

# Patterns of Touch Screen Technology Use in Religious Tourism and Pilgrimage

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## ABSTRACT

The purpose of this study is to examine the effective use of interactive touchscreen technology by pilgrims and the Umrah performers during the Hajj and Umrah rituals. The study relied on a media survey methodology. A questionnaire was used as a tool to collect data. A total of 400 pilgrims and Umrah performers participated in the study. The study drew from the uses and gratifications approach. Results indicated that the bulk of pilgrims and the Umrah performers are active and heavy users on using the interactive touchscreen technology. Moreover, the findings confirmed that there is a strong correlation between the intensity of usage of touchscreen technology by pilgrims as well as Umrah performers and their demographic variables. More importantly, the findings revealed that touchscreen usage increased the spread of awareness, guidance, and information among pilgrims and Umrah performers about the Hajj and Umrah rituals.

## KEYWORDS

Pilgrimage, Religious Tourism, Touchscreen Technology, Uses and Gratifications

## INTRODUCTION

Over recent years, large events have conferred huge significance on Event Management, or the management of mass meetings. In the religious sector, for centuries, pilgrimages have been a clear example of mass events of a spiritual nature (Al-Harrbi, 1998). Due to the nature of these events, which can mobilize millions of people in just a few days, obtaining and sending information has become an essential process for managing such large crowds that come from different cultural and social backgrounds. Furthermore, such big, crowded events have increased the need for effective communication among and between officials and guests. Hence, it became necessary to rely on new technology to increase awareness amongst pilgrims, umrah performers and visitors during the performance of the Hajj rituals. Moreover, it provides them with a great deal of peace and safety. Recently, the Saudi authorities began to use interactive touchscreen technology to increase awareness during the Hajj rituals. Islam's Hajj and Umrah pilgrimages comprise two of the oldest forms of

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religious tourism. According to Akbulut and Ekin (2018) the Arabic word ‘Hajj’ is translated in English as ‘pilgrimage’, which means journey to a holy place. Haj (as cited in Akbulut and Ekin, 2018:19) is the fifth pillar of Islam and as such it is incumbent upon every adult, sane, free and capable (physically, mentally and financially). The pilgrimage to Mecca is one of the five pillars of Islam and is obligatory for those with sufficient financial means. Many Hajjis describe it as the most significant religious event in their lives. Within the framework of the Kingdom’s vision 2030, they have started to use interactive touchscreen technology.

This helps facilitate the process of Hajj and Umrah and provides comfort to pilgrims, Umrah performers and visitors in addition to providing them with the necessary awareness. This study aims to explore the extent to which pilgrims and umrah performers rely on the use of interactive touchscreen technology and how dependent they are on it to guide them.

### **Touchscreen Technology**

In the past few years, the integration of touchscreen technology as a source of information has been used widely in numerous fields ranging from banking, supermarket, airlines, hotels, and museums (Milne, 2018). Many studies showed that touchscreen technology has demonstrated acceptance among consumers. Other studies focused on examining their effectiveness as a strategy that can enrich customer service and exploring the perspectives and experiences of customers using the technology (Piotrowicz & Cuthbertson, 2014). Moreover, display manufacturers worldwide have acknowledged the upward trend in adoption and have begun to integrate touchscreen functionality into the fundamental design of their products (Brewster, Hoggan, & Johnston, 2008). According to Brewster et al., (2008), touchscreen technology is becoming ever so common with manufacturers and users and is on the rise as a source of information and awareness especially during mass meetings.

Akbulut & Ekin (2009:18) confirmed that Hajj is a form of religious tourism. The Hajj to the Saudi Arabian holy cities of Mecca and Medina is basic to Islam and is a pilgrimage that all Muslims are required to make at least once in their lifetime unless they are excused from doing so by extenuating circumstances. The Hajj is considered the single largest annual gathering of human beings, where the number of pilgrims reaches more than 2 million congregating at one time. The rapidly growing number of pilgrims to Makkah every year to attend Hajj poses continual problems for Saudi Arabian authorities as they seek to ensure the safety and security of the pilgrims. In the last couple of years, the ministry of Hajj and Umrah in Saudi Arabia have started using touchscreen technology during Hajj and Umrah to help provide information and spread awareness to the pilgrims and the Umrah performers. This is also used to help always provide safety especially during the Hajj and Umrah rituals. Though touchscreen technology that helps pilgrims perform Hajj activities efficiently is gaining popularity, not many studies have investigated the pilgrims’ usage of and adaption to this new technology.

### **Uses and Gratifications Approach**

The uses and gratifications approach (U&G) has its origins in media effects studies. This approach deals with how audiences use a particular medium or message, and what gratifications they obtain out of that specific medium or message (Ruggiero, 2000). Quite simply, the uses and gratifications approach is used to study and understand the audience’s appeal to specific media. Furthermore, the uses and gratifications approach emphasizes that individuals’ needs influence their media selections – by seeking out and using specific media, people can meet these needs (Ruggiero, 2000). In the same line, Blumer and Katz (1974) showed that the main hypothesis in the uses and gratification approach is that the audience have specific needs and they choose a specific media to use mainly to achieve those individual needs. In general, the uses and gratifications approach suggests that individuals choose media that they believe can meet their needs. Additionally, McQuail (2010) indicated that uses and gratifications approach has a variety of assumptions: (a) the first hypothesis is that people will use media in different patterns, depending on their current needs and motives; (b) personal factors are a more vital determinant of audience formation than cultural factors; (c) unlike past mass communication

theories, the uses and gratifications approach assumes that individuals are action-oriented and will select the furthestmost fitting outlet that will best achieve their gratifications (Katz et al., 1987; McQuail; 2010) The strength of the uses and gratifications approach lies in its applicability across a range of media contexts. Moreover, the wide range covered by uses and gratifications studies makes the body of literature rich in terms of its depth, diversity, and methodological rigor (McQuail; 2010).

According to Mohamed (2016) numerous researchers (e.g., Anco & Cozma, 2009; Lin, 1999; McQuail, 2010, Raine, 2008) have posed many types of gratifications such as information seeking, personal identity, integration and social interaction, as well as entertainment. Ebersole (2000) stated that the U&G approach is one of the most important approaches to analyze new media technologies. Over time, scholars (e.g., Mohamed, 2016, Frederick, Clavio, Burch, & Zimmerman, 2012) have used the uses and gratification approach to investigate and explain the audiences' motivations in using a specific medium such as television, social media, Facebook, Twitter and smart phone technology. Uses and gratifications has grown rapidly in its application to the internet and new media over time. A considerable number of studies have already been published on uses and gratifications in the context of the internet and social media. The popularity and attractiveness of new technology has encouraged many media and communication scholars (e.g., Valentine, 2011; Nadler & Hong, 2012; Wenker, 2012; Zhang & Lin, 2014) to explore the effects, uses, gratifications, attitudes, and engagement in new technology. The rapid expansion of the touchscreen technology and new media has resulted in dramatic changes in the media landscape. This requires analyzing uses and gratification in the context of the touchscreen technology. Hence, the interactive nature of touchscreen technology makes the uses and gratifications approach well suited for studying the phenomena of extensive usage of touchscreen technology among pilgrims and Umrah performers during the Hajj and Umrah rituals.

## **Research Problem**

This study aims to investigate the extent to which the pilgrim and the Umrah performers rely on interactive touchscreens technology to obtain information for the purpose of awareness and guidance during the Hajj and Umrah rituals.

the effective use of interactive touch-screen technology by pilgrims and the umrah performers, during the Hajj and Umrah rituals.

## **OBJECTIVE OF THE STUDY**

The general objective of this study is to examine the effective use of interactive touch-screen technology by pilgrims and the umrah performers, during the Hajj and Umrah rituals. The main objectives of this study are as follow:

1. To determine the patterns of using interactive touchscreens technology by the pilgrims and the Umrah performers during the Hajj and Umrah rituals.
2. To understand the purpose of using interactive touchscreens technology by the pilgrims and the Umrah performers during the Hajj and Umrah rituals.
3. To determine the gratifications which pilgrims and Umrah performers achieve by using interactive touchscreens technology during Hajj and Umrah rituals.
4. To identify study proposals to increase the effectiveness of interactive touchscreens technology in providing awareness and information for pilgrims and Umrah performers.
5. To understand the attitudes of pilgrims and Umrah performers towards the usage of interactive touch screen technology as a source of information and awareness during the Hajj and Umrah rituals.

## The Importance of the Study

The current study aims to explore the usage of touchscreen technology among pilgrims and Umrah performers and its impact on their information during the Hajj and Umrah rituals. The study drew from the Uses and Gratifications approach. According to Wimmer and Dominick (2000) the knowledge of how people use a particular medium is a significant step on the road to more knowledge about the development and the prospective effect of the medium. Consequently, the speedy growth and popularity of touchscreens technology has generated concerns among media and communications researchers about the impact of touchscreens technology on individuals' information and knowledge during big and mass events. Several questions have led to the interest in this study. First, it should be mentioned that although there is an enormous literature empirically studying the effects and usage of touch screens technology in Western countries, but there are few such studies researching developing countries. Therefore, the current study is designed to enhance literature by investigating how and why pilgrims and Umrah performers are actively seeking out knowledge and information during the Hajj and Umrah rituals. Technology is becoming a gradually vital component of several veins of modern culture including work, education, Hajj and Umrah rituals, and social relationships. Hence, it is important to understand how these advancements affect the people that utilize it. Additionally, examining the uses and gratifications of touch screens by pilgrims and Umrah performers during the Hajj and Umrah rituals will provide an interesting counterpoint to the majority of work on this subject that is derived from the United States and Europe. Finally, this study also attempts to evaluate the role of interactive touch screen in disseminating guidance and awareness information among pilgrims and Umrah performers, to find out the strengths and weaknesses, so that we can develop the role of touch screen technology in the future.

## LITERATURE REVIEW

In the following session the researcher will talk about the most important studies which revolve around Hajj and Umrah, as well as the touchscreen technology studies. The first part will mainly focus on Hajj and Umrah studies, the second part will concentrate on the studies that used interactive touchscreen technology. In this regard, there are several studies that approach the topic of the current study, which are as follows:

At the beginning of the nineties, a number of scholars attempted to understand and investigate the most effective media that pilgrims rely on to raise awareness (Al-Otaibi, and Al-Asiri, 1993; Saleh, 1998; Al-Nafiy, 1999). For instance, the first study was introduced by the Scientific Research Team (1990) who aimed to identify the most effective media of informing pilgrims, as well as to identify the best places and times to deliver awareness. The findings affirmed that most pilgrims prefer reading newspapers as a way to make use of time in the countries from which they came, desiring the possibility of using this method as the most important source of awareness for Hajj, and what the pilgrims will encounter while they are in the Holy Land. The study also confirmed that the mosque is the best place for the majority of pilgrims to receive awareness during the days of Hajj. The results also showed that most of the pilgrims are not keen to follow the Saudi media (newspapers, radio, television) while they are in the Kingdom of Saudi Arabia.

Similarly, Al-Otaibi, and Al-Asiri, (1993) investigated the most useful source of information for pilgrims during Hajj. Among the results of this study, a large proportion of the pilgrims (73%) were noted to encounter difficulties while trying to obtain information related to the pilgrims' need during the performance of the rituals. The study also referred to the most useful source of information for pilgrims, which was the "*Pilgrim's Guide*," then the "*Mentor of the Pilgrim from his country*" then one of the accompanying pilgrims. In his influential study, Saleh (1998) investigated the sources of information for the pilgrims. The study attempted to investigate the pilgrims' sources of information to find out its effect on their behavior. The results of the study confirmed that the major source of

information for the masses of pilgrims is the lectures given in the Kingdom, but in their countries, Islamic affairs acquired the largest percentage. This is an indication of the most important party for future coordination before the arrival of the pilgrim, as well as the use of opinion leaders and group mentors to deliver lectures.

Moreover, Al-Nafiy (1999) examined the role of communication and media in educating pilgrims about safety matters during the Hajj season in the year 1995. The findings showed that 70.1% reported that they did not receive any awareness during their transportation to the Kingdom and 28.1% received awareness during their transportation. Regarding the spread of awareness to pilgrims, 48.6% reported that they had received awareness during their stay in the Kingdom, and 47.6% reported that they did not receive any awareness. When asked about how they obtained this awareness, they reported that this was achieved through the Hajj mission, then guide boards, then lectures and seminars, then guides for pilgrims' institutions, then friends, then imams of mosques, then brochures for Hajj, then security men. In the same vein, Al-Sharif (2004) conducted a study about the awareness needs of pilgrims. The study intended to identify the most appropriate means and sources of information through which pilgrims can obtain guidance information, as well as contributing to identifying the educational messages needed by the Umrah performer and the best appropriate means to deliver these messages. The results of the study proved that the pilgrims need information in all different fields; therefore, guidance and guides must be comprehensive for all needs, and priority should be given to information related to daily transportation to and from the residence as well as information related to public facilities, and the performance of the ritual. The mechanism for providing the pilgrim with the guidance information needed during the performance of the ritual was via a religious guide from the pilgrim's country, as reported by 68.2% of the respondents; followed by one of the companions, the guide for the Umrah Foundation, the guidebooks, the awareness guides in the Kingdom, the lectures, and the various media.

In his significant study, AL-Hariri (2004) investigated the radio broadcasts of the mass communication channel (Hajj Radio in Mina) and analyzed its contents. The findings showed that the high percentage of (self-communication), which reached 75.3%, and the decline in the mass communication rate (58.3%). Helmy (2013) identified the motives of the pilgrims' exposure to the Holy Quran and Sunnah channels in developing awareness of religious culture. The findings showed that there are statistically significant differences between the quality and the gratifications achieved from exposure to the two study channels according to different demographic characteristics of gender in favor of (males – age – level of education – nationality). The results of the study also confirmed the existence of statistically significant differences between the proposals for developing the Holy Qur'an and Sunnah channels and demographic characteristics represented by gender in favor of (females – coming – age – level of education – nationality). Additionally, Gazzaz and Taha (2014) in their study about the evaluation of the Central Circumambulation (Tawaf) Program during the Hajj in 2014, found that 100% of the study sample had completed the arrival circumambulation prior to the interviews, of which 55.6% moved according to the Institution's instructions. It was noted that 69% of the Southeast Asia Foundation pilgrims reported that they have benefited from the Central Circumambulation program, in addition to 54.1% of the non-Arab Africa Foundation pilgrims and 53.5% of the Arab States Foundation pilgrims who also reported to have benefited from the Central Circumambulation program.

Moreover, in their study Khan and Gazzaz (2014), aimed to identify the context and features of communication in the facilities and housing of pilgrims and Umrah performers and their relationship to communication behaviors. The study confirmed that the degree of openness in the context of the communication process has a statistically significant effect on the number of contacts and their frequency in stressful situations. Helmy (2014) explained the role of visual websites in providing pilgrims and Umrah performers with information on Hajj and Umrah rituals and their directions towards them, and that 32.4% of respondents believe that the most important reasons for relying on internet sites is to obtain information related to Hajj and Umrah rituals, and 36.2% of them depend on it for obtaining religious information and knowledge in general. The results of the study also demonstrated the existence of a statistically significant correlation in the level of knowledge towards the rituals of Hajj and Umrah and

that there are statistically significant differences in the level of knowledge of Hajj and Umrah rituals information and the demographic variables of the respondents. Furthermore, Helmy and Ghareeb (2017) examined the role of the security media in supporting the image of the Kingdom of Saudi Arabia among pilgrims and Umrah performers and confronting media campaigns directed from abroad. The results of the study showed that 73% of the pilgrims and Umrah performers follow the Saudi security media during the Hajj period, due to their keenness to know everything new. The study also showed that the sample members relied heavily on media sources to collect information on safety and security during the Hajj period and demonstrated that there are statistically significant differences between the role of the Saudi security media in spreading security awareness during the Hajj period and the demographic characteristics of the respondents

### **Touch-Screen Technology**

The wealth of Touch-screen research is quite nascent, and its application is still limited in the developing countries. Moreover, the idea of using touch screens technology by pilgrims and the umrah performers, during the Hajj and Umrah rituals is relatively new trend. It is necessary to point out that over the past few years touch screen technology are rapidly increasing in popularity and widespread use. They are entertaining, attractive, and potentially powerful learning tools for different ages (Clarke, L., & Abbott, L. 2016; Neumann, 2014). Thus, many researchers from different disciplines have been interested in studying the effective use of touch screen technology in many fields. (Shape, A. 2021; Toh, et al., 2020; Milne, 2018; Oliemat, Hmeideh, Alkhawaldeh, 2018; Cross, 2017; Laura, 2017; Wang and Wu. 2014). For example, Sharpe (2021) studied the effects of touchscreen technology usage on the social emotional development of preschool-aged children. The researcher tried to answer many important research questions, for example. What is the relationship between the time a child between the ages of four and six spends on a smart device and their social emotional development? Additionally, what is the relationship between the time a parent spends on a touchscreen device and the social/emotional development of their child aged four to six? The findings confirmed that child and parent screen time usage to be negatively associated with the social emotional development of the child. Additionally, results indicated that parents who used tool-based applications rated their children with higher levels of social emotional development. A number of studies have confirmed that touch screens technology have the potential to provide individuals with useful information that raise their awareness, especially during the significant events. Toh, et al., (2020) investigated prospective associations of mobile touch screen device (i.e., smartphone, tablet) use and patterns of use with musculoskeletal symptoms and visual health among adolescents. Results confirmed that potential relationships were found between baseline smartphone use and follow-up neck/shoulder. Moreover, results confirmed that tablet touch screen use was also associated with neck/shoulder, low back and arms symptoms.

Milne (2018) had conducted a study about children with visual impairments and investigated how they used touchscreen technology in learning. Her results had illustrated that the children with visual impairments used touchscreen technologies for learning in a number of different ways, despite having to overcome accessibility challenges in order to use them. Additionally, the study showed that one of the challenges that both the blind students and students with low vision had encountered in learning to use the touchscreens, was how to explore the screen. In the same direction, Oliemat, Hmeideh, Alkhawaldeh, (2018) investigated how children use touch-screen tablets in Jordan in particular, and what implications this may have for learning and teaching in early years. By using a semi-structured interviews and structured observations, the findings showed that overall, children had reasonable knowledge of touch-screen tablets and their features. Moreover, the results indicated children viewed touch-screen tablets as an entertaining device more than as a learning device. Additionally, touch-screen tablets were used for various functions with 'playing games' being the most popular purpose, followed by watching YouTube.

In his significant study, Talbot (2017) tried to answer the following question: Is there a statistically significant difference in the level of task load experienced by a learner when undertaking an interactive multimedia learning activity delivered by a mobile touch-screen device compared to that experienced

by a learner undertaking an equivalent non-interactive learning activity? Results confirmed that effective use of multimedia may ameliorate any cognitive load placed on users by the device and that smartphones may provide a better platform for this type of m-learning than tablet computers. Cross (2017) investigated the millennial generation's acceptance of touch-screen technology as a form of customer service interaction within the fast-food industry. Moreover, the researcher also studied the specific features of touchscreen technology that millennials find acceptable or not acceptable as a form of customer service interaction in fast food establishments. The study used a narrative inquiry research design to gain insights into the experiences of millennials. The findings demonstrated that millennials indicated there were some problems with using touch screen technology in fast food establishments, like other places that use similar touch screen technology. They expressed concern about the potential failure of the machine and the inaccuracy of the technology being used.

In her study, Laura (2017) investigated the usage of touch-screen technology among geoscientists. The results of her study concluded that the productivity has significantly increased due to the usage of touchscreens. Neumann (2016) examined the associations between children's developing literacy skills and home use of touch screen for writing and reading. Results found positive correlation between the frequency of writing with tablets and print awareness, print knowledge, and sound knowledge. Wang and Wu (2014) examined the use of mobile piece detach screen technology such as iPads as a device. The most important objective of this study was to analyze if the usage of touchscreen technology device can influence the behaviors of the customers in terms of patronizing restaurants that offer touchscreen technology for ordering food. Their findings indicated that both functional and emotional factors considerably influenced the perceived value of touch screen technology in restaurants.

## RESEARCH DESIGN AND METHODOLOGY

This study was designed to identify and describe the effective use of the interactive touch-screen technology by pilgrims and Umrah performers during the Hajj and Umrah rituals. To better understand and examine the use of touchscreen technologies by pilgrims and Umrah performers during the Hajj and Umrah rituals, a random sample of 400 individuals representing the various segments of the pilgrims and Umrah performers was employed in this study. It includes males (200) and females (200), individuals from different socioeconomic strata, occupations, and individuals from different countries. According to Wimmer and Dominick, survey research is an important and useful method of data collection (Wimmer and Dominick 2000, 2003). Gunter suggested that survey research "enables researchers to explore developing relationships between media use and media consumers' attitudes or behaviour that may take many weeks, months or even years to emerge" (Gunter, 2000: 241). After finishing the initial design of questionnaire form, all questions were organized according to logical order that would meet the objectives of the study. The pre-test was used to identify the time needed to complete the questionnaire and any additional comments by respondents. The pre-test was conducted 2 weeks prior to the actual survey to refine it. After that SPSS was used to analyze the collected data. The researcher used a group of his research colleagues, as well as a number of postgraduate students who were previously trained in this type of field research. Descriptive statistics were used to describe the gender, frequency, percentage methods were used during the analysis process. In addition, the researcher used Chi-square and Crammer's V Coefficient.

### Research Hypotheses

Based on the research purposes, the following research hypotheses are developed formulated to guide the study.

**H1** There is a statistically significant correlation between the intensity of the pilgrims' and Umrah performers' use of interactive touch-screen technology and the degree to which the proposed contents contribute to increasing their awareness and guidance information.

- H2** There are statistically significant differences between the intensity of the pilgrims’ and the Umrah performers’ use of interactive touch-screen technology and their demographic variables represented by (gender – socioeconomic level – age).
- H3** There are statistically significant differences between the degree to which the contents presented by touch-screen technology contribute to increasing the educational sample information and their demographic variables represented by (gender – socioeconomic level – age).
- H4** There are statistically significant differences between the degree of confidence of the pilgrim, and the Umrah performer in the topics that are published through the interactive touch screen technology and the socio-economic level for the benefit of those with a high level.

**Research Questions**

The study also tried to answer the following questions:

- Q1** How often do pilgrims and Umrah performers use interactive touch screens?
- Q2** What information do the respondents follow most on the interactive screens?
- Q3** What are the most common features of interactive touch screens used by the respondents?
- Q4** What are the sources of the study sample in obtaining awareness information for pilgrims, and Umrah performers?
- Q5** To what extent do interactive touch screens increase the information of the respondents?
- Q6** What are the study proposals to increase the effectiveness of interactive touch screens in providing awareness information for pilgrims, and Umrah performers?

**Data Analysis and Results**

The focus of this part is to present the results of the field study conducted on a sample of pilgrims and the umrah performers, during the Hajj and Umrah rituals. The data used for the analysis were collected from a survey as discussed earlier in the methodology procedures .

**The Main Characteristics of f Respondents**

Table 1. Characteristics of respondents

		N	%
<b>Gender</b>	Males	200	50
	Females	200	50
	<b>Total</b>	<b>400</b>	<b>100</b>
<b>Economic level</b>	High	90	22.5
	Middle	84	21
	Low	226	56.5
	<b>Total</b>	<b>400</b>	<b>100</b>
<b>Age</b>	20 – 30	280	70
	30 – 40	62	15.5
	40 or more	58	14.5
	<b>Total</b>	<b>400</b>	<b>100</b>

### Interactive Touch Screens Use and Exposure

Figure 1 summarizes to what extent the respondents are exposed to the interactive touch screens. Results showed that most of the respondents are using touch screens during the Hajj and Umrah rituals. The percentage of respondents who use the touch screens always was 74% and Those who use touch screens sometimes were 24.25% . While those who use it rarely were 5%. These findings show that touch screens have turned to be a mainstream phenomenon used by many pilgrims and the umrah performers during the Hajj and Umrah rituals. These results agree with previous studies (e.g., Shape, A. 2021; Toh, et al., 2020; Lauren, 2018; Cross, 2017 and Laura, 2017).

### Exposure to Touch Screens for Hajj and Umrah Information

Regarding the frequency of touch screens use for Hajj and Umrah Information, respondents were asked how frequently they use touch screens to get information about the Hajj and Umrah rituals. It can be seen from Figure 2 that of the 400 respondents, more than 65. % said they always look for the Hajj and Umrah rituals information on touch screens, 25% used touch screens sometimes, and 10 used touch screens rarely.

From Figure 3, it is clear that the percentage of respondents who use the touch screens five times and more, was 20% (N. 80). Those who use touch screens two to five times were 38.5% (N. 152), while those who use it one time came to 42. %.

Figure 1. Touch screen usage among respondents

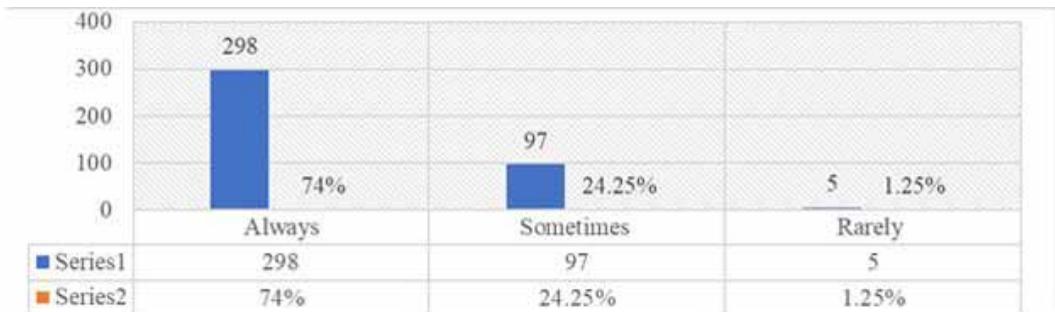


Figure 2. Exposure to touch screens for Hajj and Umrah information

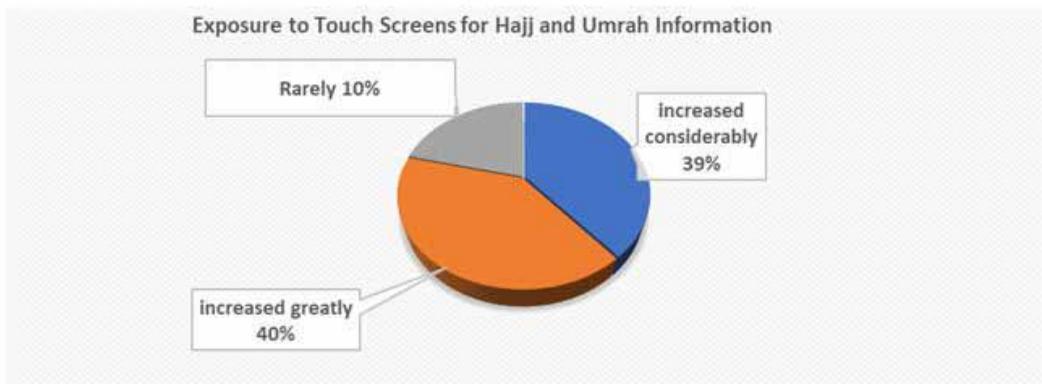
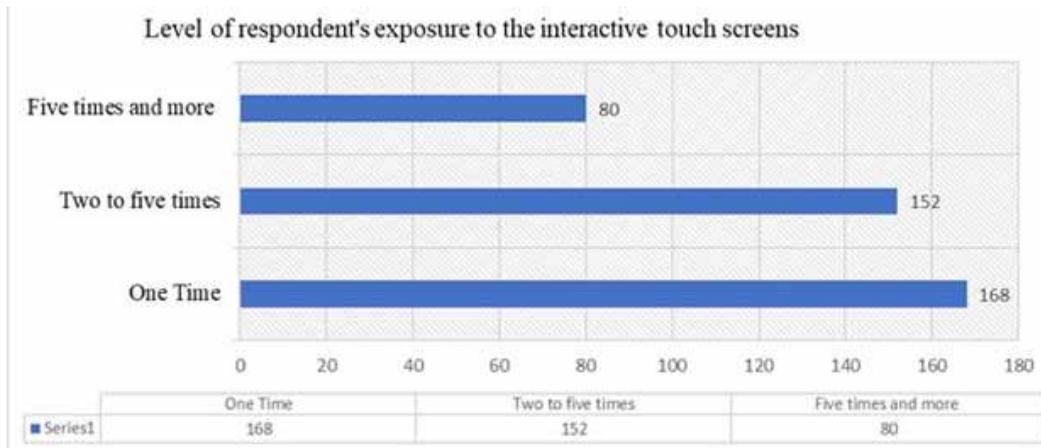


Figure 3. Level of respondent's exposure to the interactive touch screens



### Reasons for Exposure to Interactive Touch Screens

Technology is becoming a gradually vital component of several veins of modern culture including work, education, Hajj and Umrah rituals, and social relationships. Hence, it is important to understand how these advancements affect the people that utilize it. According to Gunter (2000) Individuals choose to watch certain television channel or read specific publications because they expect to have certain needs satisfied by doing so. The media can create certain moods or feelings in their consumers, and the expectation of particular experiences through the consumption of certain types of media content is a fundamental aspect of media usage phenomenon” (Gunter, 2000: 135). It is evident from Table 2 that “It has information that helps me” got first place with a relative importance of (84%), followed by “The way it displays information is simplified” in second place, with a relative importance of (81.5%), and “It helps me to know how to perform the rituals correctly” ranked third with a relative importance of (81%), followed by “It has the possibility to respond to inquiries” which ranked fourth with a relative importance of (70.5%).

According to Blumer and Katz, (1974) people choose a specific media to use mainly to achieve their individual needs. Individuals use the media to satisfy specific needs. Table 3 clarifies the most

Table 2. Reasons for exposure to interactive touch screens

Phrases	Responds				Total	%	Relative Importance	Order
	Yes		No					
	N	%	N	%				
It has information that helps me	273	68.25	127	31.75	400	100	84.0	1
The way it displays information is simplified	252	63	148	37	400	100	81.5	2
It helps me to know how to perform the rituals correctly	247	61.75	153	38.25	400	100	81	3
It has the possibility to respond to inquiries	164	41	236	59	400	100	70.5	4
It increases my religious culture	157	39.25	243	59.75	400	100	69.5	5
Acquisition of a new experience	155	38.75	245	61.25	400	100	68.9	6
It enables me to communicate with the Sheikhs	128	31.75	272	68.25	400	100	66	7

important information respondents usually read in the interactive touch screens. The findings showed that “Religious information I would like to know” ranked first place with a relative importance of (81.3%), followed by “Information related to health awareness” in second place, with a relative importance of (80.3%), and “Information on how to perform the rituals” ranked third with a relative importance of (79%), followed by a “Information for communicating with elders and officials” which ranked fourth with a relative importance of (68.3%).

### Touch Screens Evaluation

To measure the respondents’ views about the information provided by the touch screens technology during the Hajj and Umrah rituals, respondents were asked if the touch screens provided them with enough information to understand the issues they were interested in during the Hajj and Umrah rituals. Figure 4 indicates that more than half of the respondents (33.2% +18.8%) noted that the amount of information provided by the touch screens, regarding the issues they were concerned about, was enough or more than enough. 36.9% of the respondents indicated that the amount of information was not enough, while 10.9% indicated the information provided was not at all good enough.

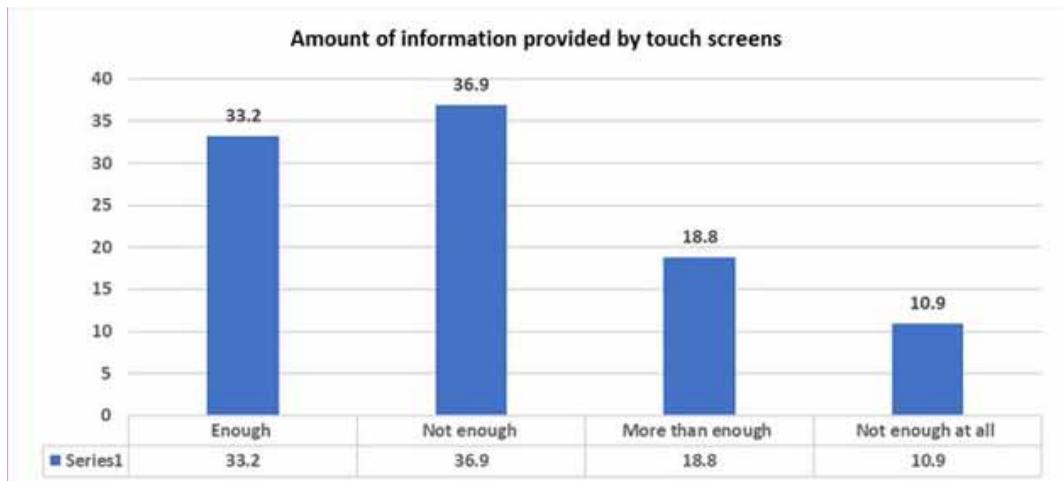
### The Impact of Touch Screens Use on Respondents’ Awareness During the Performance of the Rituals

To measure the role of touch screens in increasing respondents’ awareness about the rituals of Hajj and Umrah, the researcher used 1–5-point Likert scale. Participants were asked; did using touch screens

Table 3. The most important information respondents usually read in the interactive touch screens

Information	Yes		No		Total	%	Relative Importance	Order
	N	%	N	%				
Religious information I would like to know	250	62.5	150	37.5	400	100	81.3	1
Information related to health awareness	242	60.5	158	39.5	400	100	80.3	2
Information on how to perform the rituals	232	58	168	42	400	100	79.0	3
Information for communicating with officials	146	36.5	254	63.5	400	100	68.3	4

Figure 4. Amount of information provided by touch screens



increase your awareness about the rituals of Hajj and Umrah? It can be seen from the Figure 4 that, 33% stated that their awareness about the rituals of Hajj and Umrah was increased considerably by touch screens during the rituals. While, 34% indicated that touch screens had increased greatly their awareness. 18% reported that touch screens increased their awareness somewhat, 11% mentioned the touch screens had increased their awareness very little. Only, 4% reported the touch screens did not increase their awareness about the rituals of Hajj and Umrah at all. This shows that touch screens help in increasing the awareness of Pilgrims and Umrah Performers' reliance during the performance of the rituals.

### The Issues Emphasized in Touch Screens

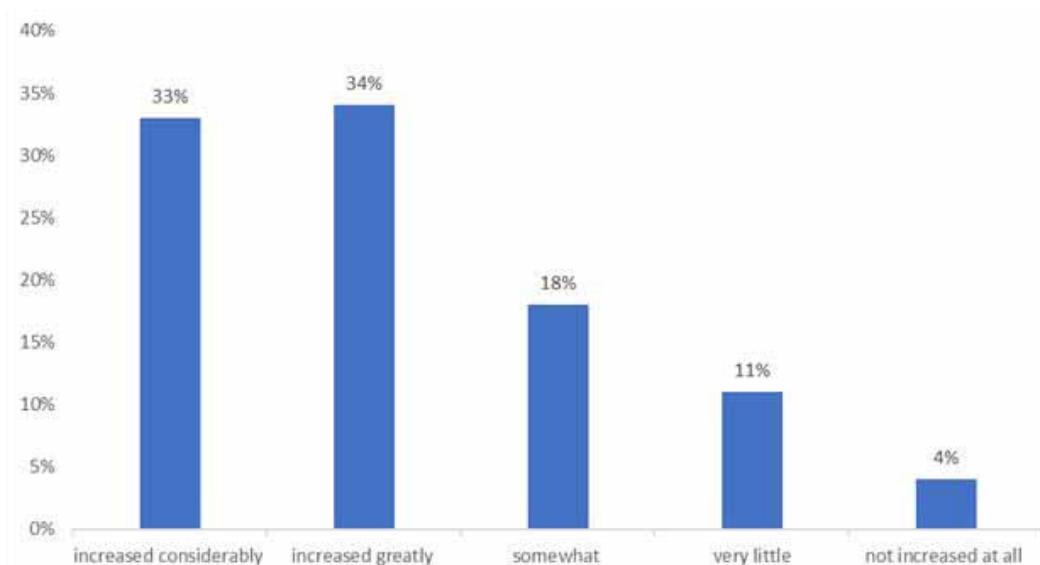
To determine the most important subsidiary issues respondents, follow in touch screens respondents were asked the following question. 'In your opinion, what are the most important issues you follow in touch screens? And "if you were to put them in order, which of these issues should take the highest priority in your view?

From Table 4, it is obvious that the topics of "increases my religious information" ranked first with a relative importance of (85.8%), followed by "knowing the correct rituals of Hajj and Umrah" in second place, with a relative importance of (84.3%), and "knowing the religious fatwas related to Hajj and Umrah" ranked third with a relative importance of (74.8%), followed by (knowing the location of rites - health information) which ranked fourth with a relative importance of (53%). From the above, religious information is the most important information provided by touch screens, and this is consistent with the nature of the occasion

### Characteristics of Interactive Touch Screens that Attracted Respondents to Use It

Table 5 indicates that "easy to use" got first place with a relative importance of (84%), followed by "its information is simple" in second place, with a relative importance of (81.5%), and "it uses picture, sound, color, and motion" ranked third with a relative importance of (80.8%), followed by "it gives me an opportunity to interact with the information" which ranked fourth with a relative importance of (70.5%) and "its shape is attractive" came in the fifth rank with a relative importance of (69.5%).

Figure 5. The Impact of Touch Screens Use on Respondents' Information about the Rituals of Hajj and Umrah



**Table 4. Subsidiary Issues in touch screens**

Type of Contribution	Responds				Total	%	Relative Importance	Order
	Yes		No					
	N	%	N	%				
Increases my religious information	286	71.5	114	28.5	400	100	85.8	<b>1</b>
Knowing the correct rituals of Hajj and Umrah	274	68.5	126	31.5	400	100	84.3	<b>2</b>
Knowing the religious fatwas related to Hajj and Umrah	198	49.5	202	50.5	400	100	74.8	<b>3</b>
knowing the location of rites health information	24	6	376	94	400	100	53.0	<b>4</b>

**Table 5. Reasons for exposure to interactive touch screens**

Characteristics	Responds				Total	%	Relative Importance	Order
	Yes		No					
	N	%	N	%				
Easy to use	272	68	128	32	400	100	84.0	<b>1</b>
Its information is simple	252	63	148	37	400	100	81.5	<b>2</b>
It uses picture, sound, color, and motion	246	61.5	154	38.5	400	100	80.8	<b>3</b>
It gives me an opportunity to interact with the information	164	41	236	59	400	100	70.5	<b>4</b>
Its shape is attractive	156	39	244	61	400	100	69.5	<b>5</b>
Ease of communication with sheikhs	128	32	272	68	400	100	66.0	<b>6</b>

## The Supporting Materials

It is evident from Table 6 that “videos” got first place with a relative importance of (86.5%), followed by “Images” in second place, with a relative importance of (83%), and “Dialogue” ranked third with a relative importance of (74.3%), followed by “news stories ” which ranked fourth with a relative importance of (73%) and “communication with sheikhs” came in the fifth rank with a relative importance of (71.8%), followed by “news reports” which ranked sixth with a relative importance of (70.8%).

As evident from Table 7 that “using the 3D feature in the contents” got first place with a relative importance of (87.9%), followed by “using direct contacts with sheikhs and officials” in second place, with a relative importance of (83%), and “the possibility to add photos and videos by users” ranked third place with a relative importance of (80%), followed by “establishing databases for officials and sheikhs” which ranked fourth with a relative importance of (74.8%).

## Results of Testing Research Hypotheses

In the current study, several hypotheses were postulated to be tested. The first advanced that: “There is a significant correlation between the intensity of the pilgrims’ and Umrah performers’, use of touch-screen and the degree to which the proposed contents contribute to increasing their awareness and

**Table 6. The most preferred supporting forms and materials for the respondents to present religious information via touch screens**

Forms	Responds				Total	%	Relative Importance	Order
	Yes		No					
	N	%	N	%				
Videos	292	73	108	27	400	100	86.5	<b>1</b>
Images	264	66	136	34	400	100	83.0	<b>2</b>
Dialogue	194	48.5	206	51.5	400	100	74.3	<b>3</b>
News stories	184	46	216	54	400	100	73.0	<b>4</b>
Communication with sheikhs	174	43.5	226	56.5	400	100	71.8	<b>5</b>
News Reports	166	41.5	234	58.5	400	100	70.8	<b>6</b>
Investigations	150	37.5	250	62.5	400	100	68.8	<b>7</b>
Interact with the information presented in it	146	36.5	254	63.5	400	100	68.3	<b>8</b>

**Table 7. How to improve the effectiveness of touch screens in providing educational information for pilgrims, and Umrah performers?**

Proposals	Responds				Total	%	Relative Importance	Order
	Yes		No					
	Q	%	Q	%				
Using the 3D feature in the contents	303	76	97	24	400	100	87.9	1
Using direct contacts with sheikhs and officials	264	66	136	34	400	100	83.0	2
The possibility to add photos and videos by users	240	60	160	40	400	100	80.0	3
Establishing databases for officials and sheikhs	198	49.5	202	50.5	400	100	74.8	4

guidance information”. As expected, a significant correlation exists between between the intensity of the pilgrim, and the Umrah performers’ use of interactive touch screen technology, and the degree of the proposed content’s contribution to increasing their educational information and guidance (Chi-square=32.388;  $P < 0.001$ ;  $DF=4$ ). Hence, we can see that the first hypothesis has been fully accomplished.

Table 9 showed that there are significant differences between males and females, the respondents, and the intensity of their use of touch screen during the Hajj and Umrah rituals (Chi-square=**82.537**;  $P < 0.000$ ;  $DF=2$ ). To determine the strength of the relationship, the researcher ran Cramer’s test. The test showed that there is a strong relationship (Cramer’s test (Cramer’s  $V = 0.454$ ;  $P < 0.001$ ).

From a closer look at the contents of Table 10, one can note that there are significant differences between the economic level of the respondents, and the intensity of their use of interactive touch screen technology (Chi-square=49.69237;  $P < 0.001$ ;  $DF=4$ ). To determine the strength of the relationship, the researcher ran Cramer’s test. The test showed that there is a moderate relationship (Cramer’s  $V = 0.352$ ;  $P < 0.001$ ).

Table 8. Additional levels of contribution

Level of contribution	Intensive		Middle		Low		Total	
	N	%	N	%	N	%	N	%
Contributed to a large extent	34	42.5	88	57.9	54	32.1	176	44
Contributed to a middle extent	32	40	60	39.5	84	50	176	44
Contributed to a low extent	14	17.5	4	2.6	30	17.9	14	12
Total	80	100	152	100	168	100	400	100

Table 9. The distribution of the respondents according to the gender and the intensity of their use of interactive touch screen technology

Gender	Males		Females		Total	
Intensity of Use	N	%	N	%	N	%
One time	42	21	126	63	168	42
From two to five times	92	46	60	30	152	38
Five times and more	66	33	14	7	80	20
Total	200	100	200	100	400	100

Table 10. The distribution of the respondents according to their income and the intensity of their use of touch screen

Level	Low		Middle		High		Total	
Intensity of Use	N	%	N	%	N	%	N	%
1time	56	62.2	50	59.5	62	27.4	168	42
2-5 times	26	28.9	26	31	100	44.2	152	38
More than 5 times	8	8.9	8	9.5	64	28.3	80	20
Total	90	100	84	100	226	100	400	100

Table 11 showed that there are weak significant differences between the respondents' age and the intensity of their use of interactive touch screen technology, (Chi-square=34.209;  $P < 0.000$ ;  $DF=4$ ). To determine the strength of the relationship, the researcher ran Cramer's test. The test showed that there is a weak relationship (Cramer's  $V = 0.292$ ;  $P < 0.001$ ). According to the previous analysis the data suggest accepting the second research hypothesis which stated that there are statistically significant differences between the intensity of the pilgrims, and the Umrah performer's use of touch screen with their demographic variables (gender - economic level - age). Hence, we can say that the second hypothesis has been fully accomplished.

Table 12 indicates that there are weak significant differences between the respondents' gender (male and females) and the degree of contribution of the contents presented on the interactive touch screens to increasing the awareness information of the respondents (Chi-square=17.152;  $P < 0.001$ ;  $DF=2$ ). To determine the strength of the relationship, the researcher ran Cramer's test. The test showed that there is a weak relationship (Cramer's  $V = 0.207$ ;  $P < 0.001$ ).

From a closer look at the contents of Table 13, one can note that there are weak significant differences between the economic level of the respondents, and the degree of contribution of the contents presented on the interactive touch screens to increasing the awareness information of the

Table 11. The distribution of the of the respondents according to their age, and the intensity of their use of interactive touch screen technology.

Level	20 – 30		30 – 40		40 or more		Total	
	N	%	N	%	N	%	N	%
One time	122	43.6	28	45.2	18	31	168	42
From two to five times	118	42.1	8	12.9	26	44.8	152	38
Five times and more	40	14.3	26	41.9	14	24.1	80	20
<b>Total</b>	<b>280</b>	<b>100</b>	<b>62</b>	<b>100</b>	<b>58</b>	<b>100</b>	<b>400</b>	<b>100</b>

Table 12. The distribution of the of the respondents according to their gender

Gender	Males		Females		Total	
	N	%	N	%	N	%
Degree of Contribution						
Contributed to a large extent	106	53	70	35	176	44
Contributed to a middle extent	80	40	96	48	176	44
Contributed to a weak extent	14	7	34	17	48	12
<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>	<b>100</b>	<b>400</b>	<b>100</b>

Table 13. The distribution of the respondents according to their income

Level	Low		Middle		High		Total	
	N	%	N	%	N	%	N	%
Degree of Contribution								
Contributed to a large extent	36	40	26	31	114	50.4	176	44
Contributed to a middle extent	40	44.4	40	47.6	96	42.5	176	44
Contributed to a weak extent	14	15.6	18	21.4	16	7.1	48	12
<b>Total</b>	<b>90</b>	<b>100</b>	<b>84</b>	<b>100</b>	<b>226</b>	<b>100</b>	<b>400</b>	<b>100</b>

respondents (Chi-square=17.813;  $P < 0.001$ ;  $DF=4$ ). To determine the strength of the relationship, the researcher ran Cramer’s test. The test showed that there is a weak relationship (Cramer’s  $V = 0.211$ ;  $P < 0.001$ ).

From a closer look at the contents of Table 14, one can note that there are weak significant differences between the respondents’ age and the degree of contribution of the contents presented on the interactive touch screens to increasing the awareness information of the respondents (Chi-square=35.603;  $P < 0.001$ ;  $DF=4$ ). To determine the strength of the relationship, the researcher ran Cramer’s test. The test showed that there is a weak relationship (Cramer’s  $V = 0.298$ ;  $P < 0.001$ ). According to the previous analysis the data suggest accepting the third research hypothesis which stated that there are statistically significant differences between the degree to which the contents presented by interactive touch screens contribute to increasing the respondent’s information with their demographic variables (gender - socioeconomic level - age). Hence, we can say that the third hypothesis has been fully accomplished.

Table 15 showed that there is a positive statistically significant correlation between the degree of confidence of the pilgrim, and the Umrah performer in the topics that are published through the

Table 14. The distribution of the of the respondents according to their age

Level	20 – 30		30 – 40		40 or more		Total	
	N	%	N	%	N	%	N	%
Contributed to a large extent	114	40.7	38	61.3	24	41.4	176	44
Contributed to a middle extent	136	48.6	24	38.7	16	27.6	176	44
Contributed to a weak extent	30	10.7	0	0	18	31	48	12
<b>Total</b>	<b>280</b>	<b>100</b>	<b>62</b>	<b>100</b>	<b>58</b>	<b>100</b>	<b>400</b>	<b>100</b>

Table 15. The relationship between the degree of confidence of the respondents, in the topics that are published through touch screen and the degree of the contribution presented on the interactive touch screens to increasing the awareness information of the respondents.

Degree contribution	High		Middle		Low		Total	
	N	%	N	%	N	%	N	%
Contributed to a large extent	84	45.2	74	48.4	4	36.4	162	<b>46.3</b>
Contributed to a middle extent	89	47.8	55	35.9	4	36.4	148	<b>42.3</b>
Contributed to a low extent	13	7	24	15.7	3	27.3	40	<b>11.4</b>
<b>Total</b>	<b>186</b>	<b>100</b>	<b>153</b>	<b>100</b>	<b>11</b>	<b>100</b>	<b>350</b>	<b>100</b>

interactive touch screen technology, the degree of the contents presented on the interactive touch screens to increasing the awareness information of the respondents (Chi-square=11.385;  $P < 0.05$ ;  $DF=4$ ). This result indicates that the degree of confidence of the respondents in the topics that are published through the touch screen affects the degree of the contribution of the contents presented in increasing the information of their awareness and guidance. This means that the respondents who trust the topics that are published through the interactive touch screen technology to a large degree will have more educational information and guidance; thus, the greater the degree of confidence of the pilgrim and the Umrah performer in the topics that are published through the technology of interactive touch screens, the greater the degree of the contribution of the contents presented in increasing their awareness and guidance information. According to the previous analysis, the data suggests accepting the fourth research hypothesis which stated that there is a statistically significant correlation between the degree of confidence of the pilgrims and Umrah performers in the topics that are published through touch screen and the degree of the contribution of the presented contents in increasing their awareness and guidance. Hence, we can say that the fourth hypothesis has been fully accomplished.

## DISCUSSIONS AND CONCLUSION

Many reasons were taken into consideration in conducting the current study. First, to examine the effective use of interactive touch-screen technology by pilgrims and the umrah performers during the Hajj and Umrah rituals. Second, to break new ground in new technology research. Interactive touch screen technology is rapidly increasing in popularity and widespread use. This has attracted many scholars to study the use and effects of touch screens in many fields. Thirdly, this study is important as it addresses the relative scarcity of touch-screen technology studies in religious tourism and pilgrimage, which illustrates the importance of the current study. Furthermore, the current study also contributes to the scarce literature on the role of touch screens usage by pilgrims and the umrah

performers, during the Hajj and Umrah rituals . Needless to say, despite growing interest in touch screens over the last few years all over the world, its application has been limited in the Arab World. The present study is also the first study examined the usage of touch screens by pilgrims and the umrah performers during the Hajj and Umrah rituals. The following conclusions can be drawn from the findings outlined above.

## **Main Findings**

This study has substantiated some of the conclusions and speculations of number of previous studies. For example, many of the results reported herein are consistent with several previous studies. It can be said that some interesting results emerged from this study. First, most of the respondents are using touch screens during the Hajj and Umrah rituals. Nearly, 79.5% of participants have gotten awareness information from touch screens during the Hajj and Umrah rituals. This means that that the bulk of pilgrims and the umrah performers are active and heavy users on using the interactive touch screens technology. This result is in accordance with the findings of numerous previous studies (Shape, A. 2021; Toh, et al., 2020; and Lauren, 2018). The results showed that respondents are using touch screens to serve various purposes but increases their religious information and knowing the correct rituals of Hajj and Umrah are the highest purposes for using touch screens. The interesting result that emerged from this study was that respondents use touch screens mainly ‘ to know how to perform the rituals correctly’. Moreover, the results showed that “touch screen has information that helps me” is the most significant factor which attract the pilgrims and the umrah performers to use touch screens. The results confirmed that there’s an increase in the percentage of respondents’ confidence (87.5%) in the topics that are published through interactive touch screens. It is interesting to note that the content of the topics that were presented by the interactive touch screens led to an increase in the information of the awareness of pilgrims and Umrah pilgrims by 80%. This result is in line with Mohamed (2015) who found that Brewster et al (2008), touchscreen technology is becoming ever so common with manufacturers and users and is on the rise as a source of information and awareness especially during mass meetings. Regarding the reasons of touch screens during the Hajj and Umrah rituals, the results indicated that respondents are using touch screens for various purposes, but “It is easy to use” came first with a relative importance of (84%), followed by “It has simple information” which ranked second with a relative importance of (81.5%), and “It uses pictures, sound and motion” ranked third with a relative importance of (80.8%). Regarding the results of testing research hypotheses, findings generally support Hypothesis 1, which stated that “There is a significant correlation between the intensity of the pilgrims and Umrah performers, use of touch-screen and the degree to which the proposed contents contribute to increasing their awareness and guidance information”. Likewise, the results confirmed that that there are statistically significant differences between the intensity of the pilgrims, and the Umrah performer’s use of touch screen with their demographic variables (gender - economic level - age).

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