A Proposed Framework for Studying the Impact of Augmented Reality Technology on the Tourism Experience
(An Applied Study on the Tourism Sector in Egypt)

A Research Extracted from a PHD Thesis titled:

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The research objectives: Egypt is one of the most prominent tourist countries in the world. The tourism sector is one of the most important sectors in Egypt, because it represents one of the most significant sources of national income, and it has a significant impact on the Egyptian economy. The religious tourism sector is one of the important niche tourism segments in Egypt. The religious tourism has an additional advantage of being resilient to political instability, compared to the other niche tourism segments in Egypt. The "Religions Complex area" in Egypt is one of the most important religious historical sites in Egypt, because the many different Islamic, Christian and Jewish archaeological sites on its land (such as: Amr ibn al-As Mosque, the Hanging Church, and the Jew Temple). Therefore, the objectives of this research were to:

1- Determine the problems facing tourists regarding tourist guiding methods (with or without human tour guide) in the "Religions Complex" area (by conducting exploratory or pilot study in the "Religions Complex" area in Egypt).
2- Design and develop an augmented reality (AR) application as a proposed solution (to solve some of the problems revealed in the pilot study), and as a marketing initiative to support the religious tourism and the "Religions Complex" area in particular, and to support the Egyptian tourism in general, especially after the many internal and external challenges that Egypt witnessed during the past years (from 2011).
3- Evaluate the designed augmented reality (AR) application to ensure that its ability to solve the problems revealed in the pilot study, and also to measure its benefits in enhancing the tourists' experience (memorable tourism experience MTE) in the Religions Complex area, thus supporting the Egyptian tourism in general, and the "Religions Complex" and the religious tourism in particular.

The research Methodology: to achieve the research objectives, the researcher designed and developed the (Religions Complex AR app) with the help of an Egyptian company specialized in designing the AR and VR applications. Then, the researcher evaluated this AR application by developing a proposed framework to study the impact of using this AR app on the tourists' experience (memorable tourism experience MTE) in the Religions Complex area. The methodology used to evaluate the (Religions
Complex AR app) was based on an experimental approach and a quantitative approach. The research population included all tourists (whether international or local tourists) who visited the tourism destination which known as the (Religions Complex in Old Cairo area) during the period of data collection. The researcher distributed the questionnaires to a convenient sample of the international and local tourists (who visited the Religions Complex area during the period of data collection) after their experience to the (Religions Complex AR app). The data were collected over a period of two months (from the beginning of November 2023 to the end of December 2023). The sample size was (384), and a total of (293) completed questionnaires were collected representing an overall response rate of 76.3%.

**The research results:** the researcher concluded that:

1- The designed AR application (Religions Complex AR app) can be used as an alternative or complement to the human tour guides, thus solving some of the problems (revealed in the pilot study) facing tourists regarding tourist guiding methods in the “Religions Complex area”, such as the shortage of human tour guides, and the problem of insufficient information facing tourists with human tour guides.

2- The designed AR application (Religions Complex AR app) enhanced the tourists' experience (memorable tourism experience MTE) in the Religions Complex area, thus supporting the Egyptian tourism in general, and the "Religions Complex" and the religious tourism in particular.

**Keywords:** The augmented reality (AR) technology, Memorable tourism experience (MTE), Tourism Sector in Egypt, Religions Complex area, Religions Complex AR app.
1/1 The introduction.

The AR is a technology that can combine real and virtual objects and integrate them into the real environment. So, the AR is a variation of virtual reality technology (Dogan, Dilek & Kozbe, 2018, p.6127). It is a system that integrates digital contents (such as, texts, images, videos, and 3D objects) with the user’s perception of the real world, and through the use of smart glasses, tablet, and smartphone (Recupero, Talamo, Triberti & Modesti, 2019, p.2).

The experience economy concept of Pine & Gilmore (1998) has been introduced to enhance the business performance across a wide range of industries, including tourism and hospitality (Oh, Fiore & Jeoung, 2007, p.119). So, according to the experience economy concept, the paradigm of tourism business has been shifted from focusing on the product or service itself to focusing on enhancing the tourist’s experience and making it memorable (Jung, Dieck, Lee & Chung, 2016, p.4). The tourism experience in a particular destination is defined as all events and activities offered to tourists which become the source of value and evaluations for the destination (Oh, Fiore & Jeoung, 2007, p.119). So, the memorable tourism experience MTE is constructed from the tourism experiences and based on the tourist’s evaluation of the experience (Rasoolimanesh, Seyfi, Hall & Hatamifar, 2021, p.3). Kim, Ritchie & McCormick (2012, p.13) defined the MTE as “a tourism experience positively remembered and recalled after the event has occurred.” In other words, the tourism experience does not necessarily translate into a memorable experience, and the tourism service providers today should deliver a memorable tourism experience for tourists because the satisfaction and quality alone are no longer adequate descriptions of the experience that tourists are looking for.

The AR technology is useful and can be used in different areas such as education, tourism, manufacturing, marketing, fashion, and healthcare (El Filali & Krit, 2018, p.107). In the context of the tourism industry, AR technology has many benefits such as providing tourists with more knowledge and information about the destinations, supporting the explanation of the heritage sites, helping tourists to learn in different and interactive way, and keeping the heritage sites up to date and supporting the value of heritage sites by adding a competitive advantage. So, AR can
enhance the tourist's experience and make it an interactive and memorable experience (Marie & Zaki, 2016, pp.30-31). Recupero, Talamo, Triberti & Modesti (2019, p.8) stated that the AR can enhance the tourism experience and stimulate the creation of a memorable tourism experience because the augmentation of visitors’ real environment with a visual and auditory information can help to discover the intangible dimensions of the tangible heritage, and integrate into virtual scenarios from the past with the illusion of being there. Thus, tourism destinations can use AR technology to create unique and memorable experience (Dieck, Jung & Rauschnabel, 2018, p.15).

Against this background, the researcher designed and developed an AR application (Religions Complex AR app). Then, the researcher evaluated this AR app by studying the impact of using this AR app on the tourists' experience (memorable tourism experience MTE), by applying on the tourism sector in Egypt (Religious tourism).

1/2 The research problem.
1/2/1 The practical problem:
1/2/1/1 The problems related to the tourism sector in Egypt.

Egypt is one of the most prominent tourist countries in the world. The tourism sector is very important for Egypt, because it represents one of the most significant sources of national income, and it has a significant impact on the Egyptian economy. The tourism sector provides annual dollar revenues, the foreign currency returns, and it helps in reducing the unemployment in Egypt by employing a wide segment of the workforce. So, the tourism sector has a significant impact on the gross domestic product GDP. Also, there are many types of tourism in Egypt such as: cultural tourism, recreational tourism, eco-tourism, medical tourism, sports tourism, festival tourism, conference tourism, and religious tourism (Elnagar and Derbali, 2020, p. 45-46).

Over the past years, the tourism sector in Egypt has suffered from many internal (such as 2011 revolution and 2013 revolution) and external challenges (such as the terrorist attack on the Russian plane over Sinai in 2015 and Covid-19 in 2020) that negatively affected its performance and made it suffer from instability in its revenues, and a decrease in the foreign
currency reserves. As shown in (Figure 1/1) and (Table 1/1), the number of arrivals to Egypt reached its peak in 2010 with a total 14.7 million tourists and a total income of $ 12.518 billion in the country's economy. The number of tourists’ arrival has not yet recovered to the same peak as 2010 due to the many challenges which the tourism sector in Egypt has suffered during a period from 2011 to 2016, as well as the Covid-19 crisis in 2020. The first challenge is the 2011 revolution, Egypt lost about 5 million tourists (-13.3%) and about 4 billion dollars (-8.6%) compared to 2010, with a total 9.8 million tourists and a total income of $ 8.726 billion in the country's economy. The second challenge is the 2013 second revolution, Egypt lost more than 2 million tourists (-8.2%) and about 5 billion dollars (-11%) compared to 2012, with a total 9.8 million tourists and a total income of $ 5.913 billion in the country's economy. The third challenge is in 2016 due to the fall of a Russian plane over Sinai in 2015, and Egypt lost more than 4 million tourists (-34.8%) and about 3 billion dollars (-48%) compared to 2015, with a total 5.2 million tourists and a total income of $ 3.1 billion in the country's economy. The final challenge is the Covid-19 crisis, Egypt lost more than 10 million tourists (-58.6%) and about 9 billion dollars (-48.9%) compared to 2019, with a total 3.7 million tourists and a total income of $3.918 billion in the country's economy (Selim, Aidrous & Semenova, 2020, p. 1149-1150).

Figure (1/1) Dynamics of arrivals and income from tourist arrivals in Egypt for (2010-2020)
Table (1/1) Effect of various crises on income from international tourism in Egypt (2010-2020).

<table>
<thead>
<tr>
<th>Year</th>
<th>Crisis</th>
<th>Effect on number of tourists</th>
<th>Effect on tour income</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2011</td>
<td>Revolution (2011)</td>
<td>-13.3%</td>
<td>-8.6%</td>
</tr>
<tr>
<td>2013-2014</td>
<td>Revolution (2013)</td>
<td>-8.2%</td>
<td>-11%</td>
</tr>
<tr>
<td>2015-2016</td>
<td>Terrorist attack on board a Russian plane (2015)</td>
<td>-34.8%</td>
<td>-48%</td>
</tr>
<tr>
<td>2019-2020</td>
<td>Covid-19 2020 year</td>
<td>-58.6%</td>
<td>-48.9%</td>
</tr>
</tbody>
</table>

The Russian-Ukrainian war in 2022 also has a negative impact on the tourism sector in Egypt. Most of the tourists in Egypt were Russians and Ukrainians tourists. They represent the main market for the Egyptian tourism industry, and an essential source of foreign currency returns. But the Russian-Ukrainian war in 2022 led to a decrease in the number of Russian and Ukrainian tourists visiting Egypt which negatively affected the Egyptian tourism industry (Fatouh, Bayoumi & Orloff, 2022, p.89).

Finally, although the tourism sector in Egypt has diverse tourism segments targeting both mass and niche tourism sectors (such as recreational tourism, cultural tourism, eco-based tourism, religious tourism, health tourism, and sports tourism), Egypt relies heavily on mass tourism and specially on two segments of mass tourism: recreational and cultural. Niche tourism is a form of tourism that are done in small groups, as opposed to mass tourism. The niche tourism is less costly, less harmful, more sustainable, and able to generate higher revenues compared to mass tourism. Mass tourism has many environmental problems to the tourism destinations, such as littering, damage, depletion of resources, and pollution. Also, the large numbers of tourists in a given destination could cause major social and cultural problems to the tourists and the locals and the tourism destinations. Given to the increasing competition in the global mass tourism sector, as well as the pre and post COVID-19 challenges facing the tourism sector in Egypt, there is a need to focus on the niche tourism segments such as the religious tourism, especially with the many various Islamic, Christian and Jewish archaeological sites in Egypt, thereby

Against this background, the researcher designed an augmented reality application (Religions Complex AR app) as a marketing initiative to support the Egyptian tourism especially after the many internal and external challenges that Egypt witnessed during the past years (from 2011). The researcher focused on the religious tourism as a niche tourism segment in Egypt, with a particular focus on the "Religions Complex" area, which is considered a place of worship for all religions because the many different Islamic, Christian and Jewish archaeological sites on its land, making it a unique religious tourism destination and one of the most important religious historical sites in Egypt.

1/2/1/2 The pilot study.

The researcher conducted a pilot or exploratory study to gain a more complete understanding of the research problem, and to obtain important information that the researcher could not obtain from the literature review. The researcher conducted a survey and relied on a closed-ended questionnaire that can be answered with “Yes” or “No”. The questionnaires were distributed in two languages (Arabic and English) to a convenience sample of (35) tourists (including international and local tourists) at the tourism destination which known as (The Religions Complex in Old Cairo area). A total of (31) valid questionnaires were collected and analyzed. The researcher relied on the closed questionnaire only because international tourists have different languages, and it is difficult to interview them or analyze their answers with an open-ended questionnaire.

The questionnaire composed of three parts or sections. The first one is concerned with the tourist’ awareness of augmented reality technology. According to the results of some previous studies, AR technology has many benefits for the tourism. So, the researcher in this section had to investigate the extent of tourists' awareness of augmented reality technology in Egypt, to determine whether Egypt can exploit the benefits of AR technology to support the Egyptian tourism especially after the many internal and external challenges that accrued in Egypt during the past years (from 2011). This section included the following two questions:
Section one: awareness of augmented reality technology.
1- Are you aware of the term "Augmented Reality Technology?"
2- Have you ever experienced any augmented reality applications before?

The second section is concerned with the religious tourism in Egypt. According to the results of some previous studies, Egypt relies heavily on mass tourism and specially on two segments of mass tourism: recreational and cultural. And there is a need to focus on the niche tourism segments such as the religious tourism. So, the researcher in this section had to investigate the extent of tourists' interest in visiting any religious places in Egypt, to determine whether Egypt needs to focus on effective marketing initiatives and strategies (such as the use of AR technology) to support the religious tourism as a niche tourism segment. This section included the following two questions:

Section two: religious tourism in Egypt.
1- Have you visited any religious places in Egypt before?
2- Are you interested in visiting any religious places in Egypt?

The third section is concerned with the tourism destination which known as (The Religions Complex in Old Cairo area). The researcher in this section had to investigate the extent of tourists' interest in visiting the "Religions Complex area", and whether tourists face any problems regarding tourist guiding methods (with or without human tour guide) in visiting the religious places in the "Religions Complex area". The researcher believed that studying these problems is important because they may have a negative impact on the tourists' experiences and their future behavioral intentions, and to determine whether AR technology can be used to solve some of these problems. This section included the following questions:

Section three: “Religions Complex”.
1- Have you visited "Religions Complex" before?
   If yes, how many times have you visited "Religions Complex" before ......
2- Are you following a tour guide?
If (No), answer the following:

A) do you feel you need a tour guide?

If (Yes), answer the following:

A) Do you get all information you need from the tour guide?
B) Do you hear most of the explanation demonstrated by the tour guide?
C) The atmosphere of "Religions Complex" is too noisy that you can not hear what the tour guide is saying?
D) Do you feel independent within your group by following the tour guide?
E) Do you feel you need more supplementary information aside the guide narration?
F) Have you read most of the texts and information found in the religious and historical places of "Religions Complex”?

Finally, the researcher concluded the following results:

1- There is a lack of tourists' awareness of augmented reality technology in Egypt. (45.2%) of the pilot study sample were not aware of the term "AR Technology. Also, (80.6%) of the pilot study sample had not experienced any augmented reality applications before (Against this background, this research seeks to increase the tourists' awareness of AR technology. So, the researcher designed and developed an AR application (Religions Complex AR app).

2- The religious tourism in Egypt is very important and there is an interest from tourists to visit the religious places in Egypt. (100%) of the pilot study sample had visited religious places in Egypt before, and (100%) of the pilot study sample had an interest in visiting any religious places in Egypt (Against this background, this research seeks to support the tourism in Egypt and especially the religious tourism as an important niche tourism segment to exploit the interest of tourists in visiting any religious places in Egypt. So, the researcher designed and developed an AR application (Religions Complex AR app) as a marketing initiative to support the religious tourism in Egypt).
3- The “Religions Complex” is one of the most important religious historical sites in Egypt, which is considered a place of worship for all religions because the many different Islamic, Christian and Jewish archaeological sites on its land. However, tourists face some problems regarding tourist guiding methods (with or without human tour guide) in visiting the religious places in the "Religions Complex area". These problems can be summarized as follows:

- There is a shortage of human tour guides. The percentage of tourists who visited the "Religions Complex area" without a human tour guide was (45.2%), and (57.1%) of them needed a tour guide. The researcher believed that this problem is important because they may have a negative impact on the tourists' experiences and their future behavioral intentions such as re-visit intentions, and AR technology is important as it can be used to solve this problem. So, the AR application of this study was designed to be used as an alternative to the human tour guide.

- There are some problems regarding the human tour guides. The percentage of tourists who visited the "Religions Complex area" with a human tour guide was (54.8%), and (35.3%) of them did not obtain all the information they need from the human tour guide. Also, (23.5%) of tourists did not hear most of the explanation demonstrated by the human tour guide, (23.5%) of tourists approved that the atmosphere of "Religions Complex" was too noisy that they could not hear what the human tour guide was saying, (11.8%) of tourists approved that they did not feel independent within their group by following the human tour guide, (47.1%) of tourists approved that they need more supplementary information beside the human tour guide, and (41.2%) of tourists approved that they did not read most of the texts and information found in the religious and historical places of "Religions Complex”. The researcher believed that these problems are important because they may have a negative impact on the tourists' experiences and their future behavioral intentions such as re-visit intentions, and AR technology is important as it can be used to solve this problem. So, the AR application of this study was designed to be used as a complement to the human tour guide (Against this background, this
research seeks to solve some of the problems facing tourists regarding tourist guiding methods (with or without human tour guide) in the "Religions Complex area", to support tourists' memorable experiences in the Religions Complex area. So, the researcher designed and developed an AR application (Religions Complex AR app) that can be used as an alternative or complement to the human tour guides. Then, the researcher evaluated this AR app by studying the impact of using this AR app on the tourists' experience (MTE) in the Religions Complex area).

1/2/2 The theoretical problem:
The religious tourism sector is one of the potential niche segments in Egypt and it is the focus of the Egyptian government over the past years. The religious tourism has an additional advantage of being resilient to political instability. So, it is more secure and stable than the leisure tourism. The Egyptian government has made many efforts to make Egypt a center for the religious tourism (Elbehary, Elsayed, Abdelghany, & Mandour, 2021, p.19).

Although the AR technology has many benefits for the tourism and the heritage sites, none of the Islamic cultural heritage sites in Egypt have been using AR technology. The challenges of using and implementing the AR in the Islamic cultural heritage sites in Egypt included: the lack of awareness and knowledge of AR and its importance for heritage sites, insufficient financial resources that required to adopt and implement AR in the Egyptian cultural heritage sites, the lack of coordination between the responsible authorities, the technical challenges such as: the effectiveness of GPS which affects the tracking system, the problems of AR displays which based on the screens of mobile phones and tablets, and the lack of free internet connection in the cultural heritage sites in Egypt (Marie & Zaki, 2016, p.33).

AR is one of the smart tourism technologies that can be used to achieve many benefits in the tourism industry and enhance the tourism experience, but despite this, few studies have investigated the impact of AR on the memorable tourism experience (Jeong and Shin, 2020, p.1467).
Against this background, the researcher believes that there is a real problem. Therefore, the researcher evaluated the designed AR app (Religions Complex AR app) by studying the impact of using this AR app on the tourists' memorable experience (MTE) in the "Religions Complex" area, which is a unique religious tourism destination and one of the most important religious historical sites in Egypt. In light of this, the research problem can be summarized in the following questions:

1- What is the impact of AR technology on the memorable tourism experience MTE of tourists in the Religions Complex area?

1/3 The research objectives.

The objectives of this research can be summarized as following:

1- Determining the problems facing tourists regarding tourist guiding methods (with or without human tour guide) in the "Religions Complex" area (by conducting exploratory or pilot study in the "Religions Complex" area in Egypt).

2- Designing and developing an AR application (Religions Complex AR app) as a proposed solution to solve some of the problems (revealed in the pilot study), and as a marketing initiative to support tourists' memorable experiences (MTE) in the Religions Complex area, thus supporting the Egyptian tourism in general, and the "Religions Complex" and the religious tourism in particular.

3- Evaluating the designed AR application (Religions Complex AR app) by conducting explanatory study to ensure that the designed AR application (Religions Complex AR app) could solve the problems revealed in the exploratory or pilot study, and also to measure the benefits of this AR app in enhancing the tourists' experience by developing a proposed framework to study the impact of using this AR app on the tourists' experience (memorable tourism experience MTE) in the Religions Complex area.

4- Providing recommendations based on the results of the research that help managers and decision makers in the Egyptian tourism sector in general and in the Religions Complex area in particular, to adopt the use of AR technology to create a memorable tourism experience.
1/4 The research methodology.

The researcher conducted an exploratory or pilot study in the "Religions Complex" area in Egypt, to gain a more complete understanding of the research problem, and to determine whether tourists face any problems regarding tourist guiding methods (with or without human tour guide) in visiting the religious places in the "Religions Complex" area. Then, the researcher designed and developed the (Religions Complex AR app) as a proposed solution to solve some of the problems (revealed in the pilot study), and as a marketing initiative to support tourists' memorable experiences (MTE) in the Religions Complex area, thus supporting the Egyptian tourism in general, and the "Religions Complex" and the religious tourism in particular. Finally, the researcher evaluated the (Religions Complex AR app) to ensure that this AR application could solve the problems revealed in the exploratory or pilot study, and also to measure the benefits of this AR app in enhancing the tourists' experience by developing a proposed framework to study the impact of using this AR app on the tourists' experience (memorable tourism experience MTE) in the Religions Complex area. So, the research variables and measurement tools, the research hypotheses, the research model, and the research population and sample, will be explained as follows:

1/4/1 The research variables and measurement tools.

❖ The independent variable.

The independent variable of this research is the use of the augmented reality technology AR. The augmented reality technology is defined as a system that integrates digital contents (such as, texts, images, videos, and 3D objects) with the user’s perception of the real world, and through the use of smart glasses, tablet, and smartphone (Recupero, Talamo, Triberti & Modesti, 2019, p.2).

To measure the use of the AR in this research, the researcher integrated two models:

1) The first model is (technology acceptance model TAM):

   The researcher depended on TAM to measure the impact of (AR perceptions) on the memorable tourism experience and tourists’ intentions. The researcher depended on three dimensions of TAM to measure the AR perceptions (AR perceived usefulness, AR perceived ease of use, and AR
perceived enjoyment). These dimensions of (AR perceptions) can be defined as follows:

1) AR perceived usefulness: it refers to the degree to which an individual believes that using an AR application is useful and has great value.
2) AR perceived ease of use: it refers to the degree to which an individual believes that using an AR application is easy and free of effort.
3) AR perceived enjoyment: it refers to the degree to which an individual believes that using an AR is fun and not boring.

2) The second model is (model of smart tourism technology STT attributes):

The researcher depended on attributes or dimensions of STTs to measure the impact of (AR attributes) on the memorable tourism experience and tourists’ intentions. The researcher depended on three dimensions or attributes of STTs attributes to measure the AR attributes (interactivity, informativeness, and personalization). These dimensions of (AR attributes) can be defined as follows:

1) Interactivity: it measures the ability of an AR application to enable user to easily control and interact with the content of AR application, or interact with the designed user interface (UI).
2) Informativeness: it measures the ability of an AR application to provide sufficient, relevant, and accurate information, to the user.
3) Personalization: it measures the ability of an AR application to offer tailored responses, information and services, to the user.

❖ The dependent variable.

The dependent variable of this research is the memorable tourism experience MTE. Kim, Ritchie & McCormick (2012, p.13) defined the memorable tourism experience as “a tourism experience positively remembered and recalled after the event has occurred.” In other words, the tourist experience does not necessarily translate into a memorable experience. Rasoolimanesh, Seyfi, Hall & Hatamifar (2021, p.3) stated that the memorable tourism experience is constructed from the tourism experiences and based on the tourist’s evaluation of the experience.
To measure the memorable tourism experience in this research, the researcher depended on the scale of (Kim, Ritchie & McCormick, 2012) which includes the following seven dimensions (hedonism, novelty, local culture, refreshment, meaningfulness, involvement, and knowledge). The researcher excluded the dimension (local culture) because AR experience includes human-technology interaction and there is a lack of human-human interaction. Also, the religious tourism does not represent the local culture of any country. The other six dimensions of MTE can be defined as:

1- Hedonism: it refers to the pleasure feeling and positive emotions associated with an experience such as happiness and excitement. In other words, the positive feeling and emotions that tourists feel during their tourism experience, are regarded as an important component in creating a memorable travel experience which help tourists to clearly remember their experience.

2- Novelty: it refers to experience something new, unique, unexpected or extraordinary. In other words, the new, unique, unexpected or extraordinary events that tourists go through during their tourism experience, are regarded as an important component in creating a memorable tourism experience which help tourists to clearly remember their experience.

3- Refreshment: it refers to the feeling of being refreshed, escaping from the daily routine and stress of work and life. In other words, escaping from routine and stress, and the refreshment feeling that tourists feel during their tourism experience are regarded as an important component in creating a memorable tourism experience which help tourists to clearly remember their experience.

4- Meaningfulness: it refers to the feeling that tourism experience has meaning and value. In other words, the feeling of doing something important or valuable during the tourism experience, are regarded as an important component in creating a memorable tourism experience which help tourists to clearly remember their experience.

5- Involvement: it refers to the tourists’ active performance, participation or physical involvement in travel experiences. In other words, the active participation of tourists and their involvement in events or activities during their tourism experience, are regarded as
an important component in creating a memorable tourism experience which help tourists to clearly remember their experience.

6- Knowledge: it refers to the acquired information and knowledge. In other words, gaining knowledge about a destination, its history, and culture, etc. during the tourism experience, are regarded as an important component in creating a memorable tourism experience which help tourists to clearly remember their experience.

1/4/2 The research hypotheses.

Based on the literature review, the researcher identified the following research hypotheses.

**H1.** The AR technology has a statistically significant positive impact on the memorable tourism experience MTE.

**H1a.** The AR perceptions (AR perceived usefulness, AR perceived ease of use, and AR perceived enjoyment) have a statistically significant positive impact on the memorable tourism experience MTE.

**H1b.** The AR attributes (interactivity, informativeness, and personalization) have a statistically significant positive impact on the memorable tourism experience MTE.

1/4/3 The research model.
1/4/4 The research population and sample.

❖ The research population.

The research population included all tourists (whether international or local tourists) who visited the tourism destination which known as the (Religions Complex in Old Cairo area) during the period of data collection.

❖ The research sample.

The non-probability sampling technique was used. This type of sample was used because there is no sampling frame for the research population and the heterogeneity between the research population.

The researcher distributed the questionnaires to a convenient sample of international and local tourists who visited the Religions Complex area during the period of data collection, after their experience to the AR application (Religions Complex AR app).

❖ The sample size.

The researcher determined the sample size on the basis that the availability of characteristics that required to be studied in the research community is not less than (50%), and the degree of confidence required (95%), and the limits of the standard error (±5%). Accordingly, the sample size is (384)\(^1\).

❖ The procedures of data collection.

The researcher distributed the questionnaires to a convenient sample of international and local tourists who visited the tourism destination which known as the (Religions Complex in Old Cairo area) during the period of data collection. The data were collected over a period of two months (from the beginning of November 2023 to the end of December 2023). Three well-trained research assistants (Egyptian tour guides) helped the researcher in collecting data because the international tourists have different languages and the researcher could not collect data from the international tourists without the help of the three Egyptian tour guides who can speak different languages and can deal with the international tourists and collect data from them. The AR app (Religions Complex AR app) was installed on smartphones used by the researcher and the three assistants. Then, the researcher and the assistants briefly introduced the Religions Complex AR app to the participants and asked them to use it independently. Finally, the researcher and the assistants distributed the
questionnaires to tourists after their experience to the AR application (Religions Complex AR app). A total of (293) completed questionnaires were collected representing an overall response rate of 76.3%.

1/5 The design of the (Religions Complex AR app).

The (Religions Complex AR app) is a smartphone-based AR application. It is an Android application which can be downloaded from "Google play" and installed on Android smartphones to provide users with

(1) The sample size was determined from the following website: www.surveysystem.com.

an AR experience of the "Religions Complex" area. The researcher designed this application with the help of an Egyptian company specialized in designing the AR and VR application. The name of this application on "Google play" is {مجمع الأديان (الواقع المعزز)}. Figure (1/2) shows a screenshot of the application icon on "Google play".

Figure (1/2) Screenshot of the (Religions Complex AR app) icon on "Google play"

The content of this App includes the following;
1- A map of the "Religions Complex" area shown in figure (1/3).
2- 3D models of three religious and archaeological places (Amr ibn al-As Mosque, the Hanging Church, and the Jew Temple).
3- (Sound icons): which include a virtual audio tour guide that provides explanation and information about the three religious and archaeological places (Amr ibn al-As Mosque, the Hanging Church, and the Jew Temple), in Arabic and English language. This virtual audio tour guide
was a recording of an Egyptian tour guide (female tour guide) working in one of the Egyptian tourism companies which work in the field of the international tourism. This Egyptian tourism company agreed to cooperate with the researcher, and allowed the Egyptian tour guide (female tour guide) to cooperate with the researcher and record her explanation of the three religious and archaeological places (Amr ibn al-As Mosque, the Hanging Church, and the Jew Temple), in Arabic and English language.

4- (Images icons): which include images of the three religious and archaeological places (8 images of Amr ibn al-As Mosque, 8 images of the Hanging Church, and 8 images of the Jew Temple).

5- (Videos icons): which include videos for the three religious and archaeological places (one video of Amr ibn al-As Mosque, one video the Hanging Church, and one video the Jew Temple).

Figure (1/3) Map of the "Religions Complex" area in the (Religions Complex AR app)
1/6 How to use the (Religions Complex AR app):

Once the user installs and starts the application, the start page appears which includes an introduction and a (start the experience) button. Figure (1/4) shows a screenshot of the start page.

Figure (1/4) Screenshot of the start page in the (Religions Complex AR app)

Once the user clicks on the (start the experience) button, the user is directed to the main menu which includes three buttons (Arabic, English, and Map button). Figures (1/5) shows a screenshot of the main menu.

Figure (1/5) Screenshot of the main menu in the (Religions Complex AR app)
When the user wants to hear the explanation of the virtual audio tour guide about the three religious and archaeological places (Amr ibn al-As Mosque, the Hanging Church, and the Jew Temple) in Arabic language, the user clicks on the (Arabic) button. But when the user wants to hear the explanation of the virtual audio tour guide about the three religious and archaeological places (Amr ibn al-As Mosque, the Hanging Church, and the Jew Temple) in English language, the user clicks on the (English) button. Finally, when the (Map) button is clicked, a map of the "Religions Complex" area appears. The user should download and print the map of the "Religions Complex" area to start the AR experience. This map can be printed from any printers, and it is a base to put AR content on, where users can hold the "Religions Complex" area map and point their smartphone towards it with the AR app to see the content of the (Religions Complex AR app).

When the (Arabic) or (English) button is clicked, the user's smartphone camera opens. Then, users should point their smartphone camera towards the “Religions Complex" area map. When users point their smartphone camera towards the "Religions Complex" area map in the real world, the virtual audio tour guide provides the user with an introduction about the "Religions Complex" area, and the 3D models of (Amr ibn al-As Mosque, the Hanging Church, and the Jew Temple) appears on the Religions Complex" area map, in addition to sound, images, and videos icons. Finally, the user hears music while using the application. The music effects can create a special AR experience. Figure (1/6) shows a screenshot of the "Religions Complex" area map when the smartphone camera is directed towards it, where the 3D models, in addition to sound, images, and videos icons appear on the "Religions Complex" area map.
Figure (1/6) Screenshot of the "Religions Complex" area map when the smartphone camera is directed towards it

The user can see each 3D model of (Amr ibn al-As Mosque, the Hanging Church, and the Jew Temple) from different angles and interact with each 3D model by enlarging or reducing it. Each 3D model has its own sound, image, and video icons, which appear next to the 3D model. For example, the 3D model of Amr ibn al-As Mosque has its own sound, image, and video icons, which appear next to the 3D model of Amr ibn al-As Mosque. When the sound icon next to the 3D model is clicked, the virtual audio tour guide starts explaining the history of the religious place and providing the user with many information about it. For example, when the sound icon next to the 3D model of Amr ibn al-As Mosque is clicked, the virtual audio tour guide starts explaining the history of Amr ibn al-As Mosque and providing the user with many information about Amr ibn al-As Mosque. Also, when the image icon next to the 3D model is clicked, different images of the religious place appear. For example, when the image icon next to the 3D model of Amr ibn al-As Mosque is clicked, different images of Amr ibn al-As Mosque appear. Figure (1/7) shows screenshots when the image icons next to each 3D model are clicked. Finally, when the video icon next to the 3D model is clicked, a video of the religious place appears. For example, when the video icon next to the 3D model of Amr ibn al-As Mosque is clicked, a video of Amr ibn al-As Mosque...
Mosque appears. Figure (1/8) shows screenshots when the video icons next to each 3D model are clicked.

Figure (1/7) Screenshots when the image icons next to each 3D model are clicked

Figure (1/8) Screenshots when the video icons next to each 3D model are clicked.
1/7 Hypothesis testing and research results.

1/7/1 Regression analysis.

Regression analysis was used to examine the effect relationship (direct relationship) between the research variables.

- **Simple Liner Regression:**

  Simple liner regression was used to examine the impact of AR technology (independent variable) on the memorable tourism experience MTE (dependent variable), as shown in (Table 1/2).

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>β</th>
<th>t. test</th>
<th>F. test</th>
<th>r</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>constant</td>
<td>.800</td>
<td>5.434</td>
<td>0.01**</td>
<td>425.645</td>
<td>0.01**</td>
</tr>
<tr>
<td>Augmented Reality Technology x</td>
<td>.789</td>
<td>20.631</td>
<td>0.01**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to the above table (1/2), it can be concluded that:

- The coefficient of determination (R² = 59.4%), which indicates that the AR technology (independent variable) on the regression model explains (59.4%) of the total change in the memorable tourism experience MTE (mediator variable).

- The correlation coefficient (r= 0.771) at a level significantly less than (0.01), which indicates that there is a significant positive relationship between AR technology and the memorable tourism experience MTE.

- The equation of regression model (MTE = 0.800 + 0.771 AR Technology).

- The value of (T-test = 20.631) at a level significantly less than (0.01), which indicates that all dimensions of AR technology have a significant impact on the memorable tourism experience MTE.

- The value of (F-test = 425.645) at a level significantly less than (0.01), which indicates the quality of the significant impact of the regression model on the (memorable tourism experience MTE), or the significance of the regression model as a whole in explaining the amount of the variation in the memorable tourism experience MTE (by comparing the model’s fit with a baseline model known as the null model).

- According to the above results, **H1** is accepted, as follows:
**H1.** The AR technology has a statistically significant positive impact on the memorable tourism experience MTE.

1/7/1/1 **Testing the first sub-hypotheses:**

- **Simple Liner Regression:**

  Simple liner regression was used to examine the impact of AR perceptions (independent variable 1) on the memorable tourism experience MTE, as shown in (Table 1/3).

**Table (1/3): Simple liner regression to the impact of AR perceptions (independent variable 1) on the MTE**

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>β</th>
<th>t. test</th>
<th>F. test</th>
<th>r</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Value</td>
<td>Sig.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>constant</td>
<td>1.191</td>
<td>7.692</td>
<td>0.01**</td>
<td>292.650</td>
<td>0.01**</td>
</tr>
<tr>
<td>Augmented reality perceptions</td>
<td>.681</td>
<td>17.107</td>
<td>0.01**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** significant level 0.01

According to the above table (1/3), it can be concluded that:

- The coefficient of determination (R² = 50.1%), which indicates that the AR perceptions (independent variable 1) on the regression model explains (50.1%) of the total change in the memorable tourism experience MTE (mediator variable).

- The correlation coefficient (r= 0.708) at a level significantly less than (0.01), which indicates that there is a significant positive relationship between AR perceptions (independent variable 1) and the memorable tourism experience MTE.

- The equation of regression model (MTE = 1.191 + 0.708 AR perceptions).

- The value of (T-test = 17.107) at a level significantly less than (0.01), which indicates that all dimensions of AR perceptions have a significant impact on the memorable tourism experience MTE.

- The value of (F-test = 292.650) at a level significantly less than (0.01), which indicates the quality of the significant impact of the regression model on the (memorable tourism experience MTE), or the significance of the regression model as a whole in explaining the amount of the variation in the memorable tourism experience MTE (by comparing the model’s fit with a baseline model known as the null model).
Simple linear regression was used also to examine the impact of AR attributes (independent variable 2) on the memorable tourism experience MTE, as shown in (Table 1/4).

Table (1/4): Simple linear regression to the impact of AR attributes (independent variable 2) on the MTE

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>β</th>
<th>t. test</th>
<th>F. test</th>
<th>r</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>value</td>
<td>sig.</td>
<td>value</td>
<td>sig.</td>
</tr>
<tr>
<td>constant</td>
<td>1.316</td>
<td>9.016</td>
<td>0.01**</td>
<td>299.138</td>
<td>0.01**</td>
</tr>
<tr>
<td>Augmented reality attributes x2</td>
<td>.659</td>
<td>17.296</td>
<td>0.01**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** significant level 0.01

According to the above table (1/4), it can be concluded that:
- The coefficient of determination ($R^2 = 50.7\%$), which indicates that the AR attributes (independent variable 2) on the regression model explains (50.7%) of the total change in the memorable tourism experience MTE (Mediator variable).
- The correlation coefficient ($r=0.712$) at a level significantly less than (0.01), which indicates that there is a significant positive relationship between AR attributes (independent variable 2) and the memorable tourism experience MTE.
- The equation of regression model ($MTE = 1.316 + 0.712 \times AR$ attributes).
- The value of (T-test = 17.296) at a level significantly less than (0.01), which indicates that all dimensions of AR attributes have a significant impact on the memorable tourism experience MTE.
- The value of (F-test = 299.138) at a level significantly less than (0.01), which indicates the quality of the significant impact of the regression model on the (memorable tourism experience MTE), or the significance of the regression model as a whole in explaining the amount of the variation in the memorable tourism experience MTE (by comparing the model’s fit with a baseline model known as the null model).
Multiple Regression:

Multiple regression was used to examine the impact of the dimensions of AR perceptions (AR perceived usefulness, AR perceived ease of use, and AR perceived enjoyment) on the memorable tourism experience MTE, as shown in (Table 1/5).

Table (1/5): Multiple regression to the impact of the dimensions of AR perceptions (AR perceived usefulness, AR perceived ease of use, and AR perceived enjoyment) on the MTE

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>β</th>
<th>t. test</th>
<th>F. test</th>
<th>r</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Value</td>
<td>Sig.</td>
<td>Value</td>
<td>Sig.</td>
</tr>
<tr>
<td>Constant</td>
<td>1.198</td>
<td>7.751</td>
<td>0.01**</td>
<td>99.222</td>
<td>0.01**</td>
</tr>
<tr>
<td>1- AR Perceived Usefulness</td>
<td>0.239</td>
<td>5.085</td>
<td>0.01**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2- AR Perceived Ease of Use</td>
<td>0.270</td>
<td>5.340</td>
<td>0.01**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3- AR Perceived Enjoyment</td>
<td>0.382</td>
<td>7.804</td>
<td>0.01**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** significant level 0.01

According to the above table (1/5), it can be concluded that:

- The coefficient of determination (R² = 50.7%), which indicates that the AR perceptions (independent variable 1) on the regression model explains (50.7%) of the total change in the memorable tourism experience MTE (Mediator variable).

- The correlation coefficient (r= 0.712) at a level significantly less than (0.01), which indicates that there is a significant positive relationship between AR perceptions (independent variable 1) and the memorable tourism experience MTE.

- The equation of regression model (MTE = 1.198 + 0.382 AR Perceived Enjoyment + 0.270 AR Perceived Ease of Use + 0.239 AR Perceived Usefulness).

- The value of (T-test = 7.804 AR Perceived Enjoyment, 5.340 AR Perceived Ease of Use, and 5.085 AR Perceived Usefulness) at a level significantly less than (0.01), which indicates that all dimensions of AR perceptions have a significant impact on the memorable tourism experience MTE.

- The value of (F-test = 99.222) at a level significantly less than (0.01), which indicates the quality of the significant impact of the regression model on the (memorable tourism experience MTE), or the significance of the regression model as a whole in explaining the amount of the
variation in the memorable tourism experience MTE (by comparing the model’s fit with a baseline model known as the null model).

- According to the above results, **H1a** is accepted, as follows:

**H1a.** The AR perceptions (AR perceived usefulness, AR perceived ease of use, and AR perceived enjoyment) have a statistically significant positive impact on the memorable tourism experience MTE.

Multiple regression was used also to examine the impact of the dimensions of AR attributes (interactivity, informativeness, and personalization) on the memorable tourism experience MTE, as shown in (Table 1/6).

**Table (1/6): Multiple regression to the impact of the dimensions of AR attributes (interactivity, informativeness, and personalization) on the MTE**

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>β</th>
<th>t. test</th>
<th>F. test</th>
<th>r</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Value</td>
<td>Sig.</td>
<td>Value</td>
<td>Sig.</td>
</tr>
<tr>
<td>Constant</td>
<td>1.322</td>
<td>9.037</td>
<td>0.01**</td>
<td>100.193</td>
<td>0.01**</td>
</tr>
<tr>
<td>1-AR Interactivity</td>
<td>0.307</td>
<td>6.476</td>
<td>0.01**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-AR INformativeness</td>
<td>0.347</td>
<td>6.919</td>
<td>0.01**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-AR Personalization</td>
<td>0.244</td>
<td>5.129</td>
<td>0.01**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to the above table (1/6), it can be concluded that:

- The coefficient of determination (R² = 51%), which indicates that the AR attributes (independent variable 2) on the regression model explains (51%) of the total change in the memorable tourism experience MTE (Mediator variable).

- The correlation coefficient (r= 0.714) at a level significantly less than (0.01), which indicates that there is a significant positive relationship between AR attributes (independent variable 2) and the memorable tourism experience MTE.

- The equation of regression model (MTE = 1.322 + 0.347 AR Informativeness + 0.307 AR Interactivity + 0.244 AR Personalization).

- The value of (T-test = 6.919 AR Informativeness, 6.476 AR Interactivity, and 5.129 AR Personalization) at a level significantly less than (0.01), which indicates that all dimensions of AR attributes have a significant impact on the memorable tourism experience MTE.

- The value of (F-test = 100.193) at a level significantly less than (0.01), which indicates the quality of the significant impact of the regression model on the (memorable tourism experience MTE), or the significance
of the regression model as a whole in explaining the amount of the variation in the memorable tourism experience MTE (by comparing the model’s fit with a baseline model known as the null model).

- According to the above results, **H1b** is accepted, as follows:

  **H1b. The AR attributes (interactivity, informativeness, and personalization) have a statistically significant positive impact on the memorable tourism experience MTE.**

**1/6 The research recommendations.**

1- Solving some of the problems (revealed by pilot study) facing tourists regarding tourist guiding methods (with or without human tour guide) in the "Religions Complex" area (such as the shortage of human tour guides, and the problem of insufficient information facing tourists with human tour guides), because these problems may have a negative impact on the tourists' experiences in the Religions Complex area.

2- Using the designed AR application (Religions Complex AR app) which can be used as an alternative or complement to the human tour guides, thus solving some of the problems (revealed in the pilot study) facing tourists regarding tourist guiding methods (with or without human tour guide) in the “Religions Complex area”.

3- Using the designed AR application (Religions Complex AR app) to exploit the benefits of this AR application in enhancing tourists' experience (memorable tourism experience MTE) in the Religions Complex area, thus supporting the religious tourism and the "Religions Complex" area in particular.

4- Designing and developing many AR applications in the tourism sector, and encouraging the different tourism destinations to adopt and implement the AR, in order to exploit the benefits of AR technology in the tourism sector and support the Egyptian tourism specially after the many internal and external challenges that accrued in Egypt during the past years (From 2011).

5- Encouraging researchers and academics to conduct further studies and research on the use of AR technology in tourism to determine its potential advantages. These studies provide useful information and ideas for academics and practitioners alike.
A Proposed Framework for Studying the Impact

Esraa Najeh Ebrahim Mostafa

أهداف البحث:

أعتبمر مصر من أبرز الدول السياحية في العالم. ويعد قطاع السياحة من أهم القطاعات في مصر، لأنه يمثل أحد أهم مصادر الدخل القومي، والذي له تأثير كبير على الاقتصاد المصري. ويعتبر قطاع السياحة الدينية أحد أهم قطاعات السياحة المتخصصة في مصر، والذي يتمتع بميزة إضافية تمثل في القدرة على مواجهة عدم الاستقرار السياسي مقارنة بقطاعات السياحة المتخصصة الأخرى في مصر.

وقد تعتبر "منطقة مجمع الأديان" في مصر من أهم الموائل التاريخية الدينية في مصر، وذلك لكثرة الأماكن الأثرية الإسلامية والنسيلة واليهودية المختلفة الموجودة على أرضها (مثل: مسجد عمرو بن العاص، الكنيسة المعلقة، والمعبد اليهودي).

وتتمثل أهداف هذا البحث فيما يلي:

1. تحديد المشاكل التي تواجه السياح فيما يتعلق بطرق الإرشاد السياحي (سواء كانوا مع مرشد سياحي بشري، أو بدون مرشد سياحي بشري) في منطقة "مجمع الأديان" (من خلال إجراء دراسة استكشافية أو استطلاعية في منطقة "مجمع الأديان" في مصر).

2. تصميم وتطوير نظام الواقع المعزز كحل مقترح (حل بعض المشاكل التي كشفتها دراسة الإستطلاعية)، وكفاءة وفعالية التوصل إلى الحلول السياحية الدينية ب."مجمع الأديان" بشكل خاص، ودعم السياحة المصرية بشكل عام، خاصة بعد العديد من التحديات الداخلية والخارجية التي شهدتها مصر خلال السنوات الماضية (منذ عام 2011).

3. تقييم تطبيق نموذج الواقع المعزز المصمم للتأكد من قدرته على حل المشكلات التي كشفتها دراسة الإستطلاعية، وكذلك تقييم فوائده في تعزيز جذب السياح (التجربة السياحية التي لا تنسى MTE) في منطقة مجمع الأديان، وبالتالي دعم السياحة المصرية بشكل عام، ودعم "مجمع الأديان" والسياحة الدينية بشكل خاص.

منهجية البحث:

لتحقيق أهداف البحث، قام الباحث بتصميم وتطوير (تطبيق مجمع الأديان بالواقع المعزز) وذلك بمساعدة إحدى الشركات المصرية المتخصصة في تصميم تطبيقات الواقع المعزز والواقع الافتراضي. ثم قام الباحث بتطبيق هذا التطبيق من خلال تطوير إطار مثير لدراسة تأثير استخدام هذا التطبيق على تجربة السياح (التجربة السياحية التي لا تنسى MTE) في منطقة مجمع الأديان، واعتماد المنهج المستخدم لـ (تطبيق مجمع الأديان بالواقع المعزز) على المنهج التجريبي والمنهجي الكمي. تشمل المجتمع الباحث جميع السياح (سواء السياح المحليين أو الدوليين) الذين قاموا بزيارة وجهة السياحية المعرفة باسم("مجمع الأديان من منحة القاهرة القديمة") خلال فترة جمع البيانات.

وبالإضافة إلى ذلك، قام الباحث بتنظيم قوات الإستقصاء على منحة مسيرة (جمع الفئة العمرية 384 مفردة) من السياح المحليين والدوليين (الذين زاروا منحة الأديان خلال فترة جمع البيانات) بعد تجربتهم لـ (تطبيق مجمع الأديان بالواقع المعزز). تم جمع البيانات على مدى شهرين من بداية نوفمبر 2023 إلى نهاية ديسمبر 2023 والحصول على (293) قائمة استقصاء صالحة للتحليل الإحصائي بمعدل استجابة بلغ 76.3%.
نتائج البحث: استنتج الباحث مايلي:

1. يمكن استخدام تطبيق الواقع المعزز المصمم (تطبيق مجمع الأديان بالواقع المعزز) كبديل أو مكمل لعمل المرشدين السياحيين البشريين، بالتالي حل بعض المشاكل (التي كشفت عنها الدراسة الاستطلاعية) التي تواجه السياح فيما يتعلق بطرق الإرشاد السياحي في "مجمع الأديان"، مثل مشكلة نقص المرشدين السياحيين البشريين، ومشكلة عدم كفاية المعلومات التي تواجه السياح مع المرشدين السياحيين البشريين.

2. دعم تطبيق الواقع المعزز المصمم (تطبيق مجمع الأديان بالواقع المعزز) تجربة السياح في منطقة مجمع الأديان، مما يدعم السياحة المصرية بشكل عام، ويدعم "مجمع الأديان" والسياحة الدينية بشكل خاص.

الكلمات المفتاحية: تكنولوجيا الواقع المعزز AR، التحفة السياحية التي لا تنسى MTE، القطاع السياحة في مصر، منطقة مجمع الأديان، تطبيق مجمع الأديان بالواقع المعزز.
List of References:


