

Factors Influencing Tourists' Sustainable Behaviours towards Cultural Heritage Tourism in Qufu City, China

Liu Yanying and Shantini Thuraiselvam

School of Hospitality, Tourism, and Events, Taylor's University, Malaysia

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Abstract: Tourists' sustainable behaviours are essential to conserving cultural heritage sites and sustaining heritage tourism. The present study expanded the theory of planned behaviour (TPB) to analyse the factors influencing cultural heritage tourists' sustainable behaviour and compared the changes in these factors during and after the COVID-19 pandemic. A total of 400 and 403 valid responses were collected respectively at the Confucius site in Qufu City during and after the pandemic. Subsequently, partial least square structural equation modelling (PLS-SEM) was conducted to test the model and verify the hypotheses. The results demonstrate that the impact of tourists' attitudes on sustainable behavioural intentions was more significant in the post-COVID-19 period, whereas the impact on perceived behavioural control was more significant during the COVID-19 pandemic. Personal norms and past behaviours also significantly impacted tourists' sustainable behavioural intentions. While tourists' subjective norms significantly impacted personal norms, no significant impact was found on sustainable behavioural intentions. In summary, this study contributes to a deeper understanding of cultural heritage tourists' sustainable behaviours and practical insights for tourism site managers regarding sustainable development and management.

Keywords: Sustainable behaviour, cultural heritage tourism, theory of planned behaviour, tourist, COVID-19

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Introduction

The recent coronavirus disease (COVID-19) outbreak negatively impacted the global tourism industry, which was rendered a period of stagnacy (Lama & Rai, 2021). The continuous mutation of the coronavirus and the emergence of alternative virus strains have also increased tourists' vigilance on personal safety and survival, which has engendered significant challenges to the tourism industry post-COVID-19.

Correspondence: Liu Yanying, Taylor's University, Malaysia. Email: liuyanying0727@163.com

Accordingly, promoting sustainable tourism can assist in resolving the existing challenges through different aspects of tourism-dependent communities (Nepal, 2020), which is crucial to the development of community-based cultural heritage tourism. Cultural heritage tourism destinations provide tourists with landscapes, visuals, and performing arts while introducing local communities to specific cultural atmospheres through unique lifestyles, values, traditions, and activities. Hence, tourists can authentically experience relevant activities, stories, or characters from both historical and contemporary periods (Chourasia & Chourasia, 2012). Nonetheless, cultural heritage tourism is one of the most vulnerable sectors. External factors such as war (Ahmed & Oumer, 2022; Nazir et al., 2023), modern civilisation (Lin, 2023; Vartanyan, 2020), and over-commercialisation (Bortolotto, 2021; Zhang et al., 2021) can negatively impact the preservation or integrity of cultural heritage sites (Madandola & Boussaa, 2023), which strengthens the call for sustainable cultural heritage tourism.

Numerous previous scholars have advocated sustainable development for the tourism industry (Abhishek et al., 2021; Bhati et al., 2021; Cao et al., 2022; Liu et al., 2020; Madandola & Rao, 2023; Sharmin et al., 2020). Nevertheless, investigations on sustainability are limited as most studies focused more on the environmental dimension (Panwanitdumrong & Chen, 2021; Rao et al., 2022; Sharmin et al., 2020; Wang et al., 2020) compared to tourists' sustainable behaviours in terms of cultural awareness, inheritance, and protection. Simultaneously, the framework applied to the influencing factors requires expansion, especially in the post-COVID-19 period as these factors continuously undergo significant changes. Existing studies have applied the theory of planned behaviour (TPB) to explore the contributing factors, such as attitudes, subjective norms, perceived behavioural control, and behavioural intention (Alazaizeh et al., 2019; Buonincontri et al., 2017; Landon et al., 2018).

The current study seeks to fill the existing literature gap by developing a more relevant research framework for cultural heritage tourism to thoroughly understand tourists' sustainable behaviours. The research objectives are: (1) to determine the relationship between tourists' attitudes, perceived behavioural control, subjective norms, past behaviours, personal norms, and sustainable behavioural intentions, (2) to explore the relationship between tourists' sustainable behavioural intentions and sustainable behaviours, (3) to verify the mediating effect of personal norms on the association between subjective norms and sustainable behavioural intentions, and (4) to compare the differences during and after the COVID-19 period to determine the changes in the influencing factors. Thus, an alternative theoretical framework was developed by expanding TPB. The comparison between the two COVID-19 periods would also assist in comprehending the changes in tourists' sustainable behaviours

at cultural heritage sites. Resultantly, the findings would contribute valuable insights for sustainable development and management to help cultural heritage tourism managers in China.

Literature Review

The Theory of Planned Behaviour (TPB)

The theory of planned behaviour (TPB) serves as a theoretical foundation to scrutinise the factors contributing to tourists' behavioural intentions or predicting tourists' actual demeanours (Paul et al., 2016; L. Wang et al., 2018). The theory posits that human behaviour is based on their respective behavioural intentions, attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991). TPB was initially employed to investigate consumer behaviour before being applied to the study of tourism behaviour (Han et al., 2016; Hsu & Huang, 2010; Reza Jalilvand & Samiei, 2012; Ulker-Demirel & Ciftci, 2020; Wu et al., 2023).

Hsu and Huang (2010) concentrated on tourists' travelling intentions to destinations. Meanwhile, Tommasetti et al. (2018) expanded TPB to determine the contributing factors to consumer choices of sustainable restaurants. Furthermore, TPB was employed to study environmentally friendly behaviours (Chuang et al., 2018; Deng et al., 2016; Kaiser & Gutscher, 2003; Lin, 2012; Mahardika et al., 2020). This study incorporated two additional variables, namely past behaviours and personal norms, in Ajzen's (1991) TPB to explore the influencing factors of tourists' sustainable behaviours at cultural heritage tourism sites.

Attitude

Attitude (ATT) is the emotional manifestation of personal feelings before performing a decision (Han et al., 2010). The attitude towards behaviour directly or indirectly reflects an individual's behavioural intentions (Allport, 1967), which is one of the determinants in TPB (Ajzen, 1991) and has been extensively corroborated by numerous past studies (Deng et al., 2016; Han et al., 2016; Reza Jalilvand & Samiei, 2012; Tommasetti et al., 2018; Ulker-Demirel & Ciftci, 2020; C. Wang et al., 2018; Wu et al., 2023). However, the impact of attitude due to cultural influences on sustainable behavioural intentions remains underexplored. Specifically, the impact of tourists' cultural sentiments on the positive attitude towards sustainable behavioural intentions remains ambiguous. Thus, this study hypothesises that:

H1: ATT significantly influences tourists' sustainable behavioural intentions.

Perceived Behavioural Control

Perceived behavioural control (PBC) is the expectation of exhibiting a specific behavioural type, which influences an individual's behavioural choice (Tommasetti et al., 2018). Ajzen (1991) integrated PBC into the theory of reasoned action to elucidate an individual's decision-making process and behaviour from the perspective of belief perception (Hsu & Huang, 2010). The relationship between perceived behavioural control, behavioural intention, and performance was also extensively appraised (Han et al., 2016; Reza Jalilvand & Samiei, 2012; Ulker-Demirel & Ciftci, 2020). Halpenny et al. (2018) discovered that behavioural intention significantly influenced tourists' visits to World Heritage sites while Duarte Alonso et al. (2015) revealed that PBC was one of the significant predictors of tourists' travelling intentions to English heritage buildings. Accordingly, the following hypothesis is proposed:

H2: PBC significantly impacts tourists' sustainable behavioural intentions.

Subjective Norms

Subjective norms (SN) are the social pressures perceived by individuals from social circles, including parents, friends, and spouses (Amjad & Wood, 2009). SN play a fundamental role in shaping behavioural intentions, wherein positive or negative strengths motivate individuals to adopt and avoid certain behaviours, respectively (Tommasetti et al., 2018). Existing studies applied TPB and demonstrated that SN significantly predict behavioural intentions (Brown et al., 2010), which propounds that SN are an integral factor in tourists' intentions to visit cultural heritage sites (Halpenny et al., 2018). Different factors also influence tourists' SN and subsequently, sustainable behavioural intentions. Thus, this study posits that:

H3: SN significantly influence tourists' sustainable behavioural intentions.

Past Behaviour

Past behaviour (PB) is an individual's response to past external or internal stimuli (Ajzen, 1991). Positive behaviours repeatedly occur in specific behavioural contexts, which will develop into a habit and influence future performance (Ouellette & Wood, 1998). Thus, past behaviour is a vital determinant of tourists' demands in the travel and hospitality industry (Chiu & Cho, 2021), wherein tourists' behavioural intentions will influence the manifestation frequency of civilised behaviours (Lin et al., 2018; Qiu, 2017). In addition, past behaviour was discovered to be more significantly moderated by conscious and rational decision-making processes, especially in dangerous situations (Lin et al., 2018). Meanwhile, the impact of past behaviours in cultural heritage tourism requires more investigation. Therefore, this

study incorporated past behaviours to expand TPB and proposes the following hypothesis:

H4: PB significantly impact tourists' sustainable behavioural intentions.

Personal Norms

Schwartz (1977) defined personal norms (PN) as a moral obligation to perform or avoid specific behaviours. Tourists' PN refer to the perceived morally appropriate or inappropriate demeanour, which shapes a tourist's behavioural intention for selfless or socially responsible purposes (Stern et al., 1999). Prior studies revealed that the intrinsic moral factor significantly influences altruistic decisions more than extrinsic social factors (Han & Hwang, 2015). A positive correlation was also discovered between PN and behavioural intentions (Bertoldo & Castro, 2016; Doran & Larsen, 2016; Fenitra et al., 2022; Han & Hyun, 2018; Han et al., 2016; Matthies et al., 2012). Furthermore, PN significantly mediate the subjective normative behavioural relationship (Han et al., 2016; Hunecke et al., 2001). As such, incorporating PN into TPB in the context of cultural heritage tourism could thoroughly delineate tourists' sustainable behavioural intentions (Klößner, 2013) while determining the impact of subjective norms (SN) on PN in this study:

H5: SN significantly influence tourists' PN.

H6: PN significantly impact tourists' sustainable behavioural intentions.

Sustainable Behavioural Intentions

Individuals can perform more environmentally friendly behavioural choices based on action consequences and early admonitions, which serve as a fundamental basis for sustainable behaviour (SB) (Buonincontri et al., 2017). The stimulation of sustainable behaviour in cultural heritage tourism is related to tourists' perceptions of the history and culture in a heritage site in regard to preservation and conservation approaches (Buonincontri et al., 2017). Previous researchers affirmed the importance of tourists' SB in promoting tourism development from multiple perspectives, including environmental protection, consumption, and cultural attitudes (Landon et al., 2018; Nickerson et al., 2016; Passafaro, 2019). Similarly, sustainable behavioural intention (SBI) refers to the probability of tourists adopting SB (Ali & Omar, 2014). Tourists with a high SBI will be more inclined to adopt SB (Alazaizeh et al., 2019; Buonincontri et al., 2017; Kastenholz et al., 2018). While a growing literature body assesses tourists' BI at various travel destinations, more studies on tourists' SBI at cultural heritage sites are required. Thus, this study postulates that:

H7: SBI significantly influences tourists' SB.

Conceptual Framework

The present study investigated the factors influencing tourists’ SB when travelling to cultural heritage sites and compared the differences in tourists’ SBI during and after the COVID-19 pandemic by incorporating past behaviours and personal norms to extend TPB. Figure 1 illustrates the conceptual framework and the interrelationships between the study variables.

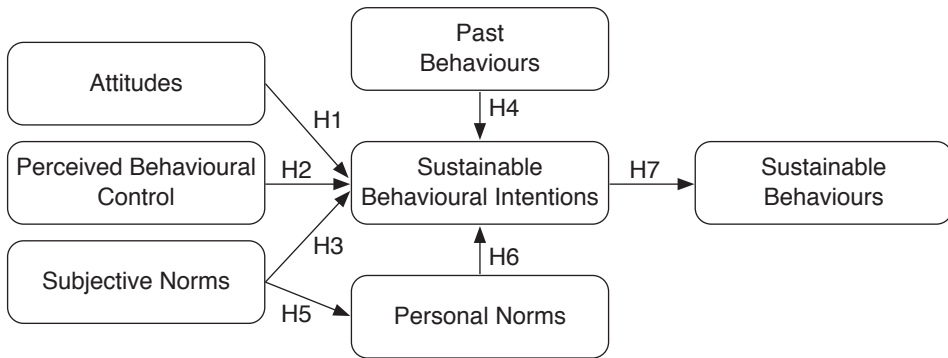


Figure 1. The proposed conceptual framework

Methodology

Study Site

Confucius, who was a renowned Chinese philosopher, politician, and educator, founded Confucianism (Yu, 2008), which predominantly established the Chinese ideological, political, and social system for millennia and served as the foundation of the entire Chinese culture (Hofstede & Bond, 1988). The Temple and Cemetery of Confucius as well as the Kong Family Mansion were included on the World Cultural Heritage List in 1994. Figure 2 depicts the Confucius site in Qufu City, Jining City, Shandong Province, China. The city is in the southwest of Shandong Province. The maximum distance from north to south is 35.8 kilometres and the maximum distance from east to west is 25 kilometres, with a total area of 815 square kilometres (Wei, 2014).

Qufu City is a global tourism destination recognised as the ancient city of the Ming Dynasty, the Confucius sites, the Nishan Holy Realm, and the Cultural International City (Zhang, 2018). The tourism industry in Qufu City has developed rapidly owing to the vigorous development of cultural and tourism integration. Hence, the Confucius site, which is a representative destination of cultural heritage tourism, receives one of the highest number of tourist inflows. According to the statistics of the Qufu Municipal Bureau of Culture and Tourism, the visitor inflows during the May Day holiday in 2017 and 2018 were 0.133 million and 0.146 million, respectively. While the figure decreased to 0.042 million during the COVID-19

pandemic in 2020, the relaxing of epidemic restrictions in 2023 led to a total of 0.295 million visitors during the May Day holiday. Thus, the popularity of cultural heritage tourism continues to rise, which suggests the significance of understanding tourists' SB at cultural heritage sites.

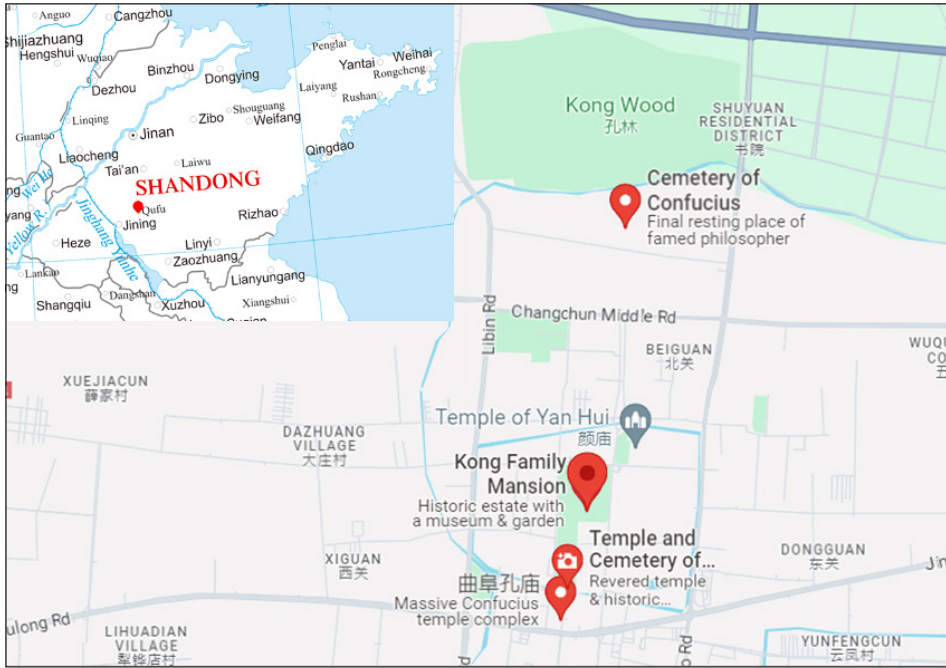


Figure 2. The Confucius site in Qufu City

Instrumentation

Quantitative research methods were employed in the current study, and data was collected through questionnaires. The questionnaire comprised three sections with measurement items adopted from previous research (Brown et al., 2010; Buonincontri et al., 2017; Han et al., 2016; Lee et al., 2013). The first section provided an introduction to the study topic, background, and purpose. Demographic information, including gender, age, nationality, education, and income, was collected in the second section. The third section measured the factors contributing to tourists' SB based on TPB. The items measuring tourists' attitude and PBC were adopted from Ajzen (1991), Brown et al. (2010), and C. Wang et al. (2018), whereas items measuring SN were adopted from Ajzen (1991), Brown et al. (2010), and Han et al. (2010).

Items assessing past behaviours were adopted from Han et al. (2016), and items appraising PN were adopted from Han et al. (2016) and Stern et al. (1999). The SBI

items were adopted from Ajzen (1991) as well as Perugini and Bagozzi (2001) while SB items were adopted from Buonincontri et al. (2017) and Lee et al. (2013). All items were measured on a 5-point Likert scale ranging from 1 as “strongly disagree”, 2 as “disagree”, 3 as “neutral”, 4 as “agree”, to 5 as “strongly agree”.

Data Collection

The target population was tourists visiting the Confucius site in Qufu City, Shandong Province, China, a representative of traditional Chinese culture and cultural heritage tourism sites. Pilot tests were conducted with 40 respondents selected on each occasion to ensure the questionnaire was reliable and valid. The questionnaires were randomly distributed at different locations of the Confucius site to respondents of different ages, genders, occupations, education, nationality, or ethnic groups. The questionnaires were disseminated via convenience sampling due to the uncertain number of tourists and activities. Physical communication was also conducted during data collection.

The questionnaires were distributed between August and September 2020 and between March and April 2023, which represented the periods during and after the COVID-19 pandemic. The policies, tourist travel experiences, and destination management approaches differed in the two pandemic periods, which provided a more significant differentiation degree and time representativeness. The Morgan Table and Raosoft sample size calculators were utilised to calculate the required sample size ($n = 384$) as the number of tourists at the Confucius site was not controlled. A total of 484 and 512 questionnaires were collected separately during the two periods, resulting in 400 and 403 valid responses, respectively.

Data Analysis

The present study performed the partial least square structural equation modelling (PLS-SEM) for hypothesis testing as this study involved multiple latent variables, which could not be directly examined due to the presence of various variables with complex and interrelated relationships (Hair et al., 2011). The multivariate statistical analysis method contained two parts, namely measurement model and structural model analyses, to evaluate data validity and reliability while analysing the interrelationships between all variables.

Results

Respondents' Profiles

Table 1 presents the descriptive statistics for respondents' demographics during and after the COVID-19 pandemic. The proportion of males and females was equivalently distributed, with slightly more females than males. Respondents aged between 40

and 49 years old were the majority at 48% and 32.3%, respectively in both periods. Furthermore, Chinese tourists accounted for more than 98%, with only several foreign tourists participating. Most respondents possessed bachelor's degrees, which accounted for 30% and 30.8%, respectively in both periods. Approximately, half of the respondents earned a monthly income level between CNY 2001 and CNY 6,000 (see Table 1).

Table 1. Respondents' profiles

Characteristic	During COVID-19		After COVID-19	
	Frequency	Percentage	Frequency	Percentage
Gender				
Male	169	42.3	182	45.2
Female	231	57.7	221	54.8
Age (Years)				
Below 20	39	9.7	77	19.1
20 - 29	67	16.7	83	20.6
30 - 39	50	12.5	62	15.4
40 - 49	192	48.0	130	32.3
50 - 59	51	12.8	46	11.4
60 and Above	1	0.3	5	1.2
Ethnicity				
Chinese	394	98.5	398	98.8
Non-Chinese	6	1.5	5	1.2
Education				
High school	75	18.7	104	25.8
Diploma	96	24.0	78	19.3
Bachelor's degree	120	30.0	124	30.8
Master's degree	16	4.0	20	5.0
Doctorate	0	0.0	6	1.5
Others	93	23.3	71	17.6
Monthly Income				
Below CNY 2,000	50	12.5	106	26.3
CNY 2,001 – 4,000	148	37.0	94	23.3
CNY 4,001 – 6,000	120	30.0	91	22.6
CNY 6,001 – 8,000	52	13.0	54	13.4
CNY 8,001 – 10,000	20	5.0	40	9.9
Above CNY 10,000	10	2.5	18	4.5

Measurement Model Assessment

Measurement model assessment includes two indicators, namely validity and reliability. The convergence effectiveness of the model requires a factor loading value

exceeding 0.7 per item (Hair et al., 2011; Kock, 2011). The item should be removed if the value is below 0.4. Hence, all items with factor loading values exceeding 0.4 or below 0.7 should be removed based on composite reliability (CR) and average variance extracted (AVE) values (Hair et al., 2011; Kock, 2011). Resultantly, the convergence validity of the latent variables (LVs) was improved by removing SB1 (0.677), SB2 (0.692), SB7 (0.579), SB8 (0.664), SB9 (0.583), SB12 (0.675) from the data collected during the COVID-19 pandemic. Next, SB1 (0.685), SB2 (0.690), SB5 (0.675), SB6 (0.656), SB7 (0.464), SB8 (0.552), SB9 (0.591) and SB10 (0.678) were removed from the data collected after the COVID-19 pandemic. Table 2 demonstrates that the factor loading value of each item on LVs exceeded 0.7, which indicates high internal consistency. In addition, the AVE value of LVs exceeded 0.5, which suggests that all LV items attained an average explanatory ability.

The CR and Cronbach’s alpha values were employed to evaluate data reliability (Rasoolimanesh et al., 2015) at the threshold value of 0.7. The CR value is generally considered more suitable for PLS-SEM as CR incorporates information about the factor loading into calculations (Hair et al., 2011; Kock, 2011; Rasoolimanesh et al., 2015). The CR values of all items in the two periods exceeded 0.8, which indicates sufficient reliability. Discriminant validity was also examined based on the AVE square root value of each construct, which should exceed all the correlations between the construct and other constructs in the model (Hair et al., 2011; Kock, 2011). Table 3 depicts the AVE square root values of all constructs, which posits that the model attained acceptable discriminant validity.

Table 2. Measurement model assessment results

Construct and Item	During COVID-19			After COVID-19		
	Loading	CR	AVE	Loading	CR	AVE
Attitude		0.966	0.876		0.946	0.815
<i>In a cultural heritage site, I think...</i>						
It is wise to engage in sustainable behaviour.	0.894			0.911		
It’s good to engage in sustainable behaviour.	0.935			0.922		
It’s worthwhile to engage in sustainable behaviour.	0.959			0.899		
It’s beneficial to engage in sustainable behaviour.	0.955			0.878		
Perceived Behavioural Control		0.863	0.678		0.889	0.729
I am confident that if I want, I can engage in sustainable behaviour at a cultural heritage site.	0.809			0.879		

Table 2. (cont)

Construct and Item	During COVID-19			After COVID-19		
	Loading	CR	AVE	Loading	CR	AVE
Whether or not I engage in sustainable behaviour in cultural heritage sites is completely up to me.	0.765			0.787		
It is easy for me to engage in sustainable behaviour at cultural heritage sites.	0.891			0.891		
Subjective Norm		0.956	0.878		0.946	0.855
<i>In cultural heritage sites, most of the people who are important to me...</i>						
think that I should engage in sustainable behaviour.	0.941			0.920		
want me to engage in sustainable behaviour.	0.936			0.928		
support my idea of engaging in sustainable behaviour.	0.934			0.926		
Past Behaviour		0.947	0.856		0.929	0.813
<i>In the past two years...</i>						
I have had sustainable behaviour while travelling.	0.914			0.897		
I have participated in activities related to sustainable behaviour.	0.913			0.89		
I have had sustainable behaviours in cultural heritage sites.	0.949			0.919		
Personal Norm		0.947	0.857		0.942	0.845
<i>I feel...</i>						
I feel obligated to engage in sustainable behaviour when travelling to cultural heritage sites.	0.911			0.899		
It is important to engage in sustainable behaviour to preserve cultural heritage.	0.938			0.918		
It is important for tourists to engage in sustainable behaviours to make tourism sustainable.	0.928			0.94		

Table 2. (cont)

Construct and Item	During COVID-19			After COVID-19		
	Loading	CR	AVE	Loading	CR	AVE
Sustainable Behavioural Intention		0.962	0.895		0.940	0.840
<i>In cultural heritage site...</i>						
I am planning to engage in sustainable behaviour.	0.939			0.915		
I will make an effort to engage in sustainable behaviour.	0.95			0.92		
I am willing to engage in sustainable behaviour.	0.95			0.915		
Sustainable Behaviour		0.917	0.612		0.921	0.699
I usually join in community efforts dedicated to protecting a cultural heritage site.	0.808			0.848		
I do volunteer work for a group that helps the protection of a cultural heritage site.	0.841			0.846		
I support the protection of a cultural heritage site with money.	0.734			–		
I have the intention to donate money to a cultural heritage site for its protection.	0.724			–		
I think stricter mandatory regulations should be developed for visitors to minimise their negative impacts on cultural heritage sites.	0.715			–		
I think the scientific monitoring of the state of a cultural heritage site should be increased to ensure its protection.	0.818			0.829		
After visiting a cultural heritage site, I leave the place as it was before.	–			0.815		
I convince someone to respect the cultural heritage site they are visiting.	0.824			0.843		

Table 3. Discriminant validity

Construct	ATT	PB	PBC	PN	SB	SBI	SN
During COVID-19							
<i>ATT</i>	0.936						
<i>PB</i>	0.521	0.925					
<i>PBC</i>	0.715	0.653	0.823				
<i>PN</i>	0.712	0.728	0.647	0.926			
<i>SB</i>	0.526	0.669	0.566	0.72	0.782		
<i>SBI</i>	0.59	0.748	0.68	0.789	0.709	0.946	
<i>SN</i>	0.643	0.744	0.768	0.717	0.626	0.757	0.937
After COVID-19							
<i>ATT</i>	0.903						
<i>PB</i>	0.668	0.902					
<i>PBC</i>	0.742	0.729	0.854				
<i>PN</i>	0.807	0.711	0.710	0.919			
<i>SB</i>	0.713	0.655	0.613	0.797	0.836		
<i>SBI</i>	0.789	0.734	0.733	0.877	0.782	0.917	
<i>SN</i>	0.767	0.743	0.835	0.769	0.670	0.777	0.924

Structural Model Assessment

The structural model describes the relationships between the LVs. The explanatory variance (R^2) and the path coefficient significance were derived to evaluate the structural model. The R^2 value was measured according to the numerical standard stipulated by Chin (1998), namely 0.67 (substantial), 0.33 (moderate), and 0.19 (weak). The endogenous LVs in this study were PN, SBI, and SB, with the R^2 values of the three LVs exceeding 0.5 in the two COVID-19 periods (see Table 4). The results propounded that the model achieved a high explanatory ability for PN, SBI, and SB.

Table 4. The R^2 results

Endogenous Latent Variable	R^2
During COVID-19	
<i>PN</i>	0.515
<i>SBI</i>	0.723
<i>SB</i>	0.502
After COVID-19	
<i>PN</i>	0.591
<i>SBI</i>	0.612
<i>SB</i>	0.812

The significance of the statistical results was indicated by the p-value (see Table 5). The data collected during the COVID-19 pandemic demonstrated that the p-values of H1m and H3m exceeded 0.05, which did not support both hypotheses. Contrarily, the impact of tourists' PBC and past behaviours on SBI was significant at the 0.05 level, which supported H2m and H4m. Moreover, tourists' SN significantly impacted PN, PN significantly impacted SBI, and SBI significantly impacted SB at the 0.001 significance level, which supported H5m, H6m, and H7m. The final results of H3p, H4p, H5p, H6p, and H7p in the post-COVID-19 period were the same as in the first period and were supported in all except H3p. Comparatively, tourists' attitude and PBC were changed from insignificantly to significantly impacting SBI after the COVID-19 pandemic, whereas PBC was discovered to insignificantly impact SBI in the post-COVID-19 period. Therefore, H1m and H2p were not supported.

Table 5. Hypothesis testing results

Hypothesis	Path Coefficient	P-value	Supported
During COVID-19			
H1m: ATT → SBI	-0.077	0.254	No
H2m: PBC → SBI	0.138	0.018	Yes
H3m: SN → SBI	0.233	0.052	No
H4m: PB → SBI	0.208	0.032	Yes
H5m: SN → PN	0.717	0.000	Yes
H6m: PN → SBI	0.435	0.000	Yes
H7m: SBI → SB	0.709	0.000	Yes
After COVID-19			
H1p: ATT → SBI	0.125	0.027	Yes
H2p: PBC → SBI	0.062	0.202	No
H3p: SN → SBI	0.097	0.099	No
H4p: PB → SBI	0.133	0.009	Yes
H5p: SN → PN	0.769	0.000	Yes
H6p: PN → SBI	0.563	0.000	Yes
H7p: SBI → SB	0.782	0.000	Yes

Discussion

The findings demonstrate that the relationship between tourists' attitudes and SBI changed after the COVID-19 pandemic. Tourists' attitudes insignificantly impacted SBI (H1m) during the pandemic, whereas the impact was significant (H1p) after the pandemic. Previous studies revealed that tourists' attitudes significantly impacted BI (Fenitra et al., 2021; Lee & Jan, 2017; Panwanitdumrong & Chen, 2021; Rao et al., 2022; C. Wang et al., 2018) in terms of environmentally sustainable demeanours.

This study investigated the Confucius site, which incorporated cultural factors into environmentally sustainable behaviours. The results suggest that tourists exhibited ambiguous attitudes toward SBI before the COVID-19 pandemic. Nevertheless, the pandemic elevated tourists' intentions to be sustainable in daily work and life, including tourism, which demonstrates that the COVID-19 outbreak was a pivotal element in promoting tourists' SB and sustainable tourism development.

The present study discovered that tourists' PBC changed between the two COVID-19 periods. The impact on tourists' BIs was positive (H2m) during the pandemic, which is consistent with past research. Subsequently, no significant impact (H2p) was demonstrated (Lin et al., 2018; Liu et al., 2020), which posits that tourists' PBC transition to SBI remained at a low level compared to attitudes towards sustainability. The tourists also exhibited lower confidence in adopting SB during travel when the frequency of tourism activities decreased owing to the COVID-19 pandemic. In addition, the SN impact on tourists' SBI was insignificant (H3m and H3p) in both periods, which suggest that the perception of tourist peers at cultural heritage sites did not produce a direct and positive impact on SBI.

Past behaviours and PN significantly impacted tourists' SBI (H5 and H6) (Han et al., 2016; Lin et al., 2018; Liu et al., 2020) while SBI also directly impacted SB (H7) (Lee & Jan, 2017; Panwanitdumrong & Chen, 2021; C. Wang et al., 2018). The findings postulate that tourists supported sustainable tourism demeanours from the perspective of personal morality and experience regardless of the pandemic impact. While SN significantly impacted PN (H4), the mediating effect of PN could not be determined as SN insignificantly influenced tourists' SBI. The results imply that tourists' SB were primarily attributable to attitudes, PN, and past behaviours, which constitute personal values, ethical standards, and experiences that positively promote SBI. Essentially, self-initiatives are more significant than objective factors.

Conclusion

The results suggest that past behaviours and PN are vital factors contributing to tourists' SBI. Attitudes and PBC were altered by the COVID-19 pandemic, wherein the impact of attitudes was enhanced while the PBC influence was diminished. Meanwhile, the impact of SN remained insignificant during and after the pandemic. Resultantly, the role of PN as a mediator in the association between SN and SBI remains ambiguous.

Theoretical Implications

The current study demonstrates that cultural heritage tourists' intrinsic factors, such as attitudes, PBC, and SN, are the primary SBI drivers with certain influences engendered by the COVID-19 pandemic. The theoretical framework proposed in this

study was an extension of TPB to improve model rigour and comprehensiveness by introducing two critical factors, namely past behaviours and PN. The results indicate that the extended TPB is more relevant in cultural heritage tourism, which contributes valuable insights into tourists' SBI for future cultural heritage tourism.

Practical Implications

Cultural heritage site managers should increase the awareness of sustainable tourism and guide SB while enhancing publicity and providing education to effectively enhance tourists' perceptions of social pressure, especially the opinions of family and close friends. In this way, tourists will be more encouraged to engage in SB. Furthermore, site managers should develop more interactive tourism experiences, which can directly elevate tourists' interest while improving the attractiveness to potential visitors through social media. The Confucius site contains a more educational and cultural atmosphere, and Confucius actors' direct behavioural guidance can be more effective than propaganda videos and pamphlets in promoting the cultural heritage site. Therefore, strengthening personal SB during play and entertainment activities is a positive and effective approach to increasing tourists' SB.

Limitations and Future Research

The present study contains several limitations that need to be acknowledged. The study was conducted during and after the COVID-19 pandemic, in which tourism moved from an inactive state to a normal state. Thus, the findings might not apply to a period of stable tourism development. Future researchers can further verify relevant impacts on SBI based on the current theoretical framework. Moreover, the research venue may not produce the same result for cultural heritage sites worldwide as the Confucius culture and values are more influential and frequently advocated in China compared to other nations. Hence, cultural and geographical differences observed in different study contexts limit the applicability of the study results. In this respect, future studies can simultaneously collect data from multiple sites to facilitate data comparison and outcome generalisation while reducing regional restrictions.

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