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ABSTRACT

In light of the recent conflicts in Carthage over land use, cultural heritage preservation, and sustainable tourism, this work utilized a value-belief-norm (VBN) theoretical framework to consider psychological antecedents of residents' behavioral intentions to support cultural heritage tourism. As such, personal values, cultural worldview, awareness of consequences, ascription of responsibility, and subjective norms were considered antecedents of intentions to support cultural heritage tourism. Data were collected from 475 Carthage residents in nine neighborhoods adjacent to UNESCO World Heritage Sites using an on-site self-administered questionnaire. The proposed model was assessed through confirmatory factor analysis (to demonstrate sound psychometric properties across all 11 factors within the model), followed by structural equation modelling. Overall, 15 of the 19 proposed hypotheses were supported, ultimately contributing to 28% of the variance explained in residents' behavioral intentions to support cultural heritage tourism. This work not only provides support for the utilization of the VBN model within the context of cultural heritage tourism, it also deepens our understanding of the theoretical framework through the inclusion of the multi-dimensional construct cultural worldview.

Introduction

Though consumer demand is an important component to consider in planning for sustainable tourism, in order for tourism to be considered sustainable, it takes the 'buy-in' or support of the local community and its residents to be as successful as possible (Lee, 2013). Otherwise, the risk of running counter to local desires and interests can be great for destination marketing organizations and other tourism planning entities. This is especially true in contexts when considering the vulnerable and fragile natural and cultural resources that define a particular destination (Su

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& Wall, 2014). One such place that is well-known for its cultural heritage is the historic city of Carthage, Tunisia (in Northern Africa)—with its numerous tangible cultural heritage structures and artifacts presently under growing pressures of encroachment from 'urban sprawl' (Megeirhi et al., in press), threatening key archeological sites throughout the Ancient Mediterranean city.

Lying 15 kilometers northeast of Tunisia's capital, Carthage is rich in history with heritage and artifacts dating back to Ancient Punic Carthage, Roman Christendom, Vandals, Byzantine Empire, and early Arab-Muslim conquerors (Miles, 2011). Carthage is comprised of 13 tangible district archaeological zones dedicated by UNESCO as World Heritage Sites. These sites make up roughly four-square kilometers, encompassing 63.58% of the total area of Carthage.

To protect the cultural-heritage integrity throughout Carthage, UNESCO has been able to protect the archaeological and historical world heritage sites through three dedications occurring in 1985, 1994, and 1996 (UNESCO, 2019a). Though these cultural heritage sites are protected, a growing concern about unplanned development (given limited space for development) adjacent to archaeological ruins is taking shape—so much so that UNESCO has put numerous world heritage sites within Carthage under watch as potentially threatened (UNESCO, 2019b). A draft of the recent 'state of conservation report' written by the World Heritage Centre speaks to the ongoing concern: "The expansion of unplanned and uncontrolled constructions in parts of the serial property is of concern for the adverse impacts these constructions may have on the attributes that convey the Outstanding Universal Value (OUV) of the property, including its authenticity and integrity" (UNESCO, 2019b). According to a Reuters' (2019) columnist, many homes have been developed illegally through corruption and nepotism since the Tunisian Revolution of 2011—in some cases on top of ruins (e.g., Roman Cisterns of La Malga) or in close proximity to ruins (e.g., Carthage Circus). As a result, many residents are paying the price by having their homes demolished as they are faced with acknowledging the consequences of their actions and the realization that their developments have global impacts (Altekamp & Khechen, 2013). Despite the wide publicity Carthage and the world heritage sites have received, no one has assessed the degree of support Carthage residents have for cultural heritage tourism within their community. Gauging this support (and what leads to such support) among residents may provide the best avenue forward in effectively planning for the sustainability of unique cultural heritage resources within Carthage.

Unfortunately, minimal research has focused on the behavioral intentions of residents to support cultural heritage tourism (see Jaafar et al., 2015; Rasoolimanesh et al., 2017 for examples of how attitudinal support was measured, not behavioral intentions to support per se). Knowing the level of residents' support for cultural heritage tourism will serve to foster greater sustainability (Alazaizeh et al., 2019) as destination managers plan to preserve key WHS like those in Carthage. Even less work has been undertaken that centers on the psychological antecedents contributing to the behavioral intentions to support cultural heritage tourism (Mustafa, 2015). One theoretical framework that has received growing attention within the tourism literature is the value-belief-norm (or VBN) model (Stern, 2000; Stern et al., 1999) to explain behavioral intentions. To date, no one has considered the VBN model within the context of cultural heritage tourism, especially when it comes to gauging residents' intentions to support this burgeoning form of tourism. Further, no one has incorporated individuals' cultural worldview within the existing use of the VBN in explaining intentions to support cultural heritage tourism. Focusing on the historic city of Carthage, with its ancient ruins and vulnerable World Heritage Sites, the aim of this study is to test the VBN theoretical model whereby a host of psychological antecedents (e.g., personal values, cultural worldview, awareness of consequences, ascription of responsibilities, and subjective norms) are considered to ultimately explain residents' intentions to support cultural heritage tourism within their community. More specifically, a linear causal chain is tested to examine the following relationships: personal values → cultural worldview → awareness of consequences → ascription of responsibilities → subjective norms → intentions to support cultural heritage tourism. This approach is in keeping with the established literature surrounding the application of the VBN theoretical framework.

Literature review

Conceptual orientation: the value-belief-norm model

The origin of the value-belief-norm (VBN) model is considered to have developed from two complimentary theoretical approaches—Values Theory (Schwartz & Bilsky, 1987) and Norm Activation Theory (Schwartz, 1977). The former theory advanced the notion that individuals' attitudes and behaviors are a function of deeply-held "enduring, trans-situational beliefs about desired end states of social interaction" (Landon et al., 2018, p. 959). Values then, which appear in various forms, are more stable constructs that inform the beliefs and attitudes about specific objects as well as how we act in regards to such objects (Schwartz, 1994). Norm Activation theory, the second theoretical framework, was originally developed by Schwartz (1977) to explain individuals' altruistic behaviors (i.e., pro-social behaviors). Within the accompanying theoretical model, Schwartz (1977) included three antecedents to such behaviors: awareness of consequences, ascription of responsibility, and personal norms. It was Stern (2000) and Stern et al. (1999) that are credited with the development of the current value-belief-norm (VBN) model, claiming that these two theoretical frameworks explain the moral normative basis of "taking action with pro-environmental intent" (p. 441). It goes without saying that the origin of VBN comes out of environmental psychology and environmental social psychology literature, whereby oftentimes the dependent variable considered within proposed models are related to pro-environmental behaviors (Han et al., 2018). However, a main focus of this current paper is to broaden the application of the VBN in considering residents' intentions to engage in sustainable cultural heritage tourism.

The VBN theoretical model establishes a causal chain of psychological antecedents of one's likelihood to act in a certain manner. This causal chain begins with personal values (i.e., measured as egoistic, altruistic, and biospheric values) which influences an individual's environmental or ecocentric worldview (Schultz, 2001). Such a worldview explains an awareness of consequences for acting in a certain manner. This awareness of consequences then contributes to an ascription of responsibility. According to Landon et al. (2018), awareness of consequences and ascription of responsibility are not only prerequisites to the activation of moral norms, but they "refer to beliefs that one's behaviors may influence valued-objects, and that mitigating those influences is within one's control" (p. 959). Norms then ultimately influence intentions to engage in particular behaviors. Over the last two decades, many have confirmed the relationships between constructs within the VBN theoretical model that Stern (2000) and Stern et al. (1999) initially put forward.

Not surprisingly, the VBN model has been employed predominantly within research focusing on pro-environmental behaviors, especially concerning research on climate change (Nilsson et al., 2004; Sanderson & Curtis, 2016), consumers' decision making in selecting products or services (Jansson et al., 2011; Stern, 1999), and visitors to protected areas (Esfandiar et al., 2019; van Riper & Kyle, 2014). As of late, the VBN model has been utilized within sustainable tourism research primarily focusing on pro-sustainable tourism behaviors (Han et al., 2017; Han et al., 2018; Kiatkawsin & Han, 2017; Landon et al., 2018) and the selection of green lodging options (Choi et al., 2015; Han, 2015; Rahman & Reynolds, 2016). What many of these studies have demonstrated is that values (primarily either egoistic values or altruistic values) are not always significant predictors in the model (Han et al., 2017; Han et al., 2018; Kiatkawsin & Han, 2017; Landon et al., 2018). Furthermore, norms (referred to as personal, moral, pro-environmental personal, or a sense of obligation to take pro-environmental action) were either the most salient (Choi et al., 2015; Han et al., 2017; Han et al., 2018; Kiatkawsin & Han, 2017; Landon et al., 2018) or second-most salient (Han, 2015) in explaining behavioral intentions.

With its history rooted in the environmental psychology and environmental social psychology literatures, it makes sense that the VBN theoretical model would be popular among tourism researchers in explaining pro-environmental behaviors of tourists. However, focusing solely on the environment when considering sustainable tourism is at the cost of not acknowledging the

other two legs (i.e., economic or social-cultural) of the proverbial 'triple-bottom-line' stool. As such, the tourism literature has yet to employ the VBN within the context of cultural heritage tourism, especially focusing on residents' intentions to engage in sustainable cultural heritage tourism. This paper intends to do just that.

Intentions to support cultural heritage tourism

Though the travel and tourism literature is abounding in studies involving residents' perspectives surrounding phenomena pertaining to tourism or tourism development (Stylidis, 2018; Woosnam et al., 2018), little work (see Alazaizeh et al., 2019) has focused on residents' support for cultural heritage tourism in the context of world heritage sites. Though, to be fair, work on the topic is gaining some momentum. This is arguably a function of the impending popularization of world heritage sites and the realization that including residents and their perspectives in the process is crucial in ensuring that development and visitor management proceeds in a sustainable fashion (World Tourism Organization, 2012).

Some tourism researchers have acknowledged the importance of including residents' perspectives concerning support for cultural heritage preservation and sustainable tourism near World Heritage Sites (WHS). In looking at resident participation in decision making for the Mutianyu Great Wall WHS in Beijing, China, Su and Wall (2014) found that community locals received benefits with minimal participation. The authors further found that local opinions were influenced by different levels of impacts from tourism (Megeirhi et al., in press). Most recently, Alazaizeh et al. (2019) found that local residents, business owners, and government officials all indicated some degree of support for preserving Petra, a WHS in Jordan. Such findings highlight the importance of residents' support for cultural heritage tourism and how these perspectives help to foster greater sustainability in the context of planning for WHS management.

Rasoolimanesh, Jaafar, and colleagues are at the forefront of research embracing residents' perspectives surrounding WHS—though this is somewhat limited to Malaysia. Rasoolimanesh et al. (2017) recently focused on community participation in WHS conservation and found motivation had the "greatest positive effect on the low level of community participation, whereas opportunity had the greatest effect on high level of participation" (p. 142) among residents. Utilizing stakeholder theory to explain residents' perceptions of sustainable tourism development in the midst of a Malaysian WHS, Rasoolimanesh and Jaafar (2017) revealed differing negative perceptions across demographics such as age, education, and economic involvement in tourism. Further, the authors found that positive perceptions led to a positive effect on support for and participation in tourism development. Focusing on youth residents living near the same WHS in Malaysia, Jaafar et al. (2015) revealed that positive perceptions of conservation programs had a positive effect on involvement in promoting and supporting the WHS. Interestingly enough, the authors reported a positive relationship between negative perceptions and sense of belonging among the youth surveyed.

Much of the existing work surrounding residents' perceptions of and support for cultural heritage tourism (situated in proximity to World Heritage Sites) has not focused on matters of equity in gauging locals' behavioral support for cultural heritage tourism or preservation. Timothy (2011) argues that such neglect will only perpetuate a divide and make it difficult to sustainably plan and manage areas adjacent to such world-renowned attractions. Another observation of the existing work pertaining to residents and support for cultural heritage tourism is that resident populations under examination are largely treated as homogenous (with the noted exception of the work by Rasoolimanesh & Jaafar, 2017). This implicitly discounts perspectives of disadvantaged residents living adjacent to WHS (Jamal & Camargo, 2013). Furthermore, such an oversight downplays any power struggles and consideration of power in determining how a WHS should be preserved or managed.

Ultimately, societal and historical contexts (of how different resident groups interact along with existing relationships among individuals) in many of the reviewed studies are disregarded. One may even go so far as to point out the irony in not acknowledging some of the local power struggles and inequity concerns in the face of trying to "preserve" heritage and history of the place and its structures. Though the research concerning residents' support for cultural heritage tourism is in early stages, the time is never better to advance theoretical models to help explain residents' behavioral intentions to support such a burgeoning form of sustainable tourism. The VBN model may hold some necessary answers.

Hypotheses and hypothesized model

Based on previous work focusing on the VBN model (Landon et al., 2018; Stern, 2000; Stern et al., 1999), we propose 19 sub-hypotheses across seven hypotheses that reflect various psychological antecedents of behavioral intentions to support cultural heritage tourism in Carthage. Three slight modifications to the established VBN model are made, however, in formulating the proposed model. The first is renaming 'biospheric values' (Landon et al., 2018; Stern, 2000; Stern et al., 1999) to 'cultural-centric values' with the same root content (simply changing "nature" to "culture and heritage") of unity, protection, and world of beauty within the construct.

The second is considering 'cultural worldview' (based on the work of Choi et al., 2007) in place of 'eco-centric environmental worldview' that Landon et al. (2018) employed or the New Ecological Paradigm (NEP) that Dunlap et al. (2000) utilized. Choi et al. (2007) developed the cultural worldview scale (CWS) with four dimensions: intercommunity and intergenerational linkages (i.e., perceived connectedness between people of different generations and different cultural backgrounds per Choi & Fielding, 2016), recognition of cultural values (i.e., understanding importance of cultural diversity per Choi & Fielding, 2016), awareness of cultural loss (i.e., acknowledgement that cultural heritage is currently disappearing per Choi & Fielding, 2016), and preservation of traditions and customs (i.e., recognition that tangible and intangible aspects of culture are not only important but worthy of preservation per Choi & Fielding, 2016). As Choi et al. contend, in their quest to develop the CWS in place of the NEP, each of the dimensions reflects either "direct or indirect benefits people enjoy from the preserved culture, while cultural loss does not necessarily mean the disappearance of what people like to keep" (p. 333). To date, the scale has been utilized minimally—to initially develop each of the dimensions and segment individuals (Choi et al., 2007) and further refine the scale to consider it in relation with visitors' willingness to pay for cultural heritage protection (Choi & Fielding, 2016).

The final amendment is employing 'intent to support cultural heritage tourism' (based on the work of Harrison-Walker, 2001 and Palmer et al., 2013) as the ultimate dependent variable in the VBN model, in place of 'pro-environmental behavior,' which Stern and colleagues had initially utilized in their seminal work. Each of these modifications were made to reflect the current cultural context of the study.

To begin, we propose that egoistic values held by tourists will be negatively associated with a cultural worldview. On the contrary, we assert that other personally-held values (i.e., altruistic and cultural-centric) will be positively related to such individuals' cultural worldview. In keeping with the established VBN model, we propose that an acceptance of a cultural worldview (as measured through four constructs: intercommunity and intergenerational linkages; recognition of cultural values; awareness of cultural loss; and preservation of tradition and customs) leads to an awareness of the potential consequences (i.e., awareness of consequences) brought on by unplanned tourism. Next, we hypothesize that this awareness of the consequences of unplanned tourism is positively related to an ascription of responsibility to alleviate potential harms to cultural heritage. An ascription of responsibility is then proposed to positively affect subjective norms regarding one's actions in regards to supporting sustainable cultural heritage tourism.
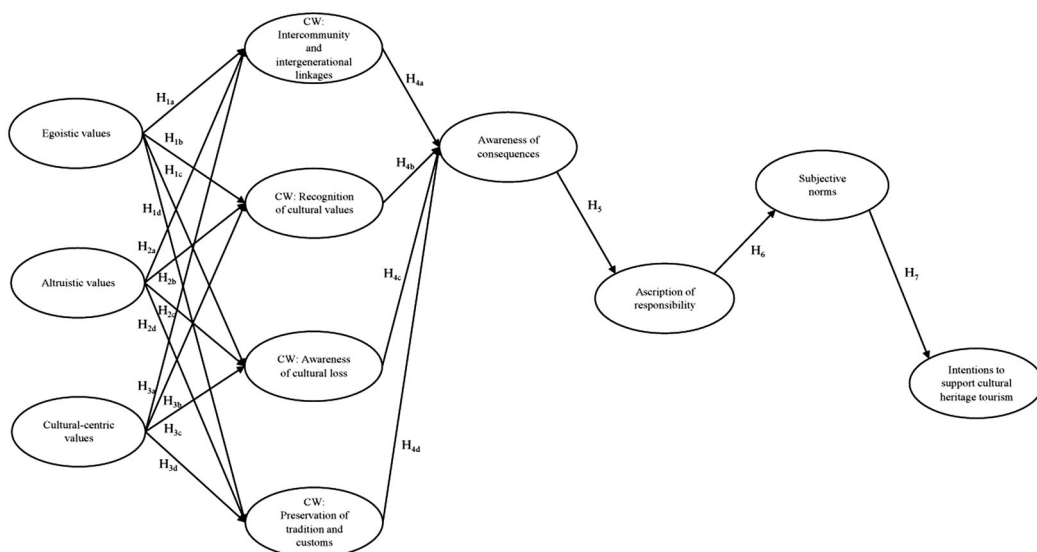
Figure 1. Proposed VBN model of psychological antecedents of intentions to support cultural heritage tourism.

These subjective norms then in turn will be positively related to intentions to support cultural heritage tourism. A graphical summary of the VBN constructs and the corresponding relationships between each are summarized in Figure 1. Further, the 19 sub-hypotheses are as follows:

H_{1a}-H_{1d}: Egoistic values will be negatively related to cultural worldview through: a) intercommunity and intergenerational linkages; b) recognition of cultural values; c) awareness of cultural loss; and d) preservation of tradition and customs.

H_{2a}-H_{2d}: Altruistic values will be positively related to cultural worldview through: a) intercommunity and intergenerational linkages; b) recognition of cultural values; c) awareness of cultural loss; and d) preservation of tradition and customs.

H_{3a}-H_{3d}: Cultural-centric values will be positively related to cultural worldview through: a) intercommunity and intergenerational linkages; b) recognition of cultural values; c) awareness of cultural loss; and d) preservation of tradition and customs.

H_{4a}-H_{4d}: Cultural worldview through: a) intercommunity and intergenerational linkages; b) recognition of cultural values; c) awareness of cultural loss; and d) preservation of tradition and customs will each be positively related to awareness of consequences.

H_5: Awareness of consequences will be positively related to ascription of responsibility.

H_6: Ascription of responsibility will be positively related to subjective norms.

H_7: Subjective norms will be positively related to intentions to support cultural heritage tourism.

Methods

Study context

This study was undertaken in the historical-rich coastal city of Carthage, Tunisia—nestled along the Mediterranean Sea in Northern Africa. The city, situated roughly 15 kilometers northeast of the country's capital—Tunis—spans approximately three kilometers in length along the coast. Carthage is home to 13 key tangible UNESCO-dedicated World Heritage Sites, including "the

acropolis of Byrsa, the Punic ports, the Punic Tophet, the necropolises, theatre, ampitheatre, circus, residential area, basilicas, the Antonin baths, Malga cisterns, and archaeological reserve" (UNESCO, 2019a). With a history dating back to 9th century B.C., Carthage has experienced many civilizations covering the Ancient Punic era, Roman Christendom, Vandals, Byzantine Empire, and early Arab-Muslim conquerors (Miles, 2011).

Carthage is also rich in intangible heritage which is demonstrated through cultural aspects. This intangible heritage is manifested in oral performances and traditions, social practices, local tours of historic architectural structures, and the annual international Carthage festival. Per UNESCO (2020) definitions, Carthage possesses intangible cultural heritage that mixes both traditional and contemporary practices and is inclusive, representative, and community-based. Given this one-of-a-kind historical setting, rich in cultural archaeology and artifacts, as well as intangible cultural aspects, Carthage is one of the key destinations throughout all of Tunisia.

Though UNESCO was swift to dedicate roughly two-thirds of Carthage as World Heritage Sites at three different points in time (i.e., 1985, 1994, and 1996), conflict surrounding land disputes has upset the balance of sustainability among residents, resources, and visitors over the last half-century (Altekamp & Khechen, 2013; UNESCO, 2019b). Most recently, illegal land acquisitions, artifact removal, and land demolition in Carthage have caught the attention of a globally-engaged audience (Reuters, 2019), as UNESCO is tasked with preserving the integrity of cultural heritage while the Tunisian local and national government entities wrestle with how to promote and provide opportunities for tourists to experience the city and its numerous sites. Caught in the middle are residents—some of whom are responsible for illegal land acquisitions and many of whom are not—with heterogeneous perspectives concerning history, heritage, and tourism within Carthage (Megeirhi et al., in press).

Data collection and sampling

Most recent population figures of Carthage (per the National Institute of Statistics, Statistics Tunisia) claim that 17,010 residents across nine distinct communities, live within the city (Statistics Tunisia, 2014). These communities are comprised within two geographical areas: Area No. 1, which includes Salmppo, Byrsa, Dermech, Hanibal, Presidential, Hamilcar, Sidi bou Said, is home to 7,950 residents; Area No. 2, which includes Mohammed Ali and El Yasmina, is home to 9,060 residents.

Data for this study were collected between February and April of 2018, via a survey conducted among Carthage residents living in the nine communities listed above. This time of the year was deemed ideal given it was during the off-peak tourist season, and many residents would be available, with less likelihood of tourist crowding. Following a systematic sampling scheme with a random start, one researcher from the team was positioned in several well-trafficked public locations throughout Carthage (in both Area No. 1 and Area No. 2 communities), staged ready to intercept every third individual that walked past. This is in keeping with data collection protocol utilized by Woosnam and Aleshinloye (2013). Once potential participants were briefed on the aim of the study and that their responses would be anonymous, they were asked to participate and handed a self-administered questionnaire. It should be mentioned that the researcher randomly selected days of the week and times of the day for data collection so as to capture a diverse sample of survey participants. Additionally, careful attention was paid by the researcher so as to not exclude individuals based on age, gender, community residence, or marital status. Such an approach was undertaken to reduce potential sampling bias.

Questionnaires were initially prepared in English and then translated into Arabic using the back-translation method (Perrewé et al., 2002). To ensure that the content of each item was cross-linguistically comparable and generated the same meaning, two independent professionals fluent in both languages, further checked the questionnaire. Following this, the questionnaire

was pre-tested among a pilot sample of 25 local residents to check for item clarity and ease of completion. Once the questionnaire was refined, it was ready for distribution among residents. Throughout the three-month data collection period, 600 residents were intercepted and asked to participate. From those, 475 agreed and completed a questionnaire (providing a response rate of 79.1%). Upon careful inspection of the questionnaire, it was found that 10 individuals completed less than 50% of the instrument. This resulted in 465 usable questionnaires for data analysis.

Measures

The items used to measure constructs within the proposed VBN model originate from prior research. The three value constructs (i.e., egoistic, altruistic, and cultural-centric) and corresponding items were adapted from the work of van Riper and Kyle (2014) and Landon et al. (2018). As noted above however, wording for the cultural-centric values items was slightly modified to reflect "culture and heritage", in place of "nature" as previously used. These nine items (three across each of the three values constructs) were measured on a 7-point Likert scale, where 1 = not all important and 7 = very important. Cultural worldview was assessed using 19 items across four constructs (i.e., intercommunity and intergenerational linkages—six items; recognition of cultural values—six items; awareness of cultural loss—three items; and preservation of tradition and customs—four items) from the work of Choi et al., 2007), with the stem, "please indicate your agreement with the following items," where 1 = strongly disagree and 7 = strongly agree.

Seven items from the work of van Riper and Kyle (2014) and Raymond et al. (2011) were used to measure awareness of consequences. These items were presented using a 7-point Likert scale, where 1 = not at all a problem to 7 = a very serious problem, using the stem, "to what extent do you feel each of the following are problems created by travel and tourism." Ascription of responsibility was measured using six items on a 7-point Likert scale, where 1 = strongly disagree and 7 = strongly agree (based on work of Landon et al., 2018). Subjective norms were measured using seven items from the work of Han et al. (2010) and Wu and Chen (2018), with items presented on a 7-point Likert scale, where 1 = strongly disagree and 7 = strongly agree. Finally, eight items were employed to measure intentions to engage in sustainable cultural heritage tourism. These items, adapted from the work of Palmer et al. (2013) and Harrison-Walker (2001), were presented on a 7-point Likert scale, where 1 = very unlikely and 7 = very likely. Actual wording of the items used for analysis can be found in Table 2 below.

Analysis

In undertaking analysis for this research, a two-step structural modeling approach was employed (Anderson & Gerbing, 1988). Initially, a measurement model (employing confirmatory factor analysis, or CFA) was formulated to confirm the factor structures of all constructs included in the proposed model, as well as examine psychometrics (i.e., reliability and validity estimates). Following this, a structural path model was formulated to test each of the proposed 19 hypotheses. Both CFA and structural equation modeling were undertaken using AMOS v.25. The combination of SPSS and AMOS has been commonly employed in recent studies (i.e., Kiatkawsin & Han, 2017; Ramkissoon et al., 2018; Ribeiro et al., 2018; Ribeiro et al., 2017) mainly because of a combination of user-friendliness and the ease of visual illustration when working with conceptual models (Nunkoo et al., 2013).

Prior to undertaking the CFA, we assessed the normality of the data by analyzing the values of both skewness and kurtosis that are known to influence the analysis of variances and covariances underlying SEM. A rescaled value of greater than 2 for skewness and greater than 7 for kurtosis indicate a departure from normality (Ribeiro et al., 2018; West et al., 1995). Results provided by AMOS demonstrated that no item presented a skewness and kurtosis values greater 2

and 7 respectively, demonstrating the normality condition underlying the maximum likelihood estimation of SEM and the suitability of data collected in Carthage, Tunisia.

To gauge psychometrics for each factor within the model, composite reliabilities were assessed to ensure the estimates exceeded the threshold of 0.70, along with average variance extracted (AVE) estimates greater than 0.50, per Hair et al. (2018) recommendations. Three forms of validity were also assessed: convergent validity, discriminant validity, and nomological validity. Convergent validity is present when standardized factor loadings exceed 0.50 and corresponding *t* values are significant (Hair et al., 2018). Discriminant validity is established if the factor correlations are less than the square root of the AVEs (Hair et al., 2018). Finally, nomological validity is assessed through the testing of construct relationships within the model.

Model fit for both the measurement model and structural path model was assessed through the examination of incremental (i.e., Tucker-Lewis Index or TLI and comparative fit index or CFI) and absolute model (i.e., root mean square error of approximation or RMSEA and standardized root mean square residual or SRMR) fit indices. Following Hu and Bentler (1999) recommendations, fit is good if TLI and CFI are $\geq$ 0.90 and RMSEA and SRMR are $\leq$ 0.07.

Results

Resident profile

A number of observations can be made from Table 1 in regards to the study's sample. The gender composition was nearly identical among men and women participants. In terms of age, the sample was relatively young, with 80% of individuals under the age of 50. A preponderance of participants was either single (49.5%) or married (43.4%). Nearly half of the participants had either a secondary or vocational educational background (44.6%), with 42.2% having completed an undergraduate degree. The most commonly reported occupations were employment in a non-tourism sector (29.7%), followed by business owners (20.4%) and students (20.4%). Mirroring this, most individuals (56.8%) reported they derived less than 10% of their household income from tourist spending. Finally, most of the sample (54.6%) participants had lived in Carthage for at least 20 years.

Measurement model

Based on the proposed 11-factor model, a two-step analysis involving CFA and SEM was employed, following the recommendation of Anderson and Gerbing (1988). As such, the CFA was undertaken for two primary purposes: 1) to establish a sound measurement model for subsequent SEM analysis and 2) to confirm the proposed factor structure so that psychometric assessment could be carried out. The CFA was undertaken utilizing data from the 465 completed questionnaires, using AMOS v.25. The analysis (see results in Table 2) began by adding one factor at a time (with corresponding items) into the model to establish an 'ideal model,' reflecting all cross-loaders and error covariances. So as to trim this 'ideal model,' problematic items were purged from the model if their standardized factor loadings fell below 0.50 (Hair et al., 2018) or if they loaded onto incorrect factors (Woosnam et al., 2018). Based on this criteria, seven items (from the initial 55 items included in the CFA) were removed: three items from cultural worldview (i.e., "culture helps us to live with people of different backgrounds," "cultural heritage means much to my well-being," and "students need to learn what their culture is"); one item from awareness of consequences (i.e., "modified culture or cultural erosion"); two items from subjective norms (i.e., "most people who are important to me think I should support cultural heritage preservation efforts in my town" and "most people who are important to me would want me to support cultural heritage preservation efforts in my town"); and one item from intentions to support cultural heritage tourism (i.e., "visit tourist attractions").

Table 1. Resident profile.

Socio-demographic variable	n	%
Gender (n = 465)		
Male	229	49.2
Female	236	50.8
Age (n = 465)		
18-29	162	34.8
30-39	110	23.7
40-49	100	21.5
50-59	64	13.8
≥60	29	6.2
Marital status (n = 464)		
Single	230	49.5
Married	202	43.4
Divorced/Separated	19	4.1
Widowed	13	2.8
Education level (n = 450)		
Primary education	23	8.2
Secondary education	130	28.0
Vocational education	77	16.6
Undergraduate education	199	42.2
Graduate education	21	4.5
Occupation (n = 465)		
Employed within tourism and cultural heritage industry	62	13.3
Employed in other sector	138	29.7
Business owner	95	20.4
Unemployed	42	9.0
Student	95	20.4
Retired	33	7.1
Income derived from tourist spending (n = 465)		
<10%	264	56.8
10–19%	88	18.9
20–39%	53	11.4
30–49%	34	7.3
≥40%	26	5.6
Years lived in community (n = 465)		
<5 years	22	4.7
5–9 years	42	9.0
10–14 years	41	8.8
15–19 years	106	22.8
≥20 years	254	54.6

The final measurement model contained 48 items: egoistic values (three items; β ranging from 0.67 to 0.82); altruistic values (three items; β ranging from 0.72 to 0.83); cultural-centric values (three items; β ranging from 0.74 to 0.79); cultural worldview—intercommunity and intergenerational linkages (five items; β ranging from 0.65 to 0.91); cultural worldview—recognition of cultural values (three items; β ranging from 0.51 to 0.82); cultural worldview—awareness of cultural loss (three items; β ranging from 0.78 to 0.93); cultural worldview—preservation of tradition and customs (four items; β ranging from 0.82 to 0.88); awareness of consequences (six items; β ranging from 0.62 to 0.93); ascription of responsibility (six items; β ranging from 0.63 to 0.90); subjective norms (five items; β ranging from 0.63 to 0.81); and intentions to support cultural heritage tourism (seven items; β ranging from 0.64 to 0.85). All items had a β in excess of 0.50, with 10 falling between 0.62 and 0.69. The model (Table 3) yielded a $\chi^2(df) = 2263.70(989)$, $\chi^2/df = 2.29$, with the following fit indices: comparative fit index (CFI) = 0.92; Tucker Lewis index (TLI) = 0.91; root mean square error of approximation (RMSEA) = 0.05; and standardized root mean square residual (SRMR) = 0.06. According to Browne and Cudeck (1993), a TLI and CFI of at least 0.90, indicates an acceptable incremental fit of the data. Also, an RMSEA and SRMR value below 0.07 is considered a good absolute fit of the data (Hu & Bentler, 1999).

Table 2. Measurement model results.

Factor and corresponding items	M(SD)	β	t	CR	AVE
Egoistic values[a] (α = 0.785)				0.83	0.62
Social power: Control over others, dominance	3.33(2.063)	0.820	N/A		
Authority: The right to lead or command	4.05(2.285)	0.741	13.095***		
Influence: Having an impact on people and events	4.43(2.142)	0.673	12.531***		
Altruistic values[a] (α = 0.852)				0.81	0.59
Social justice: Correcting injustice, care for others	6.49(1.061)	0.812	N/A		
Equality: Equal opportunity for all	6.48(1.021)	0.825	17.499***		
Unity with cultural environment: Fitting into culture	6.43(1.189)	0.717	13.776***		
Cultural-centric values[a] (α = 0.849)				0.79	0.56
Protecting cultural heritage: Preserving cultural heritage	6.31(1.097)	0.777	N/A		
A world of beauty: Beauty of culture and heritage	6.32(1.028)	0.794	22.047***		
Unity with cultural environment: Fitting into culture	6.11(1.196)	0.740	14.669***		
CW: Intercommunity and intergenerational linkages[b] (α = 0.902)				0.91	0.68
Cultural values of our forefathers are important to me	6.39(1.130)	0.848	N/A		
We need to conserve more cultural heritage for future generations	6.39(1.066)	0.908	27.284***		
The present cultural heritage should be available for my children's children	6.42(1.018)	0.876	21.115***		
Cultural heritage must be a part of our lives	6.25(1.159)	0.651	13.560***		
Future generations have the right to enjoy the present cultural heritage	6.49(0.922)	0.818	18.442***		
CW: Recognition of cultural values[b] (α = 0.722)				0.76	0.53
Culture helps me identify myself	5.89(1.241)	0.511	N/A		
Buildings, museums and paintings have the right to be preserved	6.29(0.961)	0.820	10.562***		
Ideas, beliefs and customs have the right to be preserved	6.08(1.165)	0.810	10.525***		
CW: Awareness of cultural loss[b] (α = 0.892)				0.90	0.74
We are losing our cultural heritage	4.85(1.983)	0.933	N/A		
Cultural heritage is disappearing	4.64(2.086)	0.868	24.906***		
If we continue to live as usual, we will have major cultural loss	5.22(1.939)	0.778	21.152***		
CW: Preservation of tradition and customs[b] (α = 0.866)				0.90	0.70
Traditions, customs, beliefs and practices of our culture should be preserved	6.07(1.054)	0.830	N/A		
Built structures, artifacts and monuments of our culture should be preserved	6.23(0.914)	0.877	18.313***		
Traditions, customs, beliefs and practices of our culture are important to me	6.05(1.114)	0.820	18.304***		
Built structure, artifacts and monuments of our culture are important to me	6.11(1.150)	0.815	14.912***		
Awareness of consequences[c] (α = 0.899)				0.93	0.69
Degradation of naturally- and culturally sensitive areas	3.76(2.444)	0.929	N/A		
Increased waste (e.g., litter, sewage, etc.)	4.12(2.378)	0.913	34.676***		
Water scarcity and overuse	4.05(2.415)	0.922	34.817***		
Degradation of built structures, artifacts and monuments	3.86(2.284)	0.874	29.689***		
Crowding in streets, neighborhoods and businesses	4.34(2.184)	0.668	17.607***		
Increased costs of goods and services	4.70(2.029)	0.616	15.441***		
Ascription of responsibility[b] (α = 0.932)				0.89	0.58
Residents like me should be responsible for encouraging visitors to behave in manner that protects cult. aspects of town	5.43(1.493)	0.889	N/A		
Residents like me should be held responsible to act in ways that reduce our own impact on cult. resources in our town	5.27(1.558)	0.871	25.343***		

Table 2. Continued.

Factor and corresponding items	M(SD)	β	t	CR	AVE
Residents like me should feel obligated to be active in planning and managing to preserve our cultural heritage	5.22(1.560)	0.831	23.384***		
I feel a sense of obligation to help protect culture and heritage in my town	5.54(1.562)	0.660	16.220***		
Minimizing the impacts of tourism on cultural resources is party of my responsibility	5.03(1.587)	0.653	15.997***		
It is my responsibility to help support cultural heritage preservation in my town	5.35(1.631)	0.632	15.250***		
Subjective norms[b] (α = 0.865)				0.85	0.53
People whose opinions I value would prefer that I support cultural heritage tourism efforts in my town	4.75(1.662)	0.634	N/A		
I would be influenced by government guidance to participate in efforts to support cult. heritage tourism in my town	4.56(1.921)	0.745	11.647***		
I would be influenced by local tourism planning organizations to participate in efforts to support cult. heritage preservation in my town	4.82(1.832)	0.809	10.446***		
I would be influenced by family members to participate in efforts to support cultural heritage tourism in my town	4.80(1.777)	0.752	11.544***		
I would be influenced by other residents to participate in efforts to support cultural heritage tourism in my town	4.87(1.686)	0.692	10.859***		
Intentions to support cultural heritage tourism[d] (α = 0.866)				0.90	0.56
Promote the various tourist attractions in my community	5.56(1.587)	0.845	N/A		
Provide information to visitors to enhance their experience	5.26(1.732)	0.816	18.629***		
Protect the cultural heritage resources on which tourism in my community depends	5.79(1.486)	0.806	17.589***		
Support the creation of laws and regulations protecting cultural heritage resources	5.10(2.003)	0.680	15.610***		
Attend local community meetings regarding tourism planning	4.52(1.975)	0.722	14.456***		
Offer my assistance to promotional events/activities pertaining to cultural heritage tourism	4.98(1.745)	0.725	14.737***		
Interact positively with area visitors	6.03(1.481)	0.638	13.779***		

[a]Items measured on scale of 1–7 (1 = not at all important; 7 = very important).
[b]Items measured on scale of 1–7 (1 = strongly disagree; 7 = strongly agree).
[c]Items measured on scale of 1–7 (1 = not at all a problem; 7 = a very serious problem).
[d]Items measured on scale of 1–7 (1 = very unlikely; 7 = very likely).
Note: M(SD): mean (standard deviation); β: standardized factor loading; t: value of corresponding factor loading; CR: composite reliability; AVE: Average variance extracted; *** indicates significant at $p < 0.001$ level.

Psychometrics

All 11 factors in the model indicated a good internal consistency according to their composite reliability estimates in excess of 0.70 (Hair et al., 2018). To assess construct validity, convergent and discriminant validity estimates were examined. Convergent validity was demonstrated by three criteria: 1) β for each item greater than 0.50; 2) average variance extracted (AVE) in excess of 0.50; and 3) significant t-values ($p < 0.001$) for each factor loading (Hair et al., 2018) (see Tables 2). Discriminant validity was assessed by comparing the square root of the AVE for any two factors with inter-factor correlations. In 54 of the 55 instances, the former exceeded the latter (see Table 4). The only exception to this was the correlation between egoistic values and altruistic values ($r = 0.79$) being greater than the square root of the AVE for altruistic values (i.e., 0.77). Given this occurred within the same construct, it was deemed to be a minor concern. Overall, discriminant validity for each of the 11 factors within the model was established (Fornell & Larcker, 1981).

Structural path model to examine hypothesized relationships

With the measurement model established, each of the relationships between model constructs (see Figure 1) was examined through structural equation modelling (SEM) (also using AMOS v.25). The structural model yielded a $\chi^2(df) = 2569.64(1020)$, $\chi^2/df = 2.42$, with the following fit indices: CFI = 0.91; TLI = 0.90; RMSEA = 0.06; and SRMR = 0.07 (Table 3). Of the 19 proposed relationships, only four (i.e., cultural-centric values → cultural worldview—intercommunity and

Table 3. Fit indices of measurement and structural models.

Fit indices	χ^2	df	χ^2/df	p	TLI	CFI	RMSEA	SRMR
Measurement model	2263.697	989	2.289	0.000	0.91	0.92	0.053	0.062
Structural model	2569.640	1020	2.421	0.000	0.90	0.91	0.055	0.069

Note: TLI: Tucker-Lewis index; CFI: Comparative fit index; RMSEA: Root mean square error of approximation; SRMR: standardised root mean square residual.

Table 4. Discriminant validity.

Factors	AVE	1	2	3	4	5	6	7	8	9	10	11
1. Egoistic values	0.62	**0.79**										
2. Altruistic values	0.59	0.79	**0.77**									
3. Cultural-centric values	0.56	0.12	0.08	**0.75**								
4. CW: Intercomm. and intergen. linkages	0.68	0.41	0.61	−0.03	**0.83**							
5. CW: Recognition of cultural values	0.53	0.35	0.42	0.00	0.57	**0.73**						
6. CW: Awareness of cultural loss	0.74	−0.06	−0.11	0.14	−0.05	0.18	**0.86**					
7. CW: Preservation of tradition and customs	0.70	0.28	0.42	−0.03	0.57	0.71	0.16	**0.84**				
8. Awareness of consequences	0.69	−0.16	−0.23	0.19	−0.25	−0.01	0.36	0.05	**0.83**			
9. Ascription of responsibility	0.58	0.16	0.26	0.09	0.17	0.32	0.15	0.37	0.23	**0.76**		
10. Subjective norms	0.53	0.14	0.23	0.22	0.17	0.26	0.12	0.26	0.25	0.44	**0.73**	
11. Intentions to support cultural heritage tourism	0.56	0.11	0.22	0.05	0.28	0.32	0.11	0.37	0.21	0.41	0.48	**0.75**

Note: Bolded diagonal estimates are square root of AVE; off-diagonal estimates are factor correlations.
Note: All factor correlations are significant at $p < 0.001$ level.

Table 5. Results of structural model (standardized).

Relationship	β	S.E.	t	p
H_{1a}: Egoistic values → CW: Intercommunity and intergenerational linkages	−0.596	0.230	−2.596	0.011
H_{1b}: Egoistic values → CW: Recognition of cultural values	−0.897	0.231	−3.885	0.008
H_{1c}: Egoistic values → CW: Awareness of cultural loss	−0.679	0.273	−2.486	0.012
H_{1d}: Egoistic values → CW: Preservation of tradition and customs	−0.792	0.196	−4.032	0.007
H_{2a}: Altruistic values → CW: Intercommunity and intergenerational linkages	0.670	0.212	3.155	0.002
H_{2b}: Altruistic values → CW: Recognition of cultural values	0.813	0.214	3.791	0.003
H_{2c}: Altruistic values → CW: Awareness of cultural loss	0.391	0.168	2.324	0.017
H_{2d}: Altruistic values → CW: Preservation of tradition and customs	0.846	0.226	3.741	0.003
H_{3a}: Cultural-centric values → CW: Intercomm. and intergen. linkages	0.046	0.091	0.282	0.778
H_{3b}: Cultural-centric values → CW: Recognition of cultural values	0.179	0.089	0.732	0.464
H_{3c}: Cultural-centric values → CW: Awareness of cultural loss	0.234	0.109	2.311	0.021
H_{3d}: Cultural-centric values → CW: Preservation of tradition and customs	0.155	0.064	0.611	0.541
H_{4a}: CW: Intercomm. and intergen. linkages → Awareness of consequences	−0.363	0.142	−6.043	***
H_{4b}: CW: Recognition of cultural values → Awareness of consequences	−0.031	0.274	−0.408	0.683
H_{4c}: CW: Awareness of cultural loss → Awareness of consequences	0.320	0.056	7.011	***
H_{4d}: CW: Preservation of tradition and customs → Awareness of consequences	0.199	0.358	2.944	0.003
H_5: Awareness of consequences → Ascription of responsibility	0.189	0.028	3.910	***
H_6: Ascription of responsibility → Subjective norms	0.455	0.047	7.936	***
H_7: Subjective norms → Intentions to support cultural heritage tourism	0.526	0.075	8.813	***

R^2Intercommunity and intergenerational linkages = 0.54.
R^2Recognition of cultural values = 0.69.
R^2Awareness of cultural loss = 0.10.
R^2Preservation of tradition and customs = 0.69.
R^2Awareness of consequences = 0.20.
R^2Ascription of responsibility = 0.05.
R^2Subjective norms = 0.24.
R^2Intention to support cultural heritage tourism = 0.28.
Note: *** indicates significance at $p < 0.001$ level.

intergenerational linkages; cultural-centric values → cultural worldview—recognition of cultural values; cultural-centric values → cultural worldview—preservation of tradition and customs; and cultural worldview—recognition of cultural values → awareness of consequences) were not significant ($p > 0.05$). Though unique effect sizes for variance explained in each outcome variable can be surmised from Table 5, it is important to point out that ascription of responsibility explained a significant degree of variance in subjective norms ($R^2 = 0.24$ or 24% of the variance), which then in turn, explained 28% of the variance ($R^2 = 0.28$) in residents' behavioral intentions to support cultural heritage tourism.

Discussion

This study was motivated by a call from researchers and practitioners to promote residents' support for cultural heritage tourism. We drew on environmental psychology, environmental social psychology and sustainable tourism literature to test the interplay of relationships between personal values, cultural worldviews, awareness of consequences, ascription of responsibility, subjective norms and residents' intentions to support cultural heritage tourism in a single integrative model. A number of arguments can explain our contributions.

Behavioral scientists are increasingly looking at applying behavior analysis principles to management of natural and cultural environments, seeking to promote peoples' pro-sustainable behaviors (Townsend et al., 2018) and promote overall quality-of-life. This encompasses decreasing those behaviors detrimental to cultural heritage (Alazaizeh et al., 2016). In line with this, research centered on residents' intent to support sustainable cultural heritage tourism, as a vital constituent in promoting sustainable cultural heritage tourism is steadily drawing some attention as of late. For instance, Alazaizeh et al. (2019) highlight how residents, business owners, and government officials all indicate levels of support for the preservation of Petra (Jordan), another UNESCO World Heritage Site. Ramkissoon (2015) highlight the vital role of tourism stakeholders in co-creating sustainable cultural heritage tourism experiences at UNESCO world heritage sites in Mauritius, a small island developing state.

Our hypothesis that egoistic values would be negatively related to cultural worldview through: a) intercommunity and intergenerational linkages; b) recognition of cultural values; c) awareness of cultural loss; and d) preservation of tradition and customs was supported. Studies have mostly focused on testing integrative models with environmental worldviews as opposed to cultural worldviews, with some exceptions (e.g., Choi et al., 2007). A number of studies found no significant relationship between egoistic values and NEP (e.g., Kiatkawasin & Han et al., 2017; Landon et al., 2018; van Riper & Kyle, 2014). Additionally, we hypothesized that altruistic values would be positively related to cultural worldview through the four factors of cultural worldview. Our findings support these relationships in contrast to previous studies drawing on the VBN model. Landon et al. (2018) failed to confirm the hypothesized relationship between altruistic values and the NEP. One of the contributions of our study lies in testing the association between these constructs at Carthage which provide important practical implications in this context. There is a need for further research for conclusive findings.

Findings also confirm the significant association of awareness of the consequences of unplanned tourism with an ascription of responsibility to alleviate potential harms to cultural heritage. The significant relationship may be explained by the fact that Carthage residents feel concerned and responsible for the sustainable protection and enhancement of their cultural heritage resources. While some residents would perhaps feel happy in encouraging visitors to respect the local culture and Carthage's tangible assets, others may feel a moral sense of obligation to engage in higher-effort behaviours such as active involvement in decision-making to protect Carthage's cultural resources. Our study echoes the findings of previous research conducted

in promoting low and high-effort pro-environmental behaviors (e.g., Ramkissoon et al., 2013; Ramkissoon et al., 2018).

Another important finding of our study concerns subjective norms being positively related to residents' intentions to support cultural heritage tourism. Previous studies found subjective norms to be a significant predictor of intention to visit cultural heritage attractions (e.g., Al Ziadat, 2015; Shen et al., 2009). Our study findings bridge the gaps in theory and practice in suggesting that family and friends, government, local planning organizations and references that residents of Carthage value would have some influence on their intent to safeguard their tangible and intangible heritage and support cultural tourism development. They may be more inclined to participate in collective efforts to participate in protection of Carthage's cultural resources. Our findings align with previous studies (e.g., Megeirhi et al., in press; Nunkoo & Ramkissoon, 2016) stressing the importance of stakeholder engagement and residents' support in planning, protecting and promoting cultural heritage tourist attractions. Our findings however are somewhat contradictory to the work by Choi et al. (2007), suggesting the need for more studies in cultural heritage tourism for conclusive findings.

Theoretical and practical applications

A majority of sustainable heritage tourism research in the recent past has focused on different aspects associated with management of resources, while less attention has been devoted to residents' support of cultural heritage tourism. Drawing from environmental psychology, sociology and tourism scholarships, our main theoretical contribution relates to expanding the application of the VBN in considering residents' intentions to support sustainable cultural heritage tourism. The extant literature provides numerous examples of research extending the VBN theory including additional predictors to capture a greater variance in explaining pro-environmental behavior across contexts (e.g., Han, 2015; Landon et al., 2018; Stern, 2000). Our study was also designed to incorporate important additional constructs (see Figure 1) and contribute to the existing body of knowledge in explaining residents' support for cultural heritage tourism in Carthage. Our amended VBN model lays the foundation for subsequent research that further extends the model in the context of cultural heritage tourism.

The importance of subjective norms in residents' intentions to support cultural heritage tourism is an important contribution to the body of knowledge. The VBN model was extended to include subjective norms in a cultural heritage tourism context, an area demanding further exploration. With numerous studies focusing on the environmental streams, our study brings a novel important theoretical contribution in proposing the extended VBN model and testing the relationships between subjective norms and residents' support for cultural heritage tourism. Further, our study adds to the pool of knowledge on personal values, cultural worldview, awareness of consequences, ascription of responsibility and subjective norms as psychological antecedents of residents' support for cultural heritage tourism. More specifically, this research provides support for the utilization of the multi-dimensional construct of cultural worldview (Choi et al., 2007) not only within subsequent VBN models but also work surrounding cultural heritage tourism.

Results of this work also have important practical implications for the government, cultural heritage site managers, and destination marketers in Carthage to consider when developing strategies for promoting their cultural heritage offerings. As such, it is crucial to undertake a stakeholder engagement approach and translate these findings into action (Ramkissoon & Hristov, 2018; van Riper & Kyle, 2014). The first place to begin would be by educating traditional decision makers in Carthage about the necessity of including Carthage's local voices from different socio classes (Megeirhi et al., in press) within the planning process. Of course, this may be somewhat difficult given the alleged corruption between individuals in power and the general population of residents throughout Carthage. To this end, perhaps another place to focus

attention may be on calling town hall meetings or something equivalent where various stakeholders are invited and perspectives can be communicated. This would largely be contingent upon the 'buy in' from numerous parties involved in the future planning of sustainable tourism for cultural heritage in Carthage.

The ascription of responsibility in predicting subjective norms and subjective norms in predicting residents' intent to support cultural heritage tourism in this study suggest that Carthage's cultural site managers could aim at engaging residents in their product development and differentiation and communicate the mutual benefits. The extent to which residents' support can be achieved depends on a number of strategies. An outcome-focused communication plan by Carthage's policymakers, cultural site managers and marketers is important to translate into measurable support by its residents, as an important stakeholder for sustainable cultural heritage tourism management.

Further, stakeholder engagement would allow the local community to develop and enhance trust Nunkoo and Ramkissoon (2012) as has been noted by numerous researchers focusing on sustainable tourism as of late (see Gursoy, Yolal, Ribeiro, & Netto, 2017; Nunkoo, 2015; Nunkoo et al., 2018; Ribeiro et al., 2018), thereby increasing their intent to support cultural heritage tourism. Though trust would have been ideal to ascertain within this work, it was beyond the scope of our study to include trust in our proposed model. As such, future studies could build on our extended VBN model and test the associations of the proposed constructs with residents' trust and support for cultural heritage tourism.

Limitations and future research

We would be remiss if limitations were not acknowledged for this research. The first of which pertains to the fact that we stopped shy of assessing actual behavioral support for cultural heritage tourism. This has been a limitation of the model Stern (2000) originally proposed, and others have followed suite (see Han et al., 2017; Han et al., 2018; Kiatkawsin & Han, 2017; Landon et al., 2018); simply stopping at behavioral intentions. The very nature of including actual behavioral support within the model would require data collection at two points in time to potentially measure the relationship between intentions and behavior. To consider these constructs concurrently would be incorrect. Therefore, we suggest that researchers undertake subsequent work employing data collection at two points in time, utilizing a longitudinal approach. Zhang et al. (2015) and Reggers et al. (2016) has most recently championed this approach and has called for similar future work.

A second limitation pertains to construct validity estimates for the factors used within the model. Though convergent validity was established within the CFA results, it was revealed that one factor was problematic in the way of discriminant validity. The factor correlation between altruistic values and egoistic values was identical to the square root of the AVE for egoistic values. Given this occurred within the same construct (i.e., personal values), it was not deemed to be as problematic could it have happened across constructs (Hair et al., 2018). Future work should continue to scrutinize items comprising altruistic and egoistic values closely to see if a potential item can be removed in such a way as to not compromise the integrity of the measurement model (i.e., χ^2/df change of the model once an item is removed) (Woosnam, 2011).

Additionally, our model explained a moderate degree of variance (i.e., 28%) in intentions to support cultural heritage tourism. Though this number is by no means miniscule, it raises questions about what may be contributing to such a finding. Perhaps it was that we used a novel measure for cultural-centric values (borrowing items from the traditional biospheric values construct from Landon et al., 2018 and others), and the effect that such values had on cultural worldview may have contributed to the ultimate variance explained in intentions to support cultural heritage tourism. Further testing of this form of values may be necessary in subsequent

work in starting with a larger pool of items and formulating a more reliable measure (given it had one of the lowest composite reliability estimates from the CFA results).

Results may also be explained by the notion that the VBN model in the context of cultural heritage tourism support is in its infancy, and could be strengthened by the inclusion of additional theoretically derived constructs. For instance, including constructs from the theory of planned behavior (i.e., perceived behavioral control) may contribute to a greater degree of variance explained in behavioral intentions to support cultural heritage tourism. Similar approaches have been undertaken by Han (2015) and Han and Hyun (2017) that answer the call made by Ward and Berno (2011) to employ complementary theoretical frameworks in an effort to better explain residents' perspectives of tourism and corresponding impacts.

Disclosure statement

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