncertainty avoidance had a significant positive impact on perceived ease of use and perceived usefulness. Each of the last two elements also affected the attitudes of marketing managers in tourism companies towards e-tourism and their intention to use it. The results also affirmed that long-term orientation culture has no significant impact on the perceived usefulness, ease of use or actual use of e-tourism for Egyptian tourism companies. It however seems to affect quality or/and effective adoption of e-tourism business. With these findings, this study contributes to the ongoing argument of the influence of national culture on technology acceptance. Despite differences in the field and the context of the application, the findings confirm results of studies such as Alamri et al. (2014), Al-Hujran, et al. (2011), Keillor et al. (2009) and Srite and Karahanna (2006), while confronting others such as Azam and Quaddus (2013), Lee et al. (2013) and Fu, Farn and Chao (2006) (for more details, see results and discussion section).

On practical level, the findings of this study would drive attention of many of the Egyptian tourism companies on the influence of cultural issues on the late technology adoption and the less competitiveness of e-marketplace. This in turn would drive better solutions to culture problems in work place. For instance, the results highlighted the need for The Egyptian tourism companies to encourage their marketing managers to accept the new technology in the tourism business through the provision of effective training. This is to enable marketing managers to acquire the skills required for e-work. In addition to work on changing the cultural dimensions and beliefs that can preclude the effective adoption of e-tourism, such as the culture of uncertainty acceptance, which affects companies' ability to deal with the new technology risks and challenges and consequently negatively affect the effective competition of these companies in the e-tourism market. Also, Egyptian tourism companies need to adopt long-term plans which provide them with competitive advantages that help them to withstand the constantly changing and evolving e-tourism community. They should not be content with the lower levels of technological adoption that only allow presentation of information about the company on the company's official website or on the social media sites, but it is worth these companies keeping up with the technological development which allows them to move from information provision to the level of marketing and direct booking. It is also necessary for them to call assistance of the necessary expertise to identify the available opportunities in dealing with tourists (B2C) and business partners (B2B), and to also use the new technology to organize the work inside those companies (through intranet and portal systems).

Limitations and suggestions for future studies

This research has revealed many areas that need further exploration and study. The present study focused on measuring only two of Hofstede's (2010) dimensions with reference to TAM (Davis, 1989); it is suggested that future research should measure the impact of the other dimensions. Furthermore, sampling of other (non-marketing management personnel) stakeholders could yield more comprehensive insights to understand the impact of national culture on the adoption of e-tourism in different environments (e.g. hotels or the governmental tourism sector). It is also recommended that future research should try to understand the reasons for the differences between the results of the previous researches that measure the impact of the dimensions of culture on the technological adoption, whether within the tourism sector or within other sectors. More effort is needed to attain a better understand of the influence of national culture on technology adoption in both developing or developed country contexts.

References

- Abdel-Fadeel, M. (2011). *Destination management systems: towards a holistic effectiveness evaluation*. Doctoral thesis. The University of Hull, UK. Retrieved from <http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.541576#sthash.gcl1dGVT.dpuf>.
- Abdul Rashid, Z., Sambasivan, M. & Abdul Rahman, A. (2004). The influence of organizational culture on attitudes toward organizational change. *The Leadership and Organization Development Journal*, 25(2), 161-179.
- Alamri, A. S., Cristea, A. I. & Al-Zaidi, M. S. (2014). Saudi Arabian cultural factors and personalised elearning. *Edulearn14 Proceedings*, 7114-7121.
- Al-Hujran, O., Al-Dalahmeh, M. & Aloudat, A. (2011). The role of national culture on citizen adoption of E-Government services: an empirical study. *Electronic Journal of E-government*, 9(2), 93-106.
- Azam, M. & Quaddus, M. (2013). Examining the influence of national culture on adoption and use of information and communication technology: A study from Bangladesh's SME perspective. *The International Technology Management Review*, 3(2), 116-126.

- Brown, S. A. & Venkatesh, V. (2003). Bringing non-adopters along: the challenge facing the PC industry. *Communications of the ACM*, 46(4), 76-80.
- Buhalis, D. (2003). *Etourism: Information technology for strategic tourism management*. Pearson Education.
- Buhalis, D. & Wagner, R. (2013). E-destinations: global best practice in tourism technologies and applications. *Springer Berlin Heidelberg*, 119-130.
- Chung, J. Y. & Buhalis, D. (2008). Information needs in online social networks. *Information Technology and Tourism*, 10(4), 267-281.
- Cooper, D. R. & Schindler, P. S. (2014). *Business research methods* (12th ed.). New York: McGraw-Hill Education.
- Davis, F. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.
- Dean, D., Bellefonds, N., Stevens, A. & Zwillenberg, P. (2012). *Egypt's internet Future*. Retrieved from https://www.bcgperspectives.com/content/articles/digital_economy_telecommunications_egypts_internet_future/.
- DeVellis R. (2012). *Scale development: theory and applications* (3rd ed.), Thousand Okas, CA: Sage.
- Draper, N. R. & Smith, H. (1998). *Applied Regression Analysis* (3rd ed.). London: John Wiley.
- Eraqi, M. (2005). IT as a Means for Enhancing Competitive Advantage. *Anatolia: An International Journal of Tourism and Hospitality Research*, 16(2).
- Fey, C. & Denison, D. (2003). Organizational Culture and Effectiveness: Can American Theory Be Applied in Russia? *Organization Science*, 14(6), 686-706.
- Fisher, G. & Beatson, A. (2002). The impact of culture on self-service on technology adoption in the hotel industry. *International journal of hospitality and tourism administration*, 3(3), 59-77.
- Frotaine, R. & Richardson, S. (2003). Cross-cultural Research in Malaysia. *Cross Cultural Management*, 10(2), 7589.
- Fu, J.-R., Farn, C.-K. & Chao, W.-P. (2006). Acceptance of Electronic Tax Filing: A study of taxpayer intentions, *Information and Management*, 43(1), 109-126.
- Hofstede, G. (1980). *Culture's Consequences: International Differences in Work-Related Values*. Beverly Hills, CA: Sage Publications.
- Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and Culture*, 2(1). Retrieved from <http://dx.doi.org/10.9707/2307-0919.1014>.
- Hofstede, G. & Hofstede, G. J. (2005). *Cultures and Organizations: Software of the Mind* (Rev. 2nd ed.). New York: McGraw-Hill. (For translations see www.geerthofstede.nl and "our books").
- Hofstede, G., Hofstede, G. J. & Minkov, M. (2010). *Cultures and Organizations: Software of the Mind*. (3rd ed.). New York: McGraw-Hill.
- Gefen, D., Karahanna, E. & Straub, D. (2003). Trust and TAM in Online Shopping: An Integrated Model. *MIS Quarterly*, 27(1).
- Kamel, S. & Hussein, M. (2002). The emergence of e-commerce in a developing nation: Case of Egypt. *Benchmarking: An International Journal*, 9(2), 146 - 153.
- Keillor, B., Hauser, W. & Griffin, A. (2009). The relationship between political risk, national culture and foreign direct investment as a market entry strategy: perspectives from U.S. firms. *Innovative Marketing*, 5(1), 48-54.
- King, W. & He, J. (2006). A Meta-Analysis of the Technology Acceptance Model. *Information & Management*, 43(6), 740-755.
- Lacka, E., Chan, H. K. & Yip, N. K. (2013). Does change of cultural environment change attitudes towards e-commerce? New research model investigating the effect of culture on e-commerce acceptance. In *International Conference on e-Business and e-Commerce Management (ICBCM)*.
- Laznjak, J. (2011). Dimensions of National Innovation Culture in Croatia: Content Validity of Hofstede's Dimensions. *Društvena istraživanja : Journal of General Social Issues*, 20(4). DOI:10.5559/di.20.4.05.
- Lee, S. G., Trimi, S. & Kim, C. (2013). The impact of cultural differences on technology adoption. *Journal of World Business*, 48(1), 20-29.

- Li, X. & Wang, Y. (2010). Evaluating the effectiveness of destination marketing organizations' websites: evidence from China. *International Journal of Tourism Research*, 12, 536–549.
- Marangunić, N. & Granić, A. (2012). TAM - A quarter century of research. *Contemporary Psychology*, 15(2), 205-223. Retrieved from <http://hrcak.srce.hr/111605>.
- Mavromatis, C. & Buhalis, D. (2004). Internet Development in the Egyptian Tourism Industry. *Information and Communication Technologies in Tourism*.
- Munar, M. (2012). Social media strategies and destination management. *Scandinavian Journal of Hospitality and Tourism*, 12(2), 101-120.
- Pavlou, P. 2003. Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7(3), 69-103.
- Ritchie, R. & Ritchie, J. (2002). A framework for an industry supported destination marketing system. *Journal of Tourism Management*, 23, 493-454.
- Renko, S. & Popović, D. (2015). Exploring the Consumers's acceptance of Electronic Retailing Using technology Acceptance Model. *Business excellence*, 9(1), 29-40. Retrieved from <http://hrcak.srce.hr/139866>.
- Shumaila, Y., Gordon, R. & John, G. (2007). Technology Acceptance: A Meta-Analysis of the TAM: Part 2. *Journal of Modelling in Management*, 2(3) 251-280.
- Srite, M. & Karahanna, E. (2006). The role of espoused national cultural values in technology acceptance. *MIS quarterly*, 679-704.
- Straub, D., Loch, K., Evaristo, J. R., Karahanna, E. & Srite, M. (2002). Toward a Theory-Based Measurement of Culture, *Journal of Global Information Management*, 10(1), 13-23.
- Tarcan, E. & Varol, E. S. (2010). Role of the demographic factors in the process of hotel information systems adoption. *Tourism: An International Interdisciplinary Journal*, 58(2), 127-144.
- Tavakol, R. & Dennick M. (2011). Making sense of Cronbach's Alpha. *International Journal of Medical Education*, 2, 53-55.
- Twati, J. M. (2014). The influence of societal culture on the adoption of information systems: the case of Libya. *Communications of the IIMA*, 8(1), 1.
- Varol, E. S. & Tarcan, E. (2009). An empirical study on the user acceptance of hotel information systems. *Tourism: An International Interdisciplinary Journal*, 57(2), 115-133.
- Veal, A. J. (2011). *Research methods for leisure and tourism a practical guide*. UK: Prentice Hall.
- Venkatesh, V. & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision sciences*, 39(2), 273-315.
- Venkatesh, V. & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), 186-204.
- Venkatesh, V., Morris, M. G., Davis, G. B. & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- Werthner, H. & Ricci, F. (2004). E-commerce and tourism. *Communications of the ACM*, 47(12), 101-105.
- Xiang, Z. & Gretzel, U. (2010). Role of social media in online travel information search. *Tourism Management*, 31(2), 179-188.
- Yoon, C. (2009). The effects of national culture values on consumer acceptance of e-commerce: Online shoppers in China. *Information and Management*, 46(5), 294-301.

Submitted: 29/06/2016

Accepted: 12/06/2017