

Article

Adaptive Reuse of Heritage Houses and Hotel Conative Loyalty: Digital Technology as a Moderator and Memorable Tourism and Hospitality Experience as a Mediator

Ibrahim A. Elshaer ^{1,2,*} , Sameh Fayyad ² , Salama Ammar ³, Tamer Ahmed Abdulaziz ⁴ and Samy Wageh Mahmoud ² 

¹ Department of Management, College of Business Administration, King Faisal University, Al-Ahsa 31982, Saudi Arabia

² Hotel Management Department, Faculty of Tourism and Hotels, Suez Canal University, Ismailia 41522, Egypt; sameh.fayyad@tourism.suez.edu.eg (S.F.); samy_wageh@tourism.suez.edu.eg (S.W.M.)

³ Tourism Studies Department, Higher Institute for Tourism and Hotels (EGOTH), Luxor 85951, Egypt; salamalogly@hith.edu.eg

⁴ Tourism Studies Department, High Institute for Tourism and Hotels, 6th of October City 12563, Egypt; dr.tamer@hith.edu.eg

* Correspondence: ielshaer@kfu.edu.sa

Abstract: Several studies have shown that the adaptive reuse of heritage houses as accommodation hotels could preserve their value and attain many financial, social, environmental, and cultural benefits for both tourist destinations and hotel firms. The current study examines to what extent the adaptive reuse of heritage houses can improve conative loyalty to hotels through the mediating roles of memorable tourism and hospitality experiences. Perceptions of 308 customers who frequently occupy heritage hotels were explored and examined with structural equation modelling. The empirical results show that the adaptive reuse of heritage houses has a positive influence on memorable tourism and hospitality experiences. The memorable tourism and hospitality experience has significantly mediated the relationship between the adaptive reuse of heritage houses and hotel conative loyalty. Lastly, theoretical and practical implications are included concerning how to apply these findings to the tourism and hospitality industry.

Keywords: adaptive reuse; heritage houses; hotel conative loyalty; digital technology; memorable tourism and hospitality experience



Citation: Elshaer, I.A.; Fayyad, S.; Ammar, S.; Abdulaziz, T.A.; Mahmoud, S.W. Adaptive Reuse of Heritage Houses and Hotel Conative Loyalty: Digital Technology as a Moderator and Memorable Tourism and Hospitality Experience as a Mediator. *Sustainability* **2022**, *14*, 3580. <https://doi.org/10.3390/su14063580>

Academic Editor: Alastair M. Morrison

Received: 3 February 2022

Accepted: 16 March 2022

Published: 18 March 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Egypt is well-known as a country with a long and fascinating history and was home to several human civilizations. Its famous heritage buildings stand as monuments to this past. The United Nations Educational, Scientific and Cultural Organization (UNESCO) determined various locations around the world as World Heritage Sites for their cultural, historical, scientific, or natural importance. These sites are protected by international treaties. According to UNESCO, Historic Cairo is one of the world heritage sites existed in Egypt [1].

Historic Cairo is one of the oldest Islamic cities on Earth, dating from the 10th century AD [2]. Its heritage buildings include mosques, houses, schools, hammams (Turkish baths), and ornate fountains [3]. This global heritage treasure, represented in Islamic Cairo, must be preserved, maintained, and properly exploited as a tourist attraction in line with the guidelines of sustained tourism growth.

In this context, Egypt has made great efforts for sustaining some heritage buildings in Islamic Cairo, such as Moheb al-Din Abu al-Tayyib Hall, Sabil and Kutab Khusraw Pasha, and the Dome of al-Salih Najm al-Din Ayyub at Al-Mouez Street which was inaugurated in 2017. Additionally, some heritage buildings in Islamic Cairo are under restoration, such as Sabil Ahmad Effendi Salim, Sabil Yusuf Bek, and the Dome of the Abbasid Caliphs in Sayda

Zainab region, and Gamal El-Deen Alzahaby in the Al-Azhar region [4]. But despite that, there are some heritage buildings, such as House of El-Razzaz, Sakna Bek House, Khirzati House, and Mustafa Jaafar Al-Silahdar House, still suffer from violations and negligence. In addition, they do not generate income to cover the costs necessary for its maintenance and preservation.

According to [5], adaptive reuse of historic buildings in the field of tourism and hospitality can offer good profits for hotels and businesses and completely assist the country's tourism sector. Ref. [6] added that reusing heritage buildings for tourism and hospitality purposes has become important for cultural, historic, and national markers of original environments in many tourism destinations. Tourists seeking outstanding experiences and simultaneous exposure to history, art, culture, tastes, traditions, and sentiments of many periods of a country's history can visit and stay at heritage hotels [7,8]. Thus, the hotels can use the heritage houses after rehabilitating them as a place for residence, consequently, creating unique memorable hospitality experiences that create a conative loyalty to the hotel that contributes to attracting new customers.

On the other hand, using digital technologies, when reusing heritage houses in the tourism field, can probably improve the overall tourism experience. According to [9], digital technologies are blurring the barriers between the actual and virtual worlds, allowing for more indulgence in vacation experiences. With the help of digital technologies such as virtual reality (VR), augmented reality (AR), and holograms, tourism locations may improve visitor experiences and capture unforgettable memories [10].

According to the Venice Charter, "the monument conservation is always encouraged by assigning them to a meaningful function in society" [11], it has become necessary to apply the adaptive reuse concept on the Egyptian heritage houses to assist in achieving an acceptable profit that ensures the continuity of maintenance works at the required rates and to preserve these houses, protect their value, and achieve economic, social, and environmental benefits.

The current research aims at: (1) investigating the effect of reusing the heritage houses in the field of tourism and hospitality to create a memorable tourism and hospitality experience; (2) exploring the role of digital technologies as a moderator on the relationship between the adaptive reuse and the memorable tourism and hospitality experiences; (3) studying the impact of memorable tourism and hospitality experience resulted by the residence in the heritage houses on achieving the hotel conative loyalty; and (4) examining the role of memorable tourism and hospitality experience as a mediation in the relationship between reusing the heritage houses by hotels and achieving the tourists loyalty.

2. Theoretical Background and Hypotheses Development

2.1. The Adaptive Reuse of Heritage Houses in the Field of Tourism and Hospitality

The "mud and stone" houses are one of the ancient architecture arts that reflect the civilized development of peoples in ancient times and express the evolution of the human need in every time and place [12]. There are several heritage houses in Cairo such as El-Razzaz House, Sakna Bek House, Mustafa Jaafar Al-Silahdar House, Al-Shabashiri House, Set wasila House, Elsayami House, and El-Kratliya House [3].

According to [13], adaptive reuse typically refers to the repurposing of sites or buildings for purposes other than those for which they were originally designed. This new usage may help their environments economically, socially, and culturally. According to [14], adaptive reuse is a process that transforms a decommissioned or ineffective object into a new thing that can be used for a different function. Ref. [15] provides more context for the definition of adaptive reuse: adaptive reuse is the act of modifying existing structures and places for new uses.

From the above-mentioned definitions, it is concluded that adaptive reuse is a process whereby the historic building is used for purposes other than the original purpose for which it was created in order to preserve its value and achieve economic, social, and cultural benefits. This process should, first and foremost, maintain the material state of the historic

building in such a way it will not be changed and, at the same time, dispel concerns about merging heritage houses with its all-historical dimensions in modern life activities.

There are several studies that discussed the adaptive reuse of heritage buildings in tourism and hospitality fields at different countries worldwide. Ref. [5], concurred that adaptive reuse of historic buildings to a hotel or a tourism resort can produce a good return to the hotel, destination, shops, businesses, and positively assist the country's tourism sector. Ref. [16] has studied the experiment of the adaptive reuse of heritage buildings in Bangkok as small hotels. They found that this experiment has achieved a lot of benefits towards the preserving of the heritage buildings value in addition to the economic and social benefits achieved to the local community. Another study [13] illustrated the importance of reusing historical sites in Algeria as tourist attractions. This study emphasized that the adaptation of historical buildings in the tourism and hospitality field is very important for their survival and sustainability. They have to be incorporated into socioeconomic life and tailored to contemporary demands.

On the other side, ref. [6] stated that repurposing old structures for tourist and hospitality purposes has become a significant cultural, historical, and ethnic marker of authentic landscapes in a number of tourism locations. According to [17], heritage accommodation has tremendous promise as a sustainable tourism product due to its numerous applications as a means of enhancing human glory, community character, and cultural capital. Ref. [8], noted that restored or historic buildings are one of the most frequently requested types of tourist accommodation and are increasingly being included on the map of heritage tourism.

According to [7,8], travelers seeking outstanding experiences and simultaneous exposure to history, art, culture, tastes, traditions, and moods from various eras of a country's history can do so by visiting and staying in heritage hotels. Additionally, they argued that travelers can see displays of excellence in the repurposing of historic houses through the integration of fine detailing in décor, service, and traditional kitchens with contemporary demands for high technology and commercial services. According to [18], demand for heritage-based lodging not only encourages spending by individuals seeking to appreciate the historical surroundings, but also provides a backdrop for entertainment, enjoyment, and leisure. Ref. [19] noted in this context that when adapted for tourism purposes, heritage buildings can become a valuable and sustainable resource. The legacy buildings that are repurposed for tourism and hospitality attract a large number of foreign and domestic tourists by providing a royal experience and presenting the heritage building's history and culture [20]. Heritage hotels and resorts are historically significant and provide visitors with emotional, aesthetic, and personal value [21].

It is concluded from the above-mentioned related studies that tourism and hospitality field is a very suitable field for the adaptive reuse of the heritage buildings. The adaptive reuse of historic buildings to a hotel or a tourism resort can supply good income to the hotel, destination, shops, businesses, and positively support tourists' experiences.

The concept of 'memorable tourism and hospitality experience' (MTHE) was originally presented by [22]. They defined it as tourism and hospitality experience which are positively remembered and called to mind after the event has taken place based on the tourist's evaluation of the experience. According to the MTHE scale created by [22], tourism and hospitality experiences have seven significant components that affect a tourist's memory: "hedonism, novelty, local culture, refreshment, meaningfulness, engagement, and knowledge". Understanding and facilitating travelers' happy recollections is viewed as a competitive advantage in modern tourism and hospitality [22,23]. In other studies, this influential scope has been employed to quantify tourist and hospitality experiences [24–29].

Visitor engagement is a highly seminal element of a tourism experience [30]. Ref. [31] shows how visitors can be engaged in tourism and hospitality services in multiple ways. Several tourism and hospitality research revealed that better visitor involvement improves overall tourist experience and MTHE [32,33]. Engagement in cultural places is positively related to enhanced tourism and hospitality memorable experiences [32]. MTHE is produced

when visitors engage with tourist attractions, according to [34]. Therefore, the following hypothesis is proposed as shown in Figure 1:

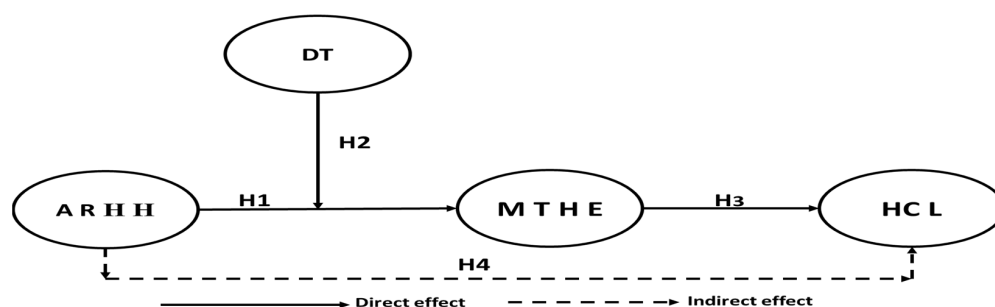


Figure 1. The proposed conceptual framework and hypotheses.

Hypothesis 1 (H1): Adaptive Reuse of Heritage Houses (ARHH) is positively correlated with Memorable Tourism and Hospitality Experiences (MTHE).

2.2. Digital Technology as a Moderator in the Relationship of Heritage Houses Reuse and Guest Memorable Tourism and Hospitality Experience

AR, VR, and holographic technologies have been successfully implemented in several subsectors of the tourism business, where greater visitor engagement is a significant advantage [9,35,36]. Ref. [37] have looked into the possibility of increasing the use of technology in the tourist and hospitality business in general. AR research in tourism has mainly been conducted for the purposes of experience improvement and engagement, in which actual photographs are accompanied by multimedia to deliver tailored information with a user-friendly interface [9,36]. Experiences in heritage sites are being enhanced by VR apps [38]. Heritage interpretation for tourism experiences can be provided in a variety of formats, including physical, digital, and documented formats, and can be provided either in-situ (on-site) or ex-situ (off-site), depending on the situation. Tourism experiences based on real knowledge also help visitors learn about heritage [39]. Using VR and AR in heritage tourism can help control conflicting memories by re-creating historical customs and myths [40]. Thus, the following hypothesis were formulated:

Hypothesis 2 (H2): Digital technology (DT) moderates the positive relationship between (ARHH) and (MTHE), higher (DT) will strengthen the relationship between (ARHH) and (MTHE).

2.3. Memorable Tourism and Hospitality Experience as a Mediator in the Relationship between Adaptive Reuse of Heritage Houses and Conative Hotel Loyalty

Conative loyalty is a behavior that occurs when a customer develops cognitive and affective loyalty. It is related to a customer's commitment to a brand [41]. A person who possesses conative loyalty will demonstrate more distinct behavioral intentions, such as recommendation, repurchase intention, information seeking, and positive word of mouth [42].

Outstanding hospitality experiences influence the guest's decision-making processes and ultimately result in the intention to buy [22]. Additionally, these good memories have a strong impact on consumers' intentions to revisit and share favorable word of mouth [28]. The findings of [43] indicate that guests' intentions to share WOM are influenced by memorable local cuisine experiences. This is due to the fact that gathering information from an individual's prior experiences is a very reputable source of information. Thus, it can be concluded that hotels' utilization of heritage properties following rehabilitation to accommodate their guests provides unforgettable hospitality experiences, which in turn adds to the establishment of conative loyalty to the hotel (which helps attract new customers). As a result, the following hypotheses are advanced:

Hypothesis 3 (H3): MTHE is positively correlated with Hotel Conative Loyalty (HCL).

Hypothesis 4 (H4): *MTHE mediates the positive relationship between (ARHH) and (HCL).*

3. Methodology

3.1. Instrument Measurement

A questionnaire was created to test the hypotheses. An extensive review of the literature defined the study's scales. Thus, five dimensions have been identified. The ARHH was tested by 10 items based on the findings of [44,45]. The MTHE were measured using the eight-item scale proposed by [30]. The DT variable was scored on a six-point scale derived from [46,47]. Finally, four items from [42] were employed to measure hotel conative loyalty. A Likert scale of 1 (strongly disagree) to 5 (Strongly agree) was employed. The instrument was tested by academics and consultants (8). It was read and clarified for clarity.

3.2. Participants and Data Collection

A total of 400 questionnaires were distributed by the research team. The study team is made up of people who work in tourism and hotel management schools. As a result, they have a good relationship with tourist guides at heritage sites who help them collect data from visitor using a convenient sample and drop and collect methods in Cairo (Egypt's capital) during August 2021. Cairo was chosen since it has many heritage buildings affiliated with a variety of historical periods. 308 valid samples were collected with a recovery rate of 77%. This sample consisted of 62.3% males and 37.7 females between the ages of 26 and 71. The majority of participants (76%) were holding bachelor's degrees. Most respondents (96%) were foreigner guests, mainly German, British and Italian, and only 4% were Egyptians.

4. Data Analysis Results

The current study utilized "Structural Equation Modeling" (SEM) via the "Partial least squares PLS" technique to examine the hypotheses of the research with SmartPLS-3.0. The proposed theoretical model was examined using a two-step approach suggested by [48] as follows.

4.1. Assessment of Outer Measurement Model

To evaluate the outer model's reliability and validity, internal consistency reliability, indicator reliability, convergent validity, and discriminant validity were all tested. First, as displayed in Table 1, the structures' internal consistency reliability was tested with Cronbach's alpha (α) changing from 0.935 to 0.951 and the composite reliability (CR) ranging from 0.945 to 0.959.

Second, indicators' reliability was acceptable as all loading values of the structure indicators were higher than 0.60. Third, convergent validity was evaluated by the average variance extracted (AVE) values exceeding the satisfactory value of 0.50 [49].

Finally, three criteria were implemented to assess the discriminant validity of the constructs. They were cross-loading, Fornell-Larcker criterion, and heterotrait-monotrait ratio (HTMT) [48]. As indicated in Table 2, the outer-loading for each latent variable (underlined) was higher than the cross-loading with other measurements.

As illustrated in Table 3, the bolded values of the AVEs in the diagonals are greater than the correlation coefficient between variables. Ref. [50] states that HTMT readings should be less than 0.90. The levels for HTMT in the study were lower than this (see Table 3). The results indicate that the model structure has appropriate discriminant validity. As a result, the outer measurement model's outputs were regarded as sufficient to proceed with the structural model's evaluation.

Table 1. Assessment of the formative measurement model.

Abbreviation	Items	Outer Loading	α	C.R	AVE
ARHH	Adaptive Reuse of Heritage Houses		0.935	0.945	0.635
ARHH_1	"I am enthusiastic about living the same way as the Heritage Houses owners."	0.863			
ARHH_2	"I pay a lot of attention to and concentrate a lot in my visit at these heritage Houses."	0.670			
ARHH_3	"When interacting with the heritage Houses., it is difficult to detach myself."	0.735			
ARHH_4	"In general, I thoroughly enjoy exchanging ideas with other people in the tourism site community."	0.810			
ARHH_5	"When someone criticizes these heritage Houses, it feels like a personal insult."	0.681			
ARHH_6	"The overall architecture and impression of the building inspire me."	0.819			
ARHH_7	"The visit to the heritage houses provides a thorough insight into this cultural heritage site's historical era."	0.868			
ARHH_8	"The visit to the heritage houses makes me feel connecting with the related history, legends, and historical personalities."	0.846			
ARHH_9	"These heritage houses have established a good image in the minds of their tourists."	0.819			
ARHH_10	"I believe that heritage houses have a better image than competitive destinations."	0.826			
MTHE	Memorable Tourism and Hospitality Experiences		0.951	0.959	0.746
MTHE_1	"I am thrilled about having a new experience."	0.886			
MTHE_2	"I really excited to live this tourism experience."	0.892			
MTHE_3	"I expect It is different from previous experiences."	0.892			
MTHE_4	"I closely experienced the local culture."	0.776			
MTHE_5	"I expect It is refreshing and revitalized."	0.860			
MTHE_6	"I see I am going to do something meaningful."	0.890			
MTHE_7	"I am interested in the main activities of this tourism experience."	0.874			
MTHE_8	"I expect the experience is exploratory."	0.833			
DT	Digital technology		0.948	0.958	0.793
DT_1	"I find using digital technologies will enrich my cultural experience."	0.910			
DT_2	"I find that digital presentation and interpretation make the historical content to be intuitive and impressive."	0.891			
DT_3	"I feel that the way in which technology narrates the history is entertaining."	0.924			
DT_4	"I think that digital display technologies may contribute to the sense of historical participation."	0.871			
DT_5	"Digital technologies, increase the respondents' interest in visiting cultural heritage sites."	0.869			
DT_6	"Digital display technologies gave visitors a comprehensive understanding of the architecture, history, and culture of the heritage houses."	0.878			
HCL	Hotel Conative Loyalty		0.936	0.955	0.840
HCL_1	"I encourage my friends and relatives to stay in these hotels."	0.925			
HCL_2	"I say positive things about these hotels."	0.910			
HCL_3	"I recommend these hotels to others who seek my advice."	0.913			
HCL_4	"I intend to stay with these hotels."	0.917			

Table 2. Cross loading results.

	ARHH	MTHE	DT	HCL
ARHH_1	0.863	0.667	0.258	0.455
ARHH_2	0.670	0.493	0.160	0.289
ARHH_3	0.735	0.487	0.196	0.315
ARHH_4	0.810	0.642	0.267	0.424
ARHH_5	0.681	0.471	0.261	0.352
ARHH_6	0.819	0.600	0.259	0.449
ARHH_7	0.868	0.660	0.284	0.514
ARHH_8	0.846	0.702	0.424	0.613
ARHH_9	0.819	0.778	0.343	0.554
ARHH_10	0.826	0.727	0.428	0.603
MTHE_1	0.782	0.886	0.400	0.675
MTHE_2	0.720	0.892	0.512	0.672
MTHE_3	0.721	0.892	0.477	0.652
MTHE_4	0.581	0.776	0.330	0.534
MTHE_5	0.642	0.860	0.424	0.589
MTHE_6	0.721	0.890	0.501	0.741
MTHE_7	0.669	0.874	0.513	0.658
MTHE_8	0.647	0.833	0.689	0.691
DT_1	0.337	0.526	0.910	0.549
DT_2	0.395	0.600	0.891	0.621
DT_3	0.346	0.531	0.924	0.571
DT_4	0.268	0.428	0.871	0.538
DT_5	0.322	0.468	0.869	0.482
DT_6	0.290	0.397	0.878	0.532
CBHL_1	0.558	0.727	0.595	0.925
CBHL_2	0.551	0.668	0.571	0.910
CBHL_3	0.520	0.701	0.527	0.913
CBHL_4	0.530	0.682	0.580	0.917

Table 3. Inter-construct correlations, the square root of AVE, and HTMT results.

	AVEs Values				HTMT Results			
	ARHH	HCL	DT	MTHE	ARHH	HCL	IT	MTHE
ARHH	0.797							
HCL	0.589	0.916			0.614			
DT	0.372	0.620	0.891		0.378	0.654		
MTHE	0.796	0.758	0.562	0.864	0.828	0.799	0.576	

4.2. Assessment of the Structural Model

The hypotheses were then tested by a structural equation analysis (SQM). In particular, the model's predictive capacity and the explanatory power were analyzed [51]. With the VIF values of the manifest indicators changing from 2.488 to 4.701 below 5, the multicollinearity of the structural model has been verified as inexistent. Next, [52], indicated that the lower limit for the R^2 values is 0.10. Therefore, the R^2 values for the variables of MTHE ($R^2 = 0.754$) and HCL ($R^2 = 0.575$) are acceptable (Table 4). Besides, The Stone-Geisser Q^2 test indicates MTHE and HCL values greater than zero (Table 4), indicating adequate predictive validity of the model [49]. Accordingly, enough predictive validity for the structural model was also confirmed.

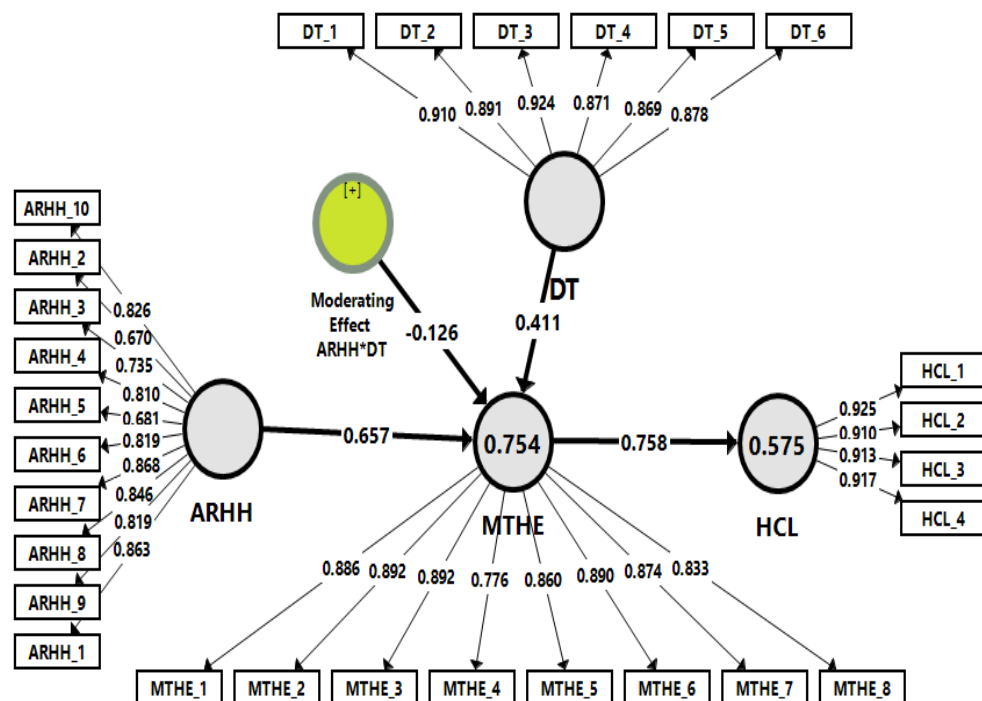
Table 4. Coefficient of determination (R^2) and (Q^2) of the model.

Endogenous Latent Construct	(R^2)	(Q^2)
MTHE	0.754	0.551
HCL	0.575	0.477

Lastly, the path coefficient and t-value of the hypothesized association were analyzed using a bootstrapping technique. Table 5 and Figure 2 below display the hypothesis test results, given the path coefficient values and the relevant significance. ARHH was found to be in positive and significant correlation to MTHE at $\beta = 0.657$, $p < 0.01$, so H1 was supported. The results also confirm the moderation effect of IT on ARHH towards the MTHE but negatively at $\beta = -0.126$, $p < 0.01$, and this is not support H2. The H3 was accepted since MTHE has a positive effect on HCL at $\beta = -0.126$, $p < 0.01$. Finally, ARHH has a Positive effect on HCL through MTHE (indirect effect) at $\beta = 0.498$, $p < 0.01$, supporting H4.

Table 5. The structural model's results.

	Hypotheses	Beta (β)	(T-Value)	p Values	Results of Hypotheses
H1	ARHH $\longrightarrow$ MTHE	0.657	12.918	0.000	Accepted
H2	ARHH $\longrightarrow$ DT $\longrightarrow$ MTHE	-0.126	4.696	0.000	Not Accepted
H3	MTHE $\longrightarrow$ HCL	0.758	24.132	0.000	Accepted
H4	ARHH $\longrightarrow$ MTHE $\longrightarrow$ HCL	0.498	11.337	0.000	Accepted

**Figure 2.** The tested structural and measurement model.

5. Discussion and Implications

5.1. ARHH and MTHE

The empirical results of this study revealed that the ARHH has a positive effect on MTHE. This is in agreement with [32,34]. It gives an indicator for the desire of tourists and

hotel guests to have unique tourist experiences which are represented in the residence in heritage houses.

5.2. Assessing the Moderating Effect

The practical results validated the moderation influences of the DT variable on the relationship between ARHH and MTHE but negatively. In other words, DT can dampen the positive relationship between ARHH and MTHE (Figure 3, Interaction plot).

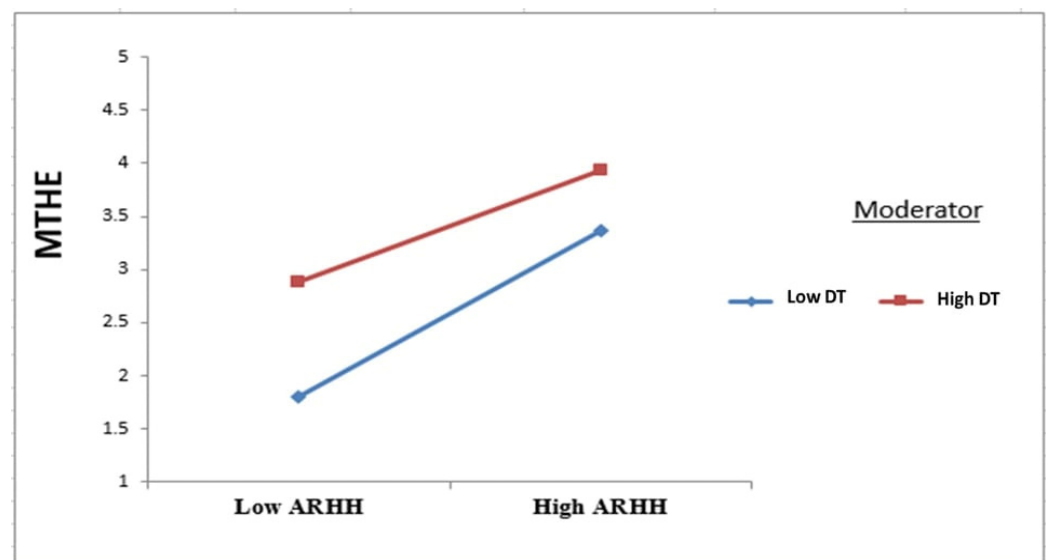


Figure 3. Interaction plot for the DT moderation effect on ARHH towards MTHE.

Returning to Figure 2 and calculating the moderator's interaction values ($0.657 + (-0.126) = 0.531$), we conclude that DT made the relationship between ARHH and MTHE will diminish. This result disagrees with the findings in [38,39]. The study justifies this result as follows: the tourist prefers to live the tourism and hospitality experience exactly as it was during the period in which the owner of the heritage house was living. In particular, the tourist will stay for a short period of time in this heritage house, so he prefers to live a real and not a virtual experience. The tourist also desires to wear the same clothes of this era, eat the same foods in the same way, with the same service style, and has a desire to experience the celebrations during the same period. The difference between the results of this study and the previous studies is that these studies confirm the role of digital technology in enriching the cultural experience of the tourist in the heritage places whose visits are short or limited and do not have the means that enable the tourist to live a similar experience of the lifestyle for a previous era.

5.3. The Mediating Role of MTHE between the Relationship ARHH and HCL

As shown in Table 4 and Figure 3, the MTHE has significantly mediated the relationship between ARHH and HCL. Through the partnership between the hotel chains and the official bodies that supervised the heritage houses, and based on the Win-2-Win principle, the hotel chains can be participated in the rehabilitation of these heritage houses and reuse them as residential places. According to the results of the empirical study, the hotel chains that participated in this partnership can achieve a unique competitive advantage that agrees with the blue ocean strategy and away from the red ocean strategy. In addition, the heritage houses will be continually preserved, and an economic and aesthetic return will be achieved.

6. Application of the Study

The results of the study can be practically applied to most famous heritage houses that are suitable for short-term residence. In this paper, it is proposed that one reuse heritage houses as places of residence under a supervision of one of the chain hotels (which will pay the costs of its restoration and rehabilitation in return for using it to accommodate their guests). The guest will enjoy a real experiment in lifestyle related to a past historical periods. Thus, he can wear the same clothes of this era, eat the same foods in the same way served in that period, and enjoy the celebrations of that time. As well the distinctive features of the area surrounding the heritage houses will be simulated.

The study recommends encouraging applying the adaptive reuse concept of the heritage houses in the field of tourism and hospitality as a technique to assist achieving acceptable profits which ensures the continuity of maintenance works at the required rates and preserving these houses, protect their value, and achieve economic, social, and environmental benefits. On the other hand, there is a need to work to create unique and diverse tourism and hospitality experiences by supporting the adaptive reuse of heritage houses as a tourist attraction and a place of residence.

The paper highlights the importance of rationalizing the use of digital technologies when reusing the heritage houses as a place of residence to give tourists the chance to have nontraditional tourist experiences. It also guides the encouraging of partnerships between hotel chains and the official bodies that supervised the heritage houses in order to pave the way for hotel chains to participate in the rehabilitation of these heritage houses and reuse them as residential places.

The research suggests reusing the heritage house as a resident area under a supervision of one of chain hotels. As regarding the exterior environment surrounding the archaeological house, it is recommended to coordinate and pave the squares, the streets, and the roads leading to the house, and develop guide signs and street name signs in the roads surrounding and leading to the house. It is important also to carry out architectural restoration works for the buildings overlooking heritage houses, besides beautifying the area, and working on afforestation.

Finally, the findings encourage hotels to allocate additional resources in order to provide unique hospitality services with specific themes related to previous periods of history. This could eventually increase conative loyalty to certain hotels. On the other side, the results provide important implications to destination marketing organization, and the local community to list heritage houses on the tourism map to enrich the tourism product and support tour operators in diversifying the components of the tourism programs, in addition to enriching guests' experience, culture, and their knowledge about visited destinations.

7. Conclusions

The current study aims at: (1) investigating the effect of reusing the heritage houses in the field of tourism and hospitality to create a memorable tourism and hospitality experience; (2) exploring the role of digital technologies as a moderator on the relationship between the adaptive reuse and the memorable tourism and hospitality experiences; (3) studying the impact of memorable tourism and hospitality experience resulted by the residence in the heritage houses on achieving the hotel conative loyalty; and (4) examining the role of memorable tourism and hospitality experience as a mediation in the relationship between reusing the heritage houses by hotels and achieving the tourists loyalty. To examine these proposed hypotheses, a questionnaire was developed, consisting of 30 questions divided to 5 sections. Data were collected from hotel guests who visited Islamic Cairo, in Egypt. A total of 400 questionnaires were distributed to a convenient sample of tourists and 308 valid samples were collected with a response rate of 77%. Smart PLS-3.0 was utilized to test the hypotheses. The results can be practically applied to the most famous heritage houses that are suitable for short-term residency. The empirical results revealed that the adaptive reuse of heritage houses has a positive effect on memorable tourism and hospitality experiences. Digital technology can dampen the positive relationship between the adaptive reuse of

heritage houses and the memorable tourism and hospitality experiences. The memorable tourism and hospitality experience significantly has mediated the relationship between the adaptive reuse of heritage houses and the hotel conative loyalty. The recommendations of the study are represented in working to create unique and diverse tourism and hospitality experiences by supporting the adaptive reuse of heritage houses as a tourist attraction and a place of residence. Rationalizing the use of digital technologies when reusing heritage houses as a place of residence gives tourists the chance to have nontraditional tourist experiences. Encouraging the partnership between the hotel chains and the official bodies that supervised the heritage houses paves the way for hotel chains to participate in the rehabilitation of these heritage houses and reuse them as residential places.

Author Contributions: Conceptualization, I.A.E. and S.W.M.; methodology, I.A.E. and S.F.; software, I.A.E., S.W.M., and S.A.; validation, I.A.E., T.A.A., S.W.M., and S.F.; formal analysis, I.A.E. and T.A.A.; investigation, I.A.E. and S.W.M.; resources, I.A.E.; data curation, I.A.E.; writing—original draft preparation, I.A.E.; writing—review and editing, I.A.E., S.W.M., S.F., S.F., S.A., and T.A.A.; visualization, I.A.E.; supervision, I.A.E.; project administration, I.A.E. and S.W.M.; funding acquisition, I.A.E. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia (GRANT119).

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the deanship of scientific research ethical committee, King Faisal University (project number: GRANT119, date of approval: 16 October 2021).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data is available upon request from researchers who meet the eligibility criteria. Kindly contact the first author privately through e-mail.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. The Venice Charters. The International Council on Monuments and Sites (ICOMOS). International Charter for the Conservation and Restoration of Monuments and Sites, Venice Charter 1964. Available online: http://www.international.icomos.org/charters/venice_f.htm (accessed on 20 January 2022).
2. UNESCO World Heritage Sites in Egypt. Available online: <https://www.egyptonlinevisa.com/world-heritage-sites-egypt/> (accessed on 18 September 2020).
3. Williams, C. *Islamic Monuments in Cairo: The Practical Guide*; American University in Cairo Press: Cairo, Egypt, 2008.
4. Egyptian Ministry of Tourism & Antiquities. Historic Cairo Development Project. Available online: <http://www.antiquities.gov.eg/DefaultAr/Projects/pages/Projectesdetails.aspx?projectcode=42&ProjectType> (accessed on 1 May 2021).
5. Ab Wahab, L.; Hamdan, N.A.M.; Lop, N.S.; Kamar, I.F.M. Adaptive re-use principles in historic hotel buildings in Melaka and George Town. In Proceedings of the 4th International Building Control Conference 2016 (IBCC 2016), Kuala Lumpur, Malaysia, 7–8 March 2016; Volume 66, p. 00030.
6. Lee, W.; Chhabra, D. Heritage hotels and historic lodging: Perspectives on experiential marketing and sustainable culture. *J. Herit. Tour.* **2015**, *10*, 103–110. [CrossRef]
7. Mendiratta, A. Heritage Hotels: Building a Future by Preserving the Past. 2013. Available online: <https://eturboneews.com/69384/heritage-hotels-building-future-preserving-past/> (accessed on 20 January 2022).
8. Timothy, D.J.; Boyd, S.W. *Tourism and Trails: Cultural, Ecological and Management Issues*; Channel View Publications: Bristol, UK, 2015; p. 64.
9. Jung, T.; tom Dieck, M.C.; Lee, H.; Chung, N. Effects of Virtual Reality and Augmented Reality on Visitor Experiences in museum. In *Information and Communication Technologies in Tourism*; Springer: Cham, Switzerland, 2016; pp. 621–635.
10. Little, C.; Patterson, D.; Moyle, B.; Bec, A. Every footprint tells a story: 3D scanning of heritage artifacts as an interactive experience. In Proceedings of the Australasian Computer Science Week Multiconference 2018, New York, NY, USA, 1 January–2 February 2018.
11. Ford, A.; Acott, T. *Responsible Tourism: A Guide for Tourism and Sustainability in Small-Scale Fisheries and Agri-Food*; University of Greenwich: London, UK, 2015.
12. Osman, A. Seismic Restoration of Historical Islamic Monuments. In Proceedings of the 9th US National and 10th Canadian Conference of Earthquake Engineering, Toronto, ON, Canada, 25–29 July 2010.
13. Hocine, M.; Chabbi-Chemrouk, N. Reusing historical sites as an added value to tourist's attraction in Algeria. *Humanit. Soc. Sci. Rev.* **2015**, *4*, 257–261.

14. *Adaptive Reuse, Preserving Our Past, Building Our Future*; Department of the Environment and Heritage, Australian Government: Canberra, ACT, Australia, 2004; ISBN 0642550301.
15. Langston, C.; Wong, F.K.; Hui, E.C.; Shen, L.Y. Strategic assessment of building adaptive reuse opportunities in Hong Kong. *Build. Environ.* **2008**, *43*, 1709–1718. [\[CrossRef\]](#)
16. Pongsermpol, C.; Upala, P. Impacts of adaptive reuse of heritage buildings to small hotel buildings in Bangkok. *Environ. Behav. Proc. J.* **2017**, *5*, 449–458. [\[CrossRef\]](#)
17. Chang, T.C. Heritage as a tourism commodity: Traversing the tourist–local divide. *Singap. J. Trop. Geogr.* **1997**, *18*, 46–68. [\[CrossRef\]](#)
18. Waitt, G. Consuming heritage: Perceived historical authenticity. *Ann. Tour. Res.* **2000**, *27*, 835–862. [\[CrossRef\]](#)
19. Henderson, J.C. Selling the past: Heritage hotels. *Tour. Int. Interdiscip. J.* **2013**, *61*, 451–454.
20. Chittiprolu, V.; Samala, N.; Bellamkonda, R.S. Heritage hotels and customer experience: A text mining analysis of online reviews. *Int. J. Cult. Tour. Hosp. Res.* **2021**, *15*, 131–156. [\[CrossRef\]](#)
21. Piramanayagam, S.; Rathore, S.; Seal, P.P. Destination image, visitor experience, and behavioural intention at heritage centre. *Anatolia* **2020**, *31*, 211–228. [\[CrossRef\]](#)
22. Kim, J.H.; Ritchie, J.R.; Tung, V.W.S. The effect of memorable experience on behavioral intentions in tourism: A structural equation modeling approach. *Tour. Anal.* **2010**, *15*, 637–648. [\[CrossRef\]](#)
23. Rasoolimanesh, S.M.; Seyfi, S.; Hall, C.M.; Hatamifar, P. Understanding memorable tourism experiences and behavioural intentions of heritage tourists. *J. Destin. Mark. Manag.* **2021**, *21*, 100621. [\[CrossRef\]](#)
24. Coudounaris, D.N.; Sthapit, E. Antecedents of memorable tourism experience related to behavioral intentions. *Psychol. Mark.* **2017**, *34*, 1084–1093.
25. Gohary, A.; Pourazizi, L.; Madani, F.; Chan, E.Y. Examining Iranian tourists' memorable experiences on destination satisfaction and behavioral intentions. *Curr. Issues Tour.* **2020**, *23*, 131–136. [\[CrossRef\]](#)
26. Kim, J.H.; Ritchie, J.B. Cross-cultural validation of a memorable tourism experience scale (MTES). *J. Travel Res.* **2014**, *53*, 323–335. [\[CrossRef\]](#)
27. Sthapit, E.; Björk, P.; Coudounaris, D.N. Emotions elicited by local food consumption, memories, place attachment and behavioural intentions. *Anatolia* **2017**, *28*, 363–380. [\[CrossRef\]](#)
28. Tsai, C.T. Memorable tourist experiences and place attachment when consuming local food. *Int. J. Tour. Res.* **2016**, *18*, 536–548. [\[CrossRef\]](#)
29. Yu, C.P.; Chang, W.C.; Ramanpong, J. Assessing visitors' memorable tourism experiences (MTEs) in forest recreation destination: A case study in Xitou nature education area. *Forests* **2019**, *10*, 636. [\[CrossRef\]](#)
30. Rasoolimanesh, S.M.; Md Noor, S.; Schuberth, F.; Jaafar, M. Investigating the effects of tourist engagement on satisfaction and loyalty. *Serv. Ind. J.* **2019**, *39*, 559–574. [\[CrossRef\]](#)
31. So, K.K.F.; King, C.; Sparks, B. Customer engagement with tourism brands: Scale development and validation. *J. Hosp. Tour. Res.* **2014**, *38*, 304–329. [\[CrossRef\]](#)
32. Chen, H.; Rahman, I. Cultural tourism: An analysis of engagement, cultural contact, memorable tourism experience and destination loyalty. *Tour. Manag. Perspect.* **2018**, *26*, 153–163. [\[CrossRef\]](#)
33. Taheri, B.; Jafari, A.; O'Gorman, K. Keeping your audience: Presenting a visitor engagement scale. *Tour. Manag.* **2014**, *42*, 321–329. [\[CrossRef\]](#)
34. Seyfi, S.; Hall, C.M.; Rasoolimanesh, S.M. Exploring memorable cultural tourism experiences. *J. Herit. Tour.* **2020**, *15*, 341–357. [\[CrossRef\]](#)
35. Chang, Y.L.; Hou, H.T.; Pan, C.Y.; Sung, Y.T.; Chang, K.E. Apply an augmented reality in a mobile guidance to increase sense of place for heritage places. *J. Educ. Technol. Soc.* **2015**, *18*, 166–178.
36. Kounavis, C.D.; Kasimati, A.E.; Zamani, E.D. Enhancing the tourism experience through mobile augmented reality: Challenges and prospects. *Int. J. Eng. Bus. Manag.* **2012**, *4*, 10. [\[CrossRef\]](#)
37. Martins, J.; Gonçalves, R.; Branco, F.; Barbosa, L.; Melo, M.; Bessa, M. A multisensory virtual experience model for thematic tourism: A Port wine tourism application proposal. *J. Destin. Mark. Manag.* **2017**, *6*, 103–109. [\[CrossRef\]](#)
38. Huang, Y.C.; Backman, K.F.; Backman, S.J.; Chang, L.L. Exploring the implications of virtual reality technology in tourism marketing: An integrated research framework. *Int. J. Tour. Res.* **2016**, *18*, 116–128. [\[CrossRef\]](#)
39. Mura, P.; Tavakoli, R.; Sharif, S.P. Authentic but not too much': Exploring perceptions of authenticity of virtual tourism. *Inf. Technol. Tour.* **2017**, *17*, 145–159. [\[CrossRef\]](#)
40. Naef, P.; Ploner, J. Tourism, conflict and contested heritage in former Yugoslavia. *J. Tour. Cult. Change* **2016**, *14*, 181–188. [\[CrossRef\]](#)
41. Han, H.; Kim, Y.; Kim, E.K. Cognitive, affective, conative, and action loyalty: Testing the impact of inertia. *Int. J. Hosp. Manag.* **2011**, *30*, 1008–1019. [\[CrossRef\]](#)
42. Ahn, J.; Wong, M.L.; Kwon, J. Different role of hotel CSR activities in the formation of customers' brand loyalty. *Int. J. Qual. Serv. Sci.* **2020**, *12*, 337–353. [\[CrossRef\]](#)
43. Adongo, C.A.; Anuga, S.W.; Dayour, F. Will they tell others to taste? International tourists' experience of Ghanaian cuisines. *Tour. Manag. Perspect.* **2015**, *15*, 57–64. [\[CrossRef\]](#)
44. Ma, T.; Yu, M. An Analysis of the Adaptive Re-use of Heritage Buildings in South Australia. In *Proceedings of the 20th International Symposium on Advancement of Construction Management and Real Estate*; Springer: Singapore, 2017; pp. 1307–1316.

-
45. Trihn, T.T.; Ryan, C. Museums, exhibits and visitor satisfaction: A study of the Cham Museum, Danang, Vietnam. *J. Tour. Cult. Change* **2013**, *11*, 239–263.
 46. Liu, Y. Evaluating visitor experience of digital interpretation and presentation technologies at cultural heritage sites: A case study of the old town, Zuoying. *Built Herit.* **2020**, *4*, 14. [[CrossRef](#)]
 47. Styliani, S.; Fotis, L.; Kostas, K.; Petros, P. Virtual museums, a survey and some issues for consideration. *J. Cult. Herit.* **2009**, *10*, 520–528. [[CrossRef](#)]
 48. Leguina, A. A primer on partial least squares structural equation modeling (PLS-SEM). *Int. J. Res. Method Educ.* **2015**, *38*, 220–221. [[CrossRef](#)]
 49. Henseler, J.; Ringle, C.M.; Sinkovics, R.R. The use of partial least squares path modeling in international marketing. In *New Challenges to International Marketing*; Emerald Group Publishing Limited: Bentley, UK, 2009.
 50. Gold, A.H.; Malhotra, A.; Segars, A.H. Knowledge management: An organizational capabilities perspective. *J. Manag. Inf. Syst.* **2001**, *18*, 185–214. [[CrossRef](#)]
 51. Hair, J.F., Jr.; Hult, G.T.M.; Ringle, C.M.; Sarstedt, M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*; Sage Publications: New York, NY, USA, 2021.
 52. Chin, W.W. The partial least squares approach to structural equation modeling. *Mod. Methods Bus. Res.* **1998**, *295*, 295–336.