

Digitalization of heritage buildings and its role in revitalizing Kuwait's cultural tourism

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Abstract:

Digital transformation is one of the most important phenomena reshaping various sectors today, including the tourism sector, and cultural tourism is one of the most prominent areas that have been positively affected by digital transformation. The digital transformation of heritage buildings is of great importance and plays a pivotal role in enhancing the visitor experience as well as an opportunity to redefine how cultural heritage can be preserved and promoted heritage sites and enhance the tourist experience. Thanks to technological developments such as virtual reality, augmented reality, and artificial intelligence, it has become possible to provide rich and innovative cultural content to tourists, which contributes to enhancing their interaction with cultural heritage. As cultural tourism is one of Kuwait's potential tourist attractions, this digital transformation of heritage buildings will help market and revitalize Kuwait's potential tourist attractions, this digital transformation of heritage buildings will help market and revitalize Kuwait's cultural tourism, as well as help preserve and sustain this heritage for future generations. There is no interest in the use of digital transformation and there is no digital technology for heritage buildings. Here lies the importance of the research in how to use digital technology in promoting heritage buildings and enriching cultural content, which contributes to attracting tourists and stimulating the local economy, as well as facilitating the process of revitalizing and marketing cultural tourism for the State of Kuwait. The research followed a descriptive, analytical and inductive approach through a questionnaire on a sample of specialists in the field of technology or tourism in the State of Kuwait. The research found that there is shortcomings in the use of technology and digital transformation

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in Kuwait and that the infrastructure must be developed first in addition to developing technology through planning, organizing and forming regulations and laws. By using digital transformation, the difficulties facing the marketing, preservation and sustainability of heritage buildings in Kuwait can be overcome and cultural tourism can be revitalized.

Keywords: Digitalization, Heritage buildings, Cultural Tourism, Digital Technology, Marketing.

التحول الرقمي للمباني التراثية ودورها في تنشيط السياحة الثقافية لدولة الكويت

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المخلص:

التحول الرقمي يعد احد أهم الظواهر التي أعادت تشكيل مختلف القطاعات في وقتنا الحالي بما في ذلك قطاع السياحة، حيث تعتبر السياحة الثقافية واحدة من أبرز المجالات التي تأثرت إيجابيا بالتحول الرقمي. ويعتبر التحول الرقمي للمباني التراثية ذا أهمية كبيرة ويلعب دورا محوريا في تعزيز تجربة الزوار كذلك هو فرصة لإعادة التعريف بطرق الحفاظ علي التراث الثقافي والترويج له عالميا. حيث أصبحت التكنولوجيا وسيلة فعالة للترويج للمواقع التراثية وتعزيز التجربة السياحية بفضل التطورات التكنولوجية مثل الواقع الافتراضي، الواقع المعزز، و الذكاء الاصطناعي أصبح بالإمكان تقديم محتوى ثقافي غني ومبتكر للسياح مما يساهم في تعزيز تفاعلهم مع التراث الثقافي. وبما أن السياحة الثقافية من مقومات الجذب السياحي الممكنة لدولة الكويت وهذا التحول الرقمي للمباني التراثية سيساعد في التسويق و تنشيط السياحة الثقافية لدولة الكويت بالإضافة الي أنه سوف يساعد على الحفاظ علي هذا التراث واستدامته للأجيال القادمة. وهنا تكمن مشكلة البحث حيث انه لا يوجد اهتمام باستخدام التحول الرقمي كذلك لا يوجد تكنولوجيا رقمية للمباني التراثية. وهنا تكمن أهمية البحث في كيفية استخدام التكنولوجيا الرقمية في الترويج للمباني التراثية واثراء المحتوى الثقافي مما يساهم في جذب السياح و تحفيز الاقتصاد المحلي كذلك ستسهل عملية تنشيط وتسويق السياحة الثقافية لدولة الكويت. وقد اتبع البحث المنهج الوصفي التحليلي والمنهج الاستقرائي من خلال استبيان على عينة من المختصين في مجال التكنولوجيا او السياحة في دولة الكويت. وقد توصل الي ان هناك أوجه قصور مهمة في استخدام التكنولوجيا والتحول الرقمي في الكويت وانه يجب تطوير البنية التحتية أولا بالإضافة لي تطوير التكنولوجيا من خلال التخطيط والتنظيم وتشكيل اللوائح والقوانين. كذلك انه باستخدام التحول الرقمي يمكن التغلب على الصعوبات التي تواجه تسويق المباني التراثية في الكويت والحفاظ عليها واستدامتها وينشط السياحة الثقافية.

الكلمات المفتاحية: التحول الرقمي، المباني التراثية، السياحة الثقافية، التكنولوجيا الرقمية،

التسويق.

Introduction:

The State of Kuwait is one of the leading countries in the Arabian Gulf region that has witnessed remarkable development in various sectors, and Kuwait has a rich heritage that reflects its ancient history and its strategic location on the Arabian Gulf coast, which made it a point of civilizational communication between East and West over the centuries (Brown 2004, Casey 2007). This location has a great impact on the formation of Kuwaiti society, which is considered somewhat closed and traditional and as a rich material heritage represented by the presence of many prominent landmarks such as heritage and historical buildings, museums, traditional markets, and archaeological sites, which are of great importance and must be preserved for future generations (Al-Shamlan, 1986). One of the most important government institutions that play a major role in preserving these buildings is the National Council for Culture, Arts and Literature, which in turn cooperated with some other state agencies such as the Ministry of Endowments and the Kuwait Municipality as well as the Ministry of Finance to restore these heritage and historical buildings that the state seeks to preserve to preserve the heritage and identity of the country, for example but not limited to the Eastern School for Girls which has become a museum of modern art and work is underway in the Eastern School for Boys to be a museum for the history of education in Kuwait. Dixon House which is a symbol of friendship and close relations that binds the State of Kuwait with the British. Last but not least the American Hospital, which has been restored to tell the story of medicine and the beginning of health care in Kuwait, and this heritage be one of the focuses of the study (National Council for Culture, Arts and Literature, 2024).

When examining the sources of income in Kuwait, we find that oil is the main and may be the only source of income in the State of Kuwait, as Kuwait is one of the largest oil-exporting countries in the world (Parus et al 2017, Issa 2021) Therefore, we try here to highlight one of the possible alternatives to diversify sources of income, namely tourism, especially cultural tourism and its revitalization through the digital transformation of heritage buildings, Digital technology will contribute

to the preservation of heritage buildings and physical heritage in all its forms, including rare documents such as photos, written works, video recordings, and original materials such as costumes and handicrafts from erosion or loss. While intangible heritage such as music, dance, folklore, and cooking cannot be displayed before coming to the tourist destination and forming a clear image of the tourism product without experiencing it, so digital technology provides different ways to improve access to citizens and visitors to this heritage (Farrah and Fadel 2021).

Here comes the role of tourism revitalization and marketing, which is of great importance as it is considered one of the basic elements that many tourism countries in general and especially the tourism sector in all its institutions, whether governmental or private sector, to attract larger numbers of tourists and convince them that they have many services and products. Thus, technology and digital transformation can be used to encourage cultural tourism by adding a dimension to marketing. The virtual travel experience is very important and aims to sustain cultural tourism, so the use of digital technology should be increased for all sectors of tourism not limited to heritage tourism only. It is also necessary to involve all stakeholders from travel agencies, hotel owners, restaurants, tour operators and various services supporting tourism, as well as decision-makers in official state agencies and public interest organizations (Khalil and Hashim 2012)

Research issues:

The research issue is summarized by the lack of interest in heritage buildings and the weakness of tourism marketing and development of cultural tourism in Kuwait, as well as the inadequate use of technology and digital transformation of heritage buildings in Kuwait. There is also a lack of a clear vision for vision for the revitalization of cultural tourism and digital transformation.

Research objectives:

- 1- Highlighting the importance of using digital transformation in the cultural tourism sector
- 2- The use of digital tourism in digitization of heritage buildings
- 3- Proposing some technological applications and their role in developing and preserving heritage buildings.

4- Marketing heritage buildings to revitalize cultural tourism in Kuwait.

The importance of research:

1. Digital transformation contributes to the preservation of heritage buildings.
2. Finding the appropriate way to exploit heritage buildings as a sustainable tourist destination.
3. Clarifying the role of digital transformation in developing heritage buildings in order to reserve them.
4. Exploiting digital technology in marketing heritage buildings to revitalize cultural tourism.

Research area:

-Heritage buildings.

-Digitalization.

Research methodology

The descriptive and analytical approach was followed by describing and analyzing the American Hospital in terms of its location and available capabilities, and the inductive approach was followed through a questionnaire on a sample of specialists in the field of technology or tourism in the State of Kuwait. Due to the limited population of the study tool to the entire study population; after the field application, 51 valid questionnaires were obtained for statistical analysis.

Research axes

The first axis: A theoretical study of the American Hospital as one of the heritage buildings.

The second axis: Digital transformation and some of its used applications.

The third axis: Marketing heritage buildings to revitalize cultural tourism.

First axis: A theoretical study of the American Hospital as one of the heritage buildings.

The American hospital is one of the heritage buildings in the State of Kuwait, as it was established by the missionary mission of the American Protestant Church in 1912, and after working in 1914, the hospital provided its services to the patients, which were free of charge for examination, but treatment for a symbolic amount and continued to so

since its inception until 1967, when the urban revolution and civil development occurred, which led to the spread of government health institutions that provide their services completely free of charge to citizens and residents. The affiliation of the American Hospital was transferred to the National Council for Culture, Arts and Literature, which became a cultural center and museum of that time period in Kuwait's history, as well as the history of the relationship between Kuwait and the United States of America. (National Council For Culture, Arts and Literature, 2022)

Describe and analyze the American Hospital as a model for heritage buildings:

The American Hospital was chosen by the researcher because it is one of the few heritage buildings that have been largely preserved and exploited as a cultural center as well as a museum that receives visitors and has a management that is keen to develop it and use digital technology in displaying its heritage content, which could make it one of the tourist destinations on which heritage tourism depends.

Whereas at that time the majority of houses in Kuwait were built from mud and wood, so the construction of the American hospital differed to be the first building not only in Kuwait but in the entire Arabian Gulf to use iron and concrete. The location of the hospital was distinctive west of the city on the sea coast so that everyone could reach it, and it had large and multiple windows to give the hospital good lighting and good ventilation, as well as in the beginning there was only one building for treatment as people were afraid of the presence of Americans and the presence of the church and priests, but with the passage of time and the many successful experiences of people, there is a demand for the American hospital and it is no longer enough to be a single building, so there are two hospitals for men and another for women, but after a while the work stopped for the spread of dispensaries and hospitals in the country due to the development that accompanied the emergence of oil. The American Hospital consisted of four buildings: the church, the priest's residence, the two women's hospitals, which turned into the administration building of the American Hospital Center, and finally the two men's hospitals, which became the cultural center and the

museum that tells the story of this building (Al-Shamlan, 1986, National Council for Culture and Arts 2024).

When you start the visit, there are two parts of the building, a new part consisting of two floors, the ground floor contains a large hall in the form of an amphitheater for Sanmar, and the first floor contains several halls and corridors containing archaeological holdings from different eras. The main part of the American Hospital retained its external form and the building was developed from the inside to tell the story of the American Hospital, and watching this story is by showing short videos expressing the different stages that Kuwait went through and how the building was built and the story of health care in Kuwait, and the visitor walks on a light path to the next room that displays either another part of the story or holdings of devices and tools that were used in that time period. It is noticeable here that the use of technology was limited to digital presentations and the use of projectors and the addition of sound and lighting accompanying the videos that tell the story of this heritage building. A 3D model of the American Hospital was also displayed, where the visitor can see the evolution of the building with the development of time.

Second axis: Digital transformation:

Digital transformation exists to reduce job burdens and thus improve work and make it more flexible, as the use of digital technology works to shorten time and effort, as the term digital has recently emerged strongly as a result of the technological development of information and technologies that build a knowledge society and artificial intelligence. Therefore, it is necessary to optimize the use of digital transformation in order for digitalization to contribute to the preservation of the country's cultural heritage. This is because digitalization needs many smart tools and applications that are used to create a data bank to categorize and count heritage sites and preserve intangible heritage through smart platforms. The digitalization of heritage buildings on the Internet facilitates the exchange of information and is a good way to reduce the costs of preserving and protecting cultural heritage (Ahi 2022, Yeniasır and Gökbulut 2022).

To clarify the concept of digital, it is necessary to know how to reach digital transformation and the use of digital technology to digitize heritage buildings, as digital transformation is defined by UNESCO as “creating digital materials from physical assets and analogizing them through cameras, scanners or other electronic devices, as digital content includes creating, sharing and accessing it in digital forms, including online courses, videos, libraries, digital texts, games and applications (2022 (Khalil and Hashim 2022) UNESCO, Because digital transformation aims to improve the performance of the organization by making fundamental changes using modern digital technologies, and this leads to the transition of government and private institutions to a new business model that provides channels of innovation, creativity and services that raise the value of the product and improve quality and efficiency. The use of digitalization also requires the availability of many physical technologies as well as human cadres prepared to deal with modern technology (Mece, 2023)

One of the most prominent uses of digital technology in the tourism sector that can be used to digitize heritage buildings is the Virtual Reality technology, where this technology depends on projecting real objects into a virtual environment so that virtual reality glasses technology is used and this method is used to stimulate tourism (Ramadan, 2022). When heritage is digitized, it means that the digitization of cultural heritage includes all heritage materials from original and rare documents to preserve them as well as facilitate the process of access to them by everyone. Therefore, the digitization of heritage buildings makes an important contribution to cultural tourism by enabling visitors to access these materials at any time. Moreover, the digitization of artworks displayed in heritage buildings and museums into virtual museums serves everyone to get to know them instead of just preserving them and thus visitors and tourists are encouraged to visit these heritage buildings realistically (Abdo, 2019).

Digital transformation has become an important matter in our time in general to achieve economic and social development, as the industrial revolution has produced major developments such as artificial intelligence, digital platforms and virtual reality. Therefore, it became

imperative for tourism to have a large share of the use of digital technology and digital transformation, as modern technologies have provided many possibilities and features that can facilitate the process of preserving, managing and marketing heritage buildings and thus preserving the cultural heritage of the country (Vial, G. 2019),2022 Khalil and Hashim)

There are many technological applications that can be used in the tourism sector and the digitization of heritage buildings. Artificial intelligence is a simulation of human intelligence and understanding its nature by making several computer programs, as the smart heritage building includes the use of artificial intelligence in many aspects, whether for guidance and guidance of visitors, such as using the idea of barcodes to reach certain sites, as these smart technologies are part of the visitor experience as well as the robot can replace the receptionist (Mohammed, 2019, 2019, Mostafa).

Digital platforms are another example of the use of digital transformation, which facilitates the exchange of information and the formation of an idea about heritage buildings and the opportunity to experience the visit to these places, thus creating the thrill of the actual experience of heritage buildings and the knowledge of their content of heritage holdings. There are many museums that attract visitors through exciting virtual tours of the exhibition halls while showing a lot of information about the contents of the building and the valuable heritage pieces present. This technology also became very useful, especially at the time of the Corona pandemic, when all cultural tourist places were closed, so digital platforms became a refuge for many, and at the same time the whole world is moving towards using digital transformation (Ramadan 2022, 2022 Khalil and Hashim).

It is considered one of the advanced applications that rely on the technology of technical environments available to virtual visitors, where technologies and digital exhibitions that are built using images or videos are displayed and displayed on virtual reality screens, where virtual tours in heritage buildings using different electronic media via the web, thus allowing the visitor to interact at any time or place, as well as when more

sophisticated and complex software is used where there are added effects that make the level of interaction greater between the visitor and the components of that digital environment where the simulation is identical to the live environment (Mohammed, 2019) (Mohammed, 2019) Therefore, the importance of the virtual heritage mini is due to making information accessible to the public at any time and any place, so it becomes easier to explore a lot, and it also increases public awareness of the presence of these heritage buildings and the services they provide and the products they contain, and this will play a key role in revitalizing cultural tourism for the State of Kuwait.

The third axis: Marketing heritage buildings to revitalize cultural tourism:

First of all, it is necessary to clarify what is meant by tourism marketing, as tourism marketing depends entirely on the tourism market, which depends on two important factors, namely supply and demand (Al-Enezi, 2022). The supply refers to heritage buildings and tourism services related to them, while the demand refers to visitors or tourists who visit heritage buildings. Therefore, marketing is always by studying the needs and desires of customers where there is an exchange process between supply and demand, meaning that the tourist destination, which is here the heritage buildings when it is clear and developed using digital transformation and the tourism services it provides to visitors who represent the demand that leads to the marketing process that needs planning, organization, guidance and control. One of the definitions that explain tourism marketing is that “it is all organized efforts and activities that are performed in studied harmony by all tourism service providers with its various elements and parts, which aim to satisfy the tastes of consumers and those wishing to tourism in all its forms (Obeidat, 2008). Therefore, tourism marketing is an integrated activity aimed at attracting the attention of visitors or local or international tourists to visit the tourist destination, where the marketing plan starts from the preparation of tourism programs until reaching the visitor who will make the tourist experience (Alhasanat and Hyasat 2011).

Tourism marketing for heritage buildings can be through the use of digital transformation, as technology focuses on exploiting heritage

buildings in the best possible way and engaging and serving visitors with the aim of obtaining a simple digital experience from the beginning of booking and planning the visit route to the end and the memories that the visitor will carry with him (Dinh< 2022, 2023, Abdelhamed).

In the period that was with the Corona pandemic, it gave great importance to virtual reality, and digital heritage tourism became of high economic importance and sheds light on the interest and support for the sustainable transformation of digital heritage tourism that does not stand in front of any risks that occur and prevent the real visit, and thus there is a positive perception that digital heritage will preserve and sustain the national heritage and that e-tourism marketing will be the vision of the future. Since Kuwait Vision 2035 is a future vision that relies on the use of technology, digital transformation, e-government and the creation of smart cities, especially since digital transformation has been applied to the tourism sector in some sister Gulf countries (.Alkaliel, 2022).

Questionnaire results:

This study focused on highlighting the need to pay attention to the digital transformation of heritage buildings to revitalize cultural tourism in the State of Kuwait through the use of digital technology for heritage buildings in particular and in general for the tourism sector. This study will contribute to clarifying some aspects that have not been studied before and stimulate more academic studies in the field of revitalizing cultural tourism in Kuwait in particular and revitalizing tourism in Kuwait in general.

Characteristics of the study sample:

A number of key variables were identified to characterize the study population, including: (gender - educational level - source of digital knowledge - job specialization - workplace), which have semantic indicators on the results of the study, in addition to reflecting the scientific background of the study members, and help to lay the foundations on which the various analyses related to the study are built, as detailed below:

1) Gender:

Table No. (1-1) Distribution of the study population according to the gender variable

Sex	Frequency	Percentage %
Male	26	51.0
Female	25	49.0
Total	51	100%

It is clear from Table 1-1 that (26) of the study members represent 51.0% males, while (25) of the study members represent 49.0% of the total study members, while (25) of the study members represent 49.0% of the total study members are females.

2) Educational Level:

Table No. (1-2) Distribution of the study population according to the educational level variable

Educational level	Frequency	Percentage %
Diploma	2	3.9
Bachelor's	24	47.1
Postgraduate (Master's/PhD)	25	49.0
Total	51	100%

It is clear from Table 1-2 that (25) of the respondents represent 49.0% of the total study population, while (24) of them represent 47.1% of the total study population, their educational level is Bachelor's degree, and (2) of them represent 3.9% of the total study population, their educational level is Diploma.

3) Source of digital knowledge:

Table No. (1-3) Distribution of study members according to the digital knowledge source variable

Digital Knowledge source	Frequency	Percentage %
Training courses	9	17.6
Attending seminars and conferences	4	7.8
Self-learning	15	29.4
Practice	6	11.8
Academic Achievement	17	33.3
Total	51	100%

It is clear from Table No. (1-3) that (17) of the study members represent 33.3% of their digital knowledge source is academic achievement, while (15) of them represent 29.4% of the total study members source of their digital knowledge is self-learning, and (9) of them represent 17. (6) of them represent 11.8% of the total study population, (6) of them represent 11.8% of the total study population, (4) of them represent 7.8% of the total study population, and (4) of them represent 7.8% of the total study population, (4) of them represent 7.8% of the total study population.

4) functional specialization:

Table No. (1-4) Distribution of study members according to the variable of job specialization

Functional specialization	Frequency	Percentage %
Information technology	14	27.5
Tourism sector	5	9.8
Other	32	62.7
Total	51	100%

It is clear from Table 1-4 that (32) of the respondents represent 62.7% of the total study population, while (14) of them represent 27.5% of the total study population specializing in IT, and (5) of them represent 9.8% of the total study population specializing in the tourism sector.

5) place of work:

Table No. (1-5) Distribution of the study population according to the workplace variable

Place of Work	Frequency	Percentage %
Higher Institute for Administrative Services	4	7.8
Public Authority for Applied Education and Training	11	21.6
College of Education	7	13.7
Other	29	56.9
Total	51	100%

It is clear from Table 1-5 that (29) of the respondents represent 56.9% of the total study population, while (11) of them represent 21.6% of the total study population where they work at the Public Authority for Applied Education and Training, (7) of them represent 13.7% of the total

study population where they work at the College of Education, and (4) of them represent 7.8% of the total study population where they work at the Higher Institute for Administrative Services.

Instrument of the study:

The questionnaire was used as a tool for data collection due to its suitability to the study's objectives, method, and population, and to answer the study's questions.

a) Constructing the study instrument:

After reviewing the literature and previous studies related to the topic of the current study, and in light of the data, questions, and objectives of the study, the tool (the questionnaire) was built, and it consisted in its final form of three parts. The following is a presentation of how it was constructed, and the procedures followed to verify its validity and stability:

- 1- The first section:** Contains an introduction to the objectives of the study, the type of data and information to be collected from the study members, with a guarantee of the confidentiality of the information provided, and a pledge to use it for scientific research purposes only.
- 2- The second section:** Contains the primary data of the study subjects, namely: (gender - educational level - source of digital knowledge - job specialization - workplace).
- 3- The third section:** It consists of (11) phrases, distributed on two main axes, and Table (1-6) shows the number of questionnaire phrases, and how they are distributed on the axes.

Table (1-6) Questionnaire axes and phrases

Axis	Number of phrases
Requirements for using digital tourism for heritage buildings	6
The benefits that can be realized from implementing the use of digital tourism for heritage buildings	5
Questionnaire	11 statements

A five-point Likert scale was used to obtain the responses of the study members, according to the following degrees of agreement:

(strongly important - important - moderately important - unimportant - not important - strongly unimportant), and then expressing this scale quantitatively by giving each of the previous statements a score, according to the following: Very Important (5) degrees, Important (4) degrees, Moderately Important (3) degrees, Unimportant (2) degrees, Not Important (2) degrees, Not Very Important (1) degree.

To determine the length of the Likert scale categories, the range was calculated by subtracting the upper limit from the lower limit ($5 \div 1 = 4$), then it was divided by the largest value in the scale ($4 \div 5 = 0.80$), and then this value was added to the lowest value in the scale (1); to determine the upper limit of this category, and thus the length of the categories became as shown in the following table:

Table (1-7) Division of the categories of the five-point Likert scale (limits of mean responses)

	Category	Category limits	
		From	To
1	Very important	4.21	5.00
2	Important	3.41	4.20
3	Moderately important	2.61	3.40
4	Unimportant	1.81	2.60
5	Strongly unimportant	1.00	1.80

The length of the range was used to obtain an objective judgment on the averages of the respondents' responses, after being statistically processed.

a) Validity of the study instrument:

The validity of the study tool means making sure that it measures what it was designed to measure, as it means that the questionnaire includes all the elements that go into the analysis on the one hand, and the clarity of its phrases on the other hand, so that it is understandable to everyone who uses it:

1- Internal consistency validity:

To verify the internal consistency of the questionnaire, Pearson's Correlation Coefficient was calculated to determine the degree of

correlation of each statement of the questionnaire with the total score of the axis.

Table No. (1-8) Pearson correlation coefficients for the statements of the first axis with the total score of the axis

The first axis (Requirements for the use of digitalization of heritage buildings)			
Phrase number	Axis correlation coefficient	Phrase number	Axis correlation coefficient
1	0.812**	4	0.879**
2	0.815**	5	0.649**
3	0.828**	6	0.571**

**** Significant at the significance level of 0.01 or less**

It is clear from Table (1-8) that the values of the correlation coefficient of each of the statements with its dimension are positive and statistically significant at the level of significance (0.01) and below; this indicates the sincerity of internal consistency among the statements of the first axis, and their suitability to measure what they were designed to measure.

Table No. (1-9) Pearson correlation coefficients for the statements of the second axis with the total score of the axis

The second axis (The benefits that can be realized from applying the use of digital technology for heritage buildings)			
Phrase number	Axis correlation coefficient	Phrase number	Axis correlation coefficient
1	0.821**	4	0.879**
2	0.823**	5	0.721**
3	0.870**		

**** Significant at the significance level of 0.01 or less**

It is clear from table (1-9) that the values of the correlation coefficient of each of the statements with its axis are positive and statistically significant at the level of significance (0.01) and below; this indicates the sincerity of internal consistency among the statements of the second axis, and their suitability to measure what they were designed to measure.

a) Stability of the study instrument:

The stability of the study instrument was ascertained through the use of Cronbach's Alpha (Cronbach's Alpha (α)), and Table 3-10 shows the values of the Cronbach's Alpha stability coefficients for each axis of the questionnaire.

Table No. (1-10) Cronbach's alpha coefficient to measure the stability of the study tool

Questionnaire	Number of phrases	Stability of the questionnaire.
Requirements for digitizing heritage buildings	6	0.850
The benefits that can be realized from implementing the digital transformation of heritage buildings	5	0.822
General stability	11	0.874

It is clear from Table No. (1-10) that the general stability coefficient is high (0.874), which indicates that the questionnaire has a high degree of stability that can be relied upon in the field application of the study.

Procedures for applying the study:

After confirming the reliability, stability, and validity of the questionnaire, it was applied in the field by following the following steps:

- 1- Distributing the questionnaire electronically.
- 2- Collecting the questionnaires, the number of which amounted to (51) questionnaires.

Statistical processing methods:

To achieve the objectives of the study and analyze the collected data, several appropriate statistical methods were used using the Statistical Package for Social Sciences (SPSS).

The following statistical measures were then calculated:

- 1- Frequencies and percentages; to identify the characteristics of the study members and determine their responses to the statements of the main axes included in the study tool.

- 2- Weighted Mean; in order to identify the average responses of the study population to each of the axis statements, and it is useful in ranking the statements according to the highest weighted arithmetic mean.
- 3- The arithmetic mean “Mean”; in order to know the extent of the high or low responses of the study members on the main axes, knowing that it is useful in ranking the axes according to the highest arithmetic mean.
- 4- Standard Deviation; to identify the extent to which the responses of the study subjects to each of the statements of the study variables, and for each of the main axes, deviate from their arithmetic mean. It is noted that the standard deviation shows the dispersion in the responses of the study members for each of the statements of the study variables, in addition to the main axes.

The closer its value is to zero, the more concentrated the responses are, and the less dispersed they are.

Analyzing and interpreting the results of the study

This chapter deals with a detailed presentation of the findings of the current study, by answering the study questions according to the appropriate statistical treatments, and then interpreting these results, as follows:

Answering the first question: What are the requirements for using digital transformation for heritage buildings?

To identify the requirements for the use of digital transformation of heritage buildings, frequencies, percentages, arithmetic means, standard deviations, and ranks were calculated for the responses of study members to the statements of the requirements for the use of digital transformation of heritage buildings, and the results were as follows:

Table No. (2-1) Responses of the respondents on the requirements for using digital transformation for heritage buildings, ranked in descending order according to the average agreement.

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Rank	Category	Standard deviation	Arithmetic mean	Degree of approval					Repetition ratio	Phrases	M
				Not very important	unimportant	Moderately important	important	Very important			
1	Very important	0.716	4.65	-	2	1	10	38	your	Working to provide a legislative, administrative and regulatory framework for the use of digital transformation in the near future by the state	3
				-	3.9	2.0	19.6	74.5	%		
2	Very important	0.850	4.61	1	-	2	10	38	your	Develop training plans for employees in the tourism sector on the use of digital transformation on a regular basis.	4
				2.0	-	3.9	19.6	74.5	%		
3	Very important	0.856	4.55	1	1	3	10	36	your	Preparing qualified human cadres technologically and tourism-wise to use digital transformation in heritage buildings	2
				2.0	2.0	5.9	19.6	70.5	%		
4	Very important	0.731	4.51	-	1	4	14	32	your	The need to conclude more agreements in the field of using digital transformation with companies specialized in this field	5
				-	2.0	7.8	27.5	62.7	%		
5	Very	0.900	4.43	1	1	5	12	32	your	Providing a	1

Rank	Category	Standard deviation	Arithmetic mean	Degree of approval					Repetition ratio	Phrases	M
				Not very important	unimportant	Moderately important	important	Very important			
	important			2.0	2.0	9.8	23.5	62.7	%	modern digital technological environment to implement the use of digital transformation to market heritage buildings	
6	important	0.901	3.78	-	3	18	17	13	your	How to assess your	6
				-	5.9	35.3	33.3	25.5	%	level of knowledge using digital	
Very important		0.627	4.42	Overall average							

It is clear in Table (2.1) that the respondents strongly agree on the importance of the requirements of using technology and digital transformation for heritage buildings with an arithmetic mean of (4.42 out of 5.00), which is an average that falls in the fifth category of the five-point scale (4.21 to 5.00), which indicates a strongly important option on the study tool.

It is clear from the results in Table (2.1) that the most important requirements for using digital transformation for heritage buildings are represented by statements No. (3, 4, 2, 5, 1), which are arranged in descending order of importance, as *follows*:

- 1- Phrase No. (3) came:” Work to provide a legislative, administrative and organizational framework for the use of digital transformation in the near future by the state” ranked first in terms of the respondents' agreement on its importance, with an arithmetic mean of (4.65 out of 5).
- 2- Statement No. (4): “Developing training plans for employees in the tourism sector on the use of digital transformation periodically” came in second place in terms of the respondents' agreement on its importance, with an arithmetic mean of (4.61 out of 5).
- 3- Statement No. (2) came: “Prepare technologically qualified human cadres Preparing human cadres who are technologically and touristically qualified to use digital transformation in heritage

buildings” ranked third in terms of the respondents' agreement on its importance, with an arithmetic mean of (4.55 out of 5).

- 4- Statement No. (5) came as follows:” The need to conclude more agreements in the field of using digital transformation with companies specialized in this field” ranked fourth in terms of the respondents' agreement on its importance, with an arithmetic mean of (4.51 out of 5).
- 5- Statement No. (1) came: ” Providing a modern digital technological environment to apply the use of digital transformation to market heritage buildings” came in fifth place in terms of the respondents' agreement on its importance with an arithmetic mean of (4.43 out of 5).

It is clear from the results in Table (4-1) that the lowest requirement for the use of digital transformation for heritage buildings is represented by statement No. (6), which is: “How do you assess your level of knowledge in using digitalization? How would you rate your level of knowledge in using digitalization?” with an arithmetic mean of (3.78 out of 5)

Table No. (2-2) Distribution of the study population according to the variable How to assess your level of knowledge using digital

How to assess your level of knowledge using digital?	Repetition	Percentages %
Strongly important	13	25.5
Important	17	33.3
Moderately important	18	35.3
Not important	3	5.9
Total	51	100%

It is clear from Table 2-2 that (18) of the respondents, representing 35.3% of the total study population, rate their level of knowledge of digital use as moderate, while (17) of them, representing 33.3% of the total study population, rate their level of knowledge of digital use as high (important), while (13) of them, representing 25.5% of the total study population, rate their level of knowledge of digital use as very high (very important). 5% of the total study population rate their level of knowledge of digital use very highly (very important), while (3) of them

representing 5.9% of the total study population rate their level of knowledge of digital use low (unimportant), and (3) of them representing 5.9% of the total study population rate their level of knowledge of digital use low (not important).

Table No. (2-2) Distribution of the study population according to the variable Does the use of digital technology for heritage buildings achieve their preservation and sustainability?

Does digitizing heritage buildings achieve preservation and sustainability?	Repetition	Percentages %
Yes	40	78.4
I don't know	11	21.6
Total	51	100%

It is clear from Table 2-2 that (40) of the respondents, representing 78.4%, believe that the use of digital transformation of heritage buildings achieves their preservation and sustainability, while (11) of them, representing 21.6% of the total respondents, do not know that the use of digital transformation of heritage buildings achieves their preservation and sustainability.

Answer to the second question: What are the benefits that can be achieved from the application of digital transformation of heritage buildings?

To identify the benefits that can be achieved from the application of digital transformation of heritage buildings, frequencies, percentages, arithmetic means, standard deviations, and ranks were calculated for the responses of the study members to the statements of the benefits that can be achieved from the application of digital transformation of heritage buildings, and the results came as follows:

Table No. (2-3) Responses of study members on the benefits that can be achieved from applying the use of digital transformation for heritage buildings, arranged in descending order according to the averages of agreement

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Rank	Category	Standard deviation	Arithmetic mean	Degree of approval				Repetition ratio	Phrases	M	
				Not very important	unimportant	Moderately important	important				
1	Very important	0.461	4.78	-	-	1	9	41	your	Improving the quality of tourism services for heritage buildings to preserve and sustain them	5
				-	-	2.0	17.6	80.4	%		
2	Very important	0.513	4.76	-	-	2	8	41	your	Renewal and innovation in marketing heritage buildings, highlighting cultural tourism in the State of Kuwait and placing it on the tourism map	3
				-	-	3.9	15.7	80.4	%		
3	Very important	0.739	4.67	1	-	2	9	39	your	Getting rid of traditional and bureaucratic methods in managing, organizing and marketing heritage buildings in the State of Kuwait	4
				2.0	-	3.9	17.6	76.5	%		
4	Very important	0.662	4.63	-	-	5	9	37	your	Increase visitors' satisfaction with heritage buildings' tourism services and products	2
				-	-	9.8	17.6	72.6	%		
5	Very	0.644	4.51	-	-	4	17	30	your	Improving the	1

Rank	Category	Standard deviation	Arithmetic mean	Degree of approval					Repetition ratio	Phrases	M
				Not very important	unimportant	Moderately important	important	Very important			
	important			-	-	7.8	33.3	58.9	%	competitiveness of cultural tourism and obtaining a higher percentage of tourism demand	
Very important		0.468	4.67	Overall average							

It is clear in Table (2-3) that the respondents strongly agree with the benefits that can be achieved from applying the use of technology and digital transformation for heritage buildings with an arithmetic mean of (4.67 out of 5.00), which is an average that falls in the fifth category of the five-point scale (4.21 to 5.00), which indicates a strongly important option on the study tool.

It is clear from the results in Table (2-3) that the most prominent benefits that can be achieved from applying the use of digital transformation for heritage buildings (5, 3, and 4), which are arranged in descending order of importance, as follows:

- 1- Phrase No. (5) came as follows:” Improving the quality of tourism services for heritage buildings to preserve and sustain them” ranked first in terms of the respondents' agreement on its importance, with an arithmetic mean of (4.78 out of 5).
- 2- Statement No. (3) came: ” Renewal and innovation in marketing heritage buildings and highlighting Kuwait's cultural tourism and putting it on the tourist map” came in second place in terms of the study members' agreement on its importance, with an arithmetic mean of (4.76 out of 5).
- 3- Statement No. (4) came: ” Getting rid of traditional and bureaucratic methods in managing, organizing and marketing heritage buildings in the State of Kuwait” ranked third in terms of the respondents' agreement on its importance, with an arithmetic mean of (4.67 out of 5).

It is clear from the results in Table (2-3) that the least benefits that can be achieved from applying the use of digital transformation for heritage buildings are represented by statements No. (2) and (1), which are ranked in descending order of importance, as follows:

- 1- Phrase No. (2) came as follows:” Increasing visitors' satisfaction with tourism services and products in heritage buildings” ranked fourth in terms of the respondents' agreement on its importance, with an arithmetic mean of (4.63 out of 5).
- 2- Statement No. (1) came: ” Improving the competition of cultural tourism and obtaining a higher percentage of tourism demand” ranked fifth in terms of the respondents' agreement on its importance, with an arithmetic mean of (4.51 out of 5).

Answer to the second question: What are the suggestions to develop the work?

In order to identify suggestions for work development, frequencies and ranks were calculated for the responses of the study members on suggestions for work development, and the results came as follows:

Table No. (2-4) Distribution of study members according to the variable of suggestions for work development

Suggestions for improvement	Repetition	Rank
Forming an IT-enabled heritage department at the Ministry of Information or the Tanb Council for Culture and Arts	1	2
Establishing a specialized body in the tourism sector	1	2
An excellent initiative in line with the requirements of the stage	1	2
A new tourism environment must be created to keep pace with the rest of the country.	1	2
A cadre of public relations staff should be prepared and developed to introduce the international community to these buildings.	1	2
Utilize GIS, artificial intelligence, and data science techniques	1	2
I encourage a visit to Azerbaijan to see its digital museums. It's really impressive	1	2
That the country is at the forefront of this wonderful field	1	2
Developing and caring for the country's heritage and tourism	1	2
The work should be done by Kuwaiti hands	1	2

Suggestions for improvement	Repetition	Rank
The digital design method must be innovative, for example, the appearance of the building on the screen in 3D and the user can move it to recognize its parts, meaning that the digital must be attractive and at the same time easy to use	1	2
Interest in old heritage buildings	1	2
Our tourist destination, malls, traditional folk markets, sea beaches and islands are more important than heritage buildings.	1	2
Holding an agreement with a program in the World Heritage Committee, which follows one of the conventions of UNESCO in Paris	1	2
Benefit from the experiences of sister countries such as Saudi Arabia and the UAE	2	1
Utilize modern technology to develop cultural tourism	2	1
Designing applications that keep everything related to the digitization of heritage buildings in Kuwait	1	2

It is clear from Table 2-4 that the most prominent proposals are as follows:

- Utilizing the experiences of sister countries such as Saudi Arabia and the UAE, with a frequency of (2).
- Utilizing modern technology to develop heritage tourism (2)

Conclusion:

The emerging digital transformation in the field of digital buildings will be of great importance in promoting preserving the country's cultural heritage and thus there will be a strong opportunity to revitalize cultural tourism in the state of Kuwait. Tourism marketing must take serious steps towards the use of digital transformation, as marketing the digitization of heritage buildings and improving the quality of cultural tourism is related to the extent of the existence of serious digital planning as well as the atmosphere of legislation and laws for work systems within the framework of an integrated national policy for all government sectors to create a digital environment that keeps pace with the future and leads to e-tourism that helps to use digital tools not only in heritage buildings but in all areas related to tourism.

Recommendations:

- 1- There needs to a digital transformation to digitize heritage buildings in reference to the infrastructure as well as develop plans and legal arrangements on all relevant government institutions to make digital

transformation beneficial to heritage buildings as well as preserve the country's cultural heritage for future generations.

- 2- Cooperation between the public and private sectors in the country by encouraging partnerships between the government sector and technology companies to provide appropriate digital solutions.
- 3- Training and qualifying human cadres in the field of artificial intelligence and digital transformation in cooperation with specialized IT companies.
- 4- Promotion through social media, where social media platforms are strategically used to promote heritage buildings and cultural sites to attract tourists and revitalize cultural tourism in Kuwait.
- 5- When developing tourism policies, there should be great interest in marketing heritage programs and activities that are held in heritage buildings.
- 6- Various academic studies should be conducted on the use of technology and digital transformation not only for heritage buildings but also for the entire tourism sector.

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