

Motivation, Emotion and World Heritage Status in Discerning the Heritage Tourists: A Segmentation Perspective

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Highlights

- Examines the relationship between heritage motives and emotions
- Evaluates the relationship between motivation segments and perceptions of WHS attributes
- Identifies the existence of three clusters of emotions (positive, low and mixed arousals)
- Evaluates the relationship between emotion segments and perceptions of WHS attributes
- Demonstrates that positive emotions are influenced by heritage motives and demographic profile

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Abstract

Heritage tourists' motives are heterogeneous but few studies examine the relationship between these motives, emotions felt after the visit, and tourists' perceptions of the attributes that contribute to World Heritage Status (WHS) listing of a site. Using cognitive appraisal theory (CAT) as the theoretical lens, we evaluate the relationship between motivation, emotion and site characteristics. Based on a sample of 1531 international visitors to Petra, we segment their motives and emotions and profile these with respect to perceptions of the attributes for WHS listing. The results show the existence of two motivation clusters "General Tourists" and "Heritage Tourists", with the latter being drawn to Petra for reasons related to both site characteristics and heritage. Three clusters of emotions were identified namely, "Positive Arousals", "Low Arousals" and "Mixed Arousals". Significant relationships were identified between the motivation and emotion clusters and their respective perceptions of the attributes for WHS listing. A logit model confirmed that the emotion felt by the different clusters can be predicted by motivation clusters, demographic and travel characteristics. Implications for theory and practice are offered.

Keywords: heritage tourism, segmentation, motivation, emotions, cognitive appraisal theory, clustering, world heritage status

1. Introduction

Heritage tourism is a growing area of research in the tourism field (Weaver, 2011). While several studies examine the motivation (e.g., Medina-Viruel, López-Guzmán, Gálvez, & Jara-Alba, 2019; López-Guzmán, Torres Naranjo, Pérez Gálvez, & Carvache, Franco, 2019; Poria, Butler & Airey, 2004; Poria, Reichel & Biran, 2006a), on-site experiences (e.g., Kempiak, Hollywood, Bolan & McMahon-Beattie, 2017; Poria, Butler & Airey, 2003), and post-consumption behaviours (Chen & Chen, 2010; Su & Hsu, 2013) of heritage tourists, limited attention has been devoted to how motives of visitation influence emotional aspects of heritage consumption. The majority of studies on emotions focus on dark heritage consumption (e.g., Nawijn, Isaac, Gridnevskiy & van Liempt, 2018; Prayag, Suntikul & Agyeiwaah, 2018; Weaver, Tang, Shi, Huang, Burns, & Sheng, 2018). While this line of research is important, visitors to dark heritage sites remain a small segment of the global heritage tourism market. Extending this line of research to include emotional responses at heritage sites in general may provide a more holistic understanding of visitor experiences and the corresponding management implications. Previous studies have focused mainly on cognitive aspects of heritage experiences, including motivation but also segmented the motives (Menor-Campos, Fuentes Jiménez, Romero-Montoya, & López-Guzmán, 2020; Mgxekwa, Scholtz, & Saayman, 2019) to identify visitor sub-groups. Others have attempted to create typologies of cultural tourists (McKercher, 2002) with the aim of identifying the centrality of culture in the entire tourist experience. However, heritage studies in general rarely consider the emotions felt as a way to identify visitor segments. Besides the cognitive experience, the emotive and

1 personalized heritage experience are valued by visitors (Packer et al., 2019). Other researchers
2 call “for a sharper sensitivity to the role of emotion as a way of knowing” (d’Hautesserre, 2015,
3 p.77-78). The desire of visitors to be emotionally involved in the heritage experience is
4 increasingly recognized (Poria et al., 2003; Poria et al., 2006a). Yet, empirical evidence on the
5 relationship between emotional responses and the general travel as well as heritage specific
6 motives that drive heritage consumption remains to be ascertained. According to the cognitive
7 appraisal theory (CAT), emotions are mental states that result from processing or appraising
8 personally relevant information (Roseman et al., 1990). In particular, goal congruence as an
9 appraisal, sometimes referred to as motive consistency determines the valence
10 (positive/negative) of the emotional response (Hosany, 2012; Roseman et al., 1990). Given that
11 existing studies argue that emotions are significant drivers of heritage tourism experiences
12 (Medina-Viruel et al., 2019; Poria et al., 2004; Prayag et al., 2013), how heritage tourism elicits
13 other positive (e.g., joy, happiness, and pleasure) and negative emotions (e.g., guilt, sadness
14 and regret) needs further research (Prayag & Del Chiappa, 2021).
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17 Likewise, several studies argue that the World Heritage Status (WHS) of a site forms an
18 important aspect of its attractiveness (Nguyen & Cheung, 2014) but the increased visitation as
19 a result of the listing can have negative impacts on the sustainability of the site (Tarawneh &
20 Wray, 2017). Much controversy also exists on whether WHS listing actually increases
21 visitation and brings positive benefits to the site (Adie, Hall & Prayag, 2018). Research on
22 WHS listing rarely considers the status of the site as a visitation motive (Adie et al., 2018) but
23 certainly fails to consider the relationship between listing and emotions of visitors. Therefore,
24 to capture the “big picture” of who visits heritage sites, help with the development of efficient
25 and effective marketing and management strategies (Weaver et al., 2001), and develop more
26 sustainable management of visitor numbers (Adie et al., 2018), there is a need to consider
27 cognitive factors (motivation), emotions and perceptions of WHS listing as a collective set of
28 factors that influence visitor experience. Thus, the objectives of this study are three-fold: (i) we
29 assess whether different segments of visitors based on their motivation (general and heritage
30 specific) trigger different types of positive and negative emotions; (ii) we evaluate whether
31 perceptions of attributes for WHS listing have any influence on emotion and motivation; and
32 (iii) we determine whether low and high emotional arousal visitor groups can be predicted by
33 motivation, socio-demographic and travelling characteristics. As such, we integrate CAT and
34 affect theory to understand how motivation influences emotion and whether
35 demographic/travel characteristics and attributes of WHS listing affect this relationship (see
36 Figure 1).
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43 TAKE IN FIGURE 1

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45 The study contributes to the heritage tourism literature in several ways. First, building on
46 existing motivation segmentation studies of visitors to heritage sites (Menor-Campos et al.,
47 2020; Mgxekwa et al., 2019; Murdy, Alexander & Bryce, 2018; Ramires, Brandao, & Sousa,
48 2018), we identify segments on the basis of both general travel and heritage specific motives.
49 Second, unlike some of these studies (e.g., López-Guzmán et al., 2019; Mgxekwa et al., 2019),
50 which employ the much criticized factor-cluster analysis (see Dolnicar & Grün, 2008; Khoo-
51 Lattimore, Prayag & Disegna, 2019), we identify the segments without pre-processing the data,
52 thereby improving the reliability of the results. Third, the relationship between motivation and
53 emotion has been rarely studied in tourism (Lin & Nawijn, 2020), with existing studies showing
54 conflicting results. For example, Cini et al. (2013) found that visitors who are intrinsically
55 motivated have more positive than negative feelings. Lin and Nawijn (2020) found that
56 motivation has no influence on emotions in a longitudinal study of tourists. To clarify these
57 results, we demonstrate that different segments of visitors have different emotional arousal
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1 levels, thus supporting CAT. Fourth, we extend studies on visitors' perceptions of WHS (Adie
2 et al., 2018; Nguyen & Cheung, 2014) by showing that WHS evaluative criteria have
3 significant relationships with both motivation and emotion, thus supporting affect theory
4 (d'Hautesserre, 2015) and its corresponding implications for heritage tourism.

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6 Next, we review the literature followed by the method used. The results are then presented
7 followed by a discussion and the corresponding theoretical and managerial implications of the
8 findings. We conclude with the main contributions of the study, its limitations and propose
9 areas of further research.

10 11 **2. Literature Review**

12 13 ***2.1 Motivations of Visitors to Heritage Sites***

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16 Despite the ongoing debate on the core experience of heritage tourism (Poria et al., 2003; Palau-
17 Saumell, Forgas-Coll, Sánchez-García, & Prats-Planagumà, 2013), it is widely accepted that
18 different tourists visit heritage sites for different purposes (Poria et al., 2006a; Poria et al.,
19 2006b; McCain & Ray, 2003). Several classifications of tourists' motivations for visiting
20 heritage sites exist (e.g., Poria et al., 2006a; Prayag, Suntikul, & Agyeiwaah, 2018; Kempiak
21 et al., 2017) indicating heterogeneity within this market (Nyaupane, White, & Budruk, 2006;
22 Poria et al., 2006b). Medina-Viruel et al. (2019), for instance, found that visitors to Heritage
23 World sites in Spain were driven by hedonic, cultural, convenience, and circumstantial
24 motivations. López-Guzmán et al. (2019) suggested that international visitors to the World
25 Heritage site of Quito in Ecuador were motivated by cultural, circumstantial, and hedonic-
26 gastronomic motives. Visitors to heritage sites are broadly motivated by educational (i.e.,
27 willingness to learn about the site), recreational (i.e., spending leisure time in the site), and
28 emotional (i.e., desire for personal connectedness with the site) factors (Poria et al., 2004; Poria
29 et al., 2006a,b; Prayag et al., 2018). Tourists are also motivated by factors related to perceptions
30 of the heritage being presented as part of their own heritage (Poria et al., 2006a; Poria et al.,
31 2003, 2004). For instance, Poria et al. (2004) noted that tourists who perceived the site as part
32 of their own heritage were more motivated to learn about the site.

33 34 35 ***2.2 Segmentation of Tourists Motivation to Heritage Sites***

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38 A coherent body of research segments pleasure travelers on their motivations (Albayrak &
39 Caber, 2018; Park & Yoon, 2009; Ying, Wei, Wen, Wang, & Ye, 2018). For instance, Park and
40 Yoon (2009) segmented tourists on their motives to visit rural areas whereas Albayrak and
41 Caber (2018) segmented tourists' motives for participating in white-water rafting tours. A
42 considerable body of literature also uses different theoretical considerations to segment
43 tourists' motivations. Pearce and Lee (2005) used the notion of the travel career ladder as a
44 theoretical framework to segment pleasure travel motivations based on previous travel
45 experience. They noted that more experienced travelers were more motivated by host-site-
46 involvement (e.g., experiencing different cultures) and nature seeking, while less experienced
47 travelers' motivations were more related to stimulation, personal development, security, self-
48 actualization, nostalgia, romance, and recognition.

1 Others noted that visitors to heritage sites may not be homogenous in terms of their
2 motivations, perceptions, and behaviors. For instance, Kerstetter, Confer and Graefe (2001)
3 highlighted the need for understanding the sub-groups of heritage tourists to design efficient
4 marketing and development strategies of heritage sites. Similarly, McCain and Ray (2003)
5 proposed that heritage tourism is a generic segment with sub-segments that worth investigating
6 such as legacy tourists who have a personal connection with their heritage. Overall, despite a
7 plethora of research addressing the motivations of visitors to heritage sites, there is still a
8 limited understanding of what types of tourists visit heritage sites. This takes on greater
9 significance in light of the limited studies on segmenting the experiences of visitors at heritage
10 sites. For example, Poria et al. (2006b) segmented heritage tourists into three groups
11 considering their perceptions of the site as part of their own heritage and noted that those who
12 perceived the site as part of their own heritage were more motivated by the desire for emotional
13 involvement.
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19 However, there is considerable debate in studies segmenting the motivation of heritage tourists
20 around: (i) who heritage tourists are and (ii) whether or not visitors to heritage sites are
21 inherently heritage tourists (Kempiak et al., 2017), therefore how do we identify those heritage
22 tourists? Several research endeavors to segment travelers to heritage sites based on their
23 motivations have been attempted using a priori and posteriori classification techniques
24 (Kerstetter et al., 2001; López-Guzmán et al., 2019; Ramires et al., 2018; Nyaupane, &
25 Andereck, 2014; Weaver et al., 2001; Nyaupane et al., 2006; Nguyen, & Cheung, 2014). For
26 example, Nyaupane and Andereck (2014) segmented tourists visiting cultural heritage sites
27 into two groups: true cultural heritage tourists and spurious cultural heritage tourists. These
28 groups were identified using a priori classification technique based on visitor activities. In
29 another study, Nyaupane et al. (2006) segmented tourists to cultural heritage sites into three
30 groups using a posteriori segmentation technique: culture-focused, culture-attentive, and
31 culture-appreciative. They noted that the culture-focused tourists tended to show higher level
32 of vacation satisfaction, appreciated the preservation of archeological resources and reported
33 more learning experiences. Ramires et al. (2018) segmented international tourists visiting the
34 World Heritage City of Porto based on their travel motivations and identified three types of
35 tourists: conventional cultural tourists, spontaneous cultural tourists, and absorptive cultural
36 tourists based on a posteriori segmentation technique. Kerstetter et al. (2001) noted that there
37 are different types of heritage tourists based on their motivations and proposed that highly
38 specialized tourists were more likely to be motivated to learn about a historical period or event
39 and experience authentic elements in a historic destination.
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49 In summary, the literature reveals different approaches to segment heritage travelers'
50 motivations including the travel career approach (Pearce & Lee, 2005), the concept of
51 specialization (Kerstetter et al., 2001), activity-based segmentation (Nyaupane & Andereck,
52 2014), and benefit-based segmentation (Weaver et al., 2001). However, existing classifications
53 of heritage tourists fail to link the identified motives with the emotions felt despite the
54 recognition that heritage tourism can be intensely emotional (Carden, 2006; Poria et al., 2003;
55 Poria et al., 2006a). Also, whether such motives influence visitors' rating of how well a site
56 meets the criteria of World Heritage Status (WHS) listing have received scant attention in the
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1 literature. Emotions and visitors' perceptions of a site meeting the WHS requirements are
2 particularly important and notably overlooked in previous segmentation studies (Adie et al.,
3 2018).

4 5 **2.3 Emotions in Heritage Tourism Experiences**

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7 Emotions can be described as affective states characterized by episodes of intense feelings
8 associated with a specific referent that instigate specific response behaviours (Cohen & Areni,
9 1991). The role of emotions in influencing individuals' perceptions, evaluations, and behaviors
10 is acknowledged both in marketing (e.g., Bagozzi et al., 1999) and tourism scholarship (del
11 Bosque, & San Martín, 2008; Hosany & Gilbert, 2010; Nawijn & Biran, 2019). While different
12 theoretical approaches exist to study emotions, broadly speaking, emotions can be either
13 positive or negative. Positive emotions include, for example, happiness, love, peacefulness and
14 serenity, and these influence post-visit outcomes (Grappi & Montanari, 2011; Bigné & Andreu,
15 2004). Negative emotions, for example, include unpleasantness, anger, and disappointment,
16 and these have adverse impacts on tourists' evaluations and behavioral intentions (Breitsohl &
17 Garrod, 2016; Hosany & Prayag, 2013; Nawijn & Biran, 2019). Yet, emotions are often
18 complex and can fluctuate over the duration of a holiday (Nawijn, Mitas, Lin, & Kerstetter,
19 2013; Lin & Nawijn, 2020). For instance, in some contexts such as dark tourism, negative
20 emotions can lead to positive outcomes (Nawjin & Biran, 2019). Emotions are particularly
21 relevant to heritage tourism experiences given that the desire for emotional involvement is a
22 key motive for visiting heritage sites (Poria et al., 2006a,b). Yet, emotions emanating from
23 heritage experiences have been primarily studied as determinants of post consumption
24 behaviors such as satisfaction and behavioral intentions (Palau-Saumell et al., 2013; Prayag et
25 al., 2013). For example, Prayag et al. (2013) assessed the influence of positive emotions such
26 as joy, love and positive surprise on satisfaction and intention to recommend for the UNESCO
27 WH site of Petra (Jordan), while negative emotions such as regret, disappointment and
28 displeasure had the opposite effect on the same post-consumption behaviors.

29 30 *2.3.1 Segmentation of Emotions*

31 Emotion as a segmentation variable has received interest in consumer behavior research
32 (Schoefer & Diamantopoulos, 2009; Westbrook, & Oliver, 1991) but to a lesser extent in
33 tourism research (Bigné & Andreu, 2004; Del Chiappa, Andreu & Gallarza, 2014; Hosany &
34 Prayag, 2013). From a consumer behavior perspective, Westbrook and Oliver (1991)
35 segmented consumers into five clusters; happy, pleasant surprise, unemotional, unpleasant
36 surprise, and angry, and noted that the first two segments were associated with high levels of
37 satisfaction. Similarly, Liljander and Strandvik, (1997) suggested four types of consumers
38 based on their affective responses; namely, delighted, emotionless/tentative, angry/humiliated,
39 and angry/contented consumers. Hirschman and Stern (1999) segmented consumers into five
40 key groups, namely, contented consumers (i.e., consumers with positive emotions and low
41 arousal), happy consumers (i.e., consumers with positive affect and high arousal), sad
42 consumers (i.e., consumers with negative emotions and low arousal), and angry consumers
43 (i.e., consumers with negative emotions and high arousal). Overall, these studies confirm that
44 consumers should not be viewed as a homogeneous group in their affective responses. In
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1 tourism research, emotion as a segmentation variable has received initial but not sustained
2 attention. In their study in the area of leisure and tourism services, Bigné and Andreu (2004)
3 confirmed the suitability of emotions as a variable for segmentation and clustered visitors into
4 two groups; those who feel greater pleasure and arousal, and those who feel less pleasure and
5 arousal. They also noted that visitors who feel greater pleasure and arousal are more likely to
6 exhibit higher levels of overall satisfaction and loyalty. Hosany and Prayag (2013) identified
7 five distinct emotional response patterns among tourists, namely delighted, unemotionals,
8 negatives, mixed, and passionate. They also noted that the delighted cluster reported the highest
9 levels of satisfaction and has higher propensity to recommend. Collectively, these studies
10 confirm that emotion is a significant segmentation variable to better understand tourist
11 experiences.
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16 *2.3.2 Segmentation of emotions in heritage studies*

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18 In the specific context of heritage tourism, very few studies exist that employ emotion as a
19 segmentation variable. A recent study by Medina-Viruel et al. (2019) employed emotions in
20 segmenting tourists to WHS sites in Spain and proposed four types of tourists; namely, heritage
21 tourist, emotional tourist, cultural tourist, and alternative tourist. Heritage tourists were
22 described as having high emotional connection with the heritage site visited, as well as a high
23 cultural interest in the destination. The emotional tourists displayed a high emotional
24 connection with the heritage site visited but showed low cultural interest in the destination. The
25 cultural tourists were described as tourists who, despite having a cultural interest in the
26 destination, showed a low emotional connection with the heritage site. Finally, the alternative
27 tourists were characterized by having low emotional connection to the heritage site and a low
28 cultural interest in the destination. Del Chiappa et al.'s (2014) study segmented visitors to
29 archeological museums into two groups; those who feel higher positive emotions, and those
30 who feel lower positive emotions. They concluded that visitors who experience higher positive
31 emotions perceive the museum to have a higher level of attractiveness and uniqueness, and
32 report higher level of satisfaction. Overall, despite the crucial role of emotions in heritage
33 tourism experience, research segmenting emotions in WH sites seems to be in its very infantile
34 stage.
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43 **2.4 Motivation, Emotions and Perceptions of UNESCO WHS**

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45 Despite the accepted role of United Nations Education, Social, and Cultural Organization
46 (UNESCO) World Heritage (WH) designation as a way to enhance destination brand
47 awareness (Patuelli, Mussoni, & Candela, 2013), there is an ongoing debate on whether the
48 UNESCO WHS helps to motivate and attract greater numbers of tourists (Adie et al., 2018).
49 While some advocates that the UNESCO WH Status can significantly induce increased tourist
50 flows (Patuelli et al., 2013; Yang, Lin, & Han, 2010), empirical analyses by others provide
51 minimal evidence to support this assertion (Poria, Reichel, & Cohen, 2011a; Yan & Morrison,
52 2008; Huang, Tsaur, & Yang, 2012). For instance, Poria, Reichel, and Cohen, (2011a) found
53 that tourists do not have a higher level of motivation to visit a WH-listed site than they do for
54 a non-WH-listed site. Interestingly, in a similar study, Poria, Reichel, and Cohen, (2011b)
55 claimed that tourists' overall motivation to visit is lower for a UNESCO WHS than for a non-
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1 designated one. Some even went beyond by highlighting the potential adverse impacts of WH
2 designation (Caust & Vecco, 2017) especially on a long-term basis (Adie et al., 2018). There
3 is also some evidence that travel motivations may vary based on the level of awareness of the
4 WH status. In this vein, Yan and Morrison (2008) noted that tourists who were aware of the
5 WH status were more interested in the cultural and heritage activities in the destination whereas
6 unaware tourists were more motivated by other touristic activities. To conclude, there is limited
7 agreement on whether the UNESCO WH status influence at all heritage tourists' motivations.
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10 Previous research indicates that tourists' perceptions of heritage significantly influence their
11 emotions (Palau-Saumell et al., 2013; De Rojas & Camarero, 2008). Medina-Viruel et al.
12 (2019) establish a link between emotions and tourist experiences in UNSCEO WH sites. They
13 note that tourists exhibit different emotional responses and conclude that the emotional link to
14 the heritage site and the cultural interest in the destination lie in the core of heritage tourism.
15 Therefore, some evidence exists to suggest that emotions influence post-consumption
16 evaluations at heritage sites, but these studies do not ascertain whether these emotions also
17 influence tourists' evaluations of whether WH sites are fulfilling the requirements for listing
18 by UNESCO.
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23 **3. Method**

24 **3.1 Study context – Petra as a Heritage Site**

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28 Located southwest of Jordan, Petra achieved the UNESCO World Heritage Status in 1985 and
29 was chosen as one of the New Seven Wonders of the World in 2007. Carved into the sandstone
30 hill by the Arab Nabateans, the 2000-year site is considered Jordan's most renowned tourist
31 attraction. The site enjoys a worldwide reputation as one of the few well preserved ancient
32 cities in the world. Petra is regarded as an important asset for Jordan's tourism. According to
33 recent figures, Petra hosted around 1.135.300 tourists accounting for about 21% of the total
34 number of visitors to Jordan (Ministry of Tourism and Antiques, 2020). In 2007, Petra was
35 selected as one of the New Seven Wonders of the World and in 2012, Jordan celebrated the
36 200th anniversary of the ancient city's re-discovery by the Western world. Today, Petra is
37 considered as Jordan's "must-see" site and is among the most renowned destinations in the
38 Middle East. The ancient site of Petra is adjunct to Wadi Musa (Valley of Moses), a modern
39 town whose economy depends largely on tourism. This tourism site has attracted significant
40 interest from tourism researchers evaluating tourists' emotional experiences (Prayag et al.,
41 2013), tour guide performance and sustainable visitor behavior (Alazaizeh et al., 2019), tourist
42 harassment (Alrawadieh & Alrawadieh, 2020), and tourism impacts and employment
43 (Alrwajfah et al., 2020), among others. Existing studies on the site do not examine motivation
44 and emotion of visitors simultaneously.
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53 **3.2 Survey Instrument**

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55 Multi-item scales were used to measure the main variables of the study. Motivation was
56 measured using 14 items ($\alpha=0.81$) adapted from previous heritage tourism studies (Poria et al,
57 2004; Poria et al., 2006a; Prayag et al., 2018), and measured on a five-point Likert scale
58 (1=Strongly Disagree and 5= Strongly Agree). Using the valence approach of measuring
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emotions (Zeelenberg & Pieters, 2004), 28 positive ($\alpha=0.97$) and 12 negative ($\alpha=0.88$) emotions were adapted from previous studies (Holbrook & Batra, 1987; Nawijn, Isaac, Gridnevskiy & van Liempt, 2018; Laros & Steenkamp, 2005), and measured on a five-point Likert scale (1=Not at all and 5=Very Much). While Adie et al. (2018) assessed 14 criteria related to visitors' perceptions of the attributes required of a site to be listed as world heritage, this study focuses on only 4 of these criteria (protection, management, authenticity and integrity) as these are the most recent addition to the list of requirements. The four items were measured on a five-point scale (1=Strongly Disagree and 5= Strongly Agree). Several demographic and visitation characteristics were also measured (see Table 1) adapted from previous studies (Kempiak et al., 2017; Prayag et al., 2018). The questionnaire was pretested on 45 international visitors to the site, resulting in minor modifications and administered in English only (see Appendix A).

3.3 Sampling and Data Collection

The population of the current study consists of all international visitors to Petra. In 2019, around 1.135.300 tourists visited Petra with the USA, Germany, UK, Spain, and France being the major sending countries (Ministry of Tourism and Antiques, 2020). To conduct a reliable and valid data-driven market segmentation analysis, Dolnicar, Grün, Leisch and Schmidt (2014) recommended a sample size of 70 times the number of variables used for clustering. Over a period of six weeks from April 25 until June 8, 2019, a total of 2288 international tourists were approached at different locations by one of the authors of the study. Of these, 1761 accepted to fill the questionnaire and 1531 were useable, thereby fulfilling the criteria for effective segmentation. This represents a response rate of about 67 percent. A convenience sampling approach was adopted to identify respondents. To ensure a high response rate, reduce selection bias and enhance the quality of data, the interviewer approached potential respondents in different locations including Petra Visitor Center and the lobbies of eight major hotels in the town of Wadi Musa. Assuming that tourists could be reluctant to fill questionnaires while on vacation given their limited time availability, questionnaires were also handed to respondents in buses while leaving Petra to other Jordanian destinations or on the way to the airport. These questionnaires were then delivered back to the interviewer with the assistance of local guides and hotel employees. As screening criteria, respondents were required to be i) 16 years or older who ii) spent at least one night in the destination and iii) had completed their visit to the site of Petra. These screening criteria were necessary to identify respondents that had completed their visit and therefore could reflect on their emotions toward the site as well as their perceptions of criteria for UNESCO WHS.

3.4 Data analysis

Following recommendations for data driven segmentation studies (Dolnicar, 2004), data were analyzed in three steps. In step one, using Ward's clustering method with Euclidean distances, the *K*-Means clustering algorithm was used in an exploratory way to identify the potential number of clusters for the 14 motivation and 40 emotion items. As suggested in previous studies (Schmidt & Hollensen, 2006), the results of 2-5 cluster solutions were compared in terms of cluster sizes. The raw scores were used instead of the factor-cluster approach, given

1 that it has been heavily criticized for several reasons, including the transformation of the data
2 space that does not reflect the original items measured and the loss of 40-50% of the original
3 information when factor analysis is used (Dolnicar & Grun, 2008; Tuma, Decker & Scholz,
4 2011). In the second step, discriminant analysis was used to assess whether the chosen cluster
5 solution explained the most variance and the relative improvement in the percentage of correct
6 classification of respondents compared to the previous cluster solution (Muller & Hamm,
7 2014). For the motivation items, a two-cluster solution was the most appropriate with a
8 percentage of correct classification of respondents at 97.4% compared to 96.2% for a three-
9 cluster solution. For the emotion items, a three-cluster solution was the most appropriate
10 achieving a correct classification of 97.3% for respondents compared to 96.3% for the two-
11 cluster solution. In the third step, the clusters were profiled on the basis of demographic and
12 visitation characteristics of the sample as well as respondents' perceptions of whether Petra site
13 is still fulfilling the listing criteria for WHS.
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19 **4. Findings**

20 **4.1 Sample Demographic Profile and Visitation Characteristics**

21 Table 1 summarizes the demographic profile of the sample of visitors. Most of the respondents
22 were females (53.8%), in the 25-34 (26.9%) or above 65 (26.3%) age groups, and married
23 (56.1%). At least 31.4% had a post-graduate qualification. In terms of nationality, the sample
24 were primarily from Europe (Italy-10.7%, France-10.6%, and Germany-5%), UK (15.1%),
25 USA (11.6%), Australia (12.3%) and South Africa (5.4%). The majority of visitors were first-
26 timers (88.5%), visiting for leisure/holiday purposes (63%) and 34% visiting specifically
27 cultural and heritage sites on this trip. Respondents were travelling mostly with their
28 spouse/partner (39.9%). The average length of stay on this trip to Petra was 1.8 days.
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35 -TAKE IN TABLE 1-

36 **4.2 Motivation Segments for International Visitors to Petra**

37 The 14 visitation motives were segmented. The resulting clusters, which were of almost equal
38 size, were labelled "General Tourists" and "Heritage Tourists". The "General Tourists" cluster
39 typically reflects the motives of pleasure travelers that are interested in heritage experiences
40 but mostly related to the site characteristics (see Table 2). The "Heritage Tourists" cluster is
41 also driven by the site characteristics but they have stronger identification and attachment to a
42 site (Poria et al., 2004), as shown in Table 2.
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49 -TAKE IN TABLE 2-

50 **4.3 Emotions Segments for International Visitors to Petra**

51 The segmentation process for emotions indicated the existence of three clusters. An
52 examination of the mean scores shows that international visitors felt mainly positive emotions
53 such as amazement (M=4.38), fascination (M=4.32) and appreciation (M=4.16). The cluster
54 scores (see Table 3) show that Cluster 1 can be labelled "Positive Arousal" as they felt very
55 few negative emotions. Cluster 2, the smallest, comprised visitors who neither felt strong
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negative nor positive emotions. As such, they were labelled the “Low Arousals”. Cluster 3 comprised mainly visitors who felt low levels of negative emotions but also a lower level of arousal for positive emotions compared to Cluster 1. This cluster was labelled “Mixed Arousals”.

-TAKE IN TABLE 3-

4.4 Cluster Profiling on Demographic and Visitation Characteristics

The identified segments of motivation and emotion were profiled on the demographic and visitation characteristics to understand any significant differences between the clusters on those characteristics. Table 4 shows that the cluster of heritage tourists had a significantly higher percentage of female visitors ($\chi^2=6.76$, $p=0.009$). No significant differences existed on age ($\chi^2=9.52$, $p>0.05$), marital status ($\chi^2=0.33$, $p>0.05$), and education levels ($\chi^2=4.22$, $p>0.05$) between the motivation clusters. The nationality variable was recoded to allow for meaningful comparisons. As shown in Table 4, there was a significant difference between the motivation clusters on nationality ($\chi^2=59.5$, $p<0.001$). The ‘Heritage Tourists’ cluster had a higher percentage of French (14.1%) and Italian (12.5%) visitors. The ‘General tourists’ cluster had a higher percentage of British (18.5%) and Australian (13%) visitors. No significant differences existed between the motivation clusters on travel frequency ($\chi^2=0.39$, $p>0.05$) and travel party ($\chi^2=9.07$, $p>0.05$). A t-test on the average number of days spent in Petra revealed no significant difference between the clusters ($t=0.23$, $p>0.05$). These results suggest that the motivation clusters are mostly homogeneous on their demographic and visitation characteristics.

The emotion clusters were significantly different on gender ($\chi^2=14.87$, $p=0.001$). A higher percentage of females (58.4%) and males (62.1%) in the cluster of ‘Positive Arousals’ and ‘Low Arousals’ respectively. No significant differences between the emotion clusters on age ($\chi^2=16.32$, $p>0.05$), marital status ($\chi^2=0.67$, $p>0.05$) and education levels ($\chi^2=12.45$, $p>0.05$). As expected, there were significant differences between the clusters on nationality ($\chi^2=48.29$, $p=0.002$). A higher percentage of British (25.7%) and Australians (15%) visitors belong to the clusters of ‘Low Arousals’ and ‘Mixed Arousals’ respectively. A low percentage of Italians belong to the cluster of ‘Low Arousals’ (2.9%). No significant differences existed on travel frequency ($\chi^2=4.26$, $p>0.05$) and travel party ($\chi^2=14.01$, $p>0.05$). ANOVA results on the average length of stay revealed no significant differences between the clusters ($F=0.56$, $p>0.005$). Overall, these results suggest that the clusters are mostly homogeneous on their felt emotions with respect to demographic and visitation characteristics.

-TAKE IN TABLE 4-

4.5 Clusters and Perceptions of Criteria for UNESCO WHS

The two clusters of motivation and three clusters of emotion were profiled on the basis of their perceptions of the site with respect to the attributes that confer WH status. Table 5 shows that the motivation clusters rated all four attributes significantly different. The cluster of ‘Heritage Tourists’ on average assigned higher scores to all four criteria compared to the cluster of ‘General Tourists’.

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-TAKE IN TABLE 5-

ANOVA with Scheffé post-hoc comparisons on the four criteria between the three clusters of emotion, revealed significant differences. Table 6 shows that the cluster of ‘Positive Arousals’ had higher agreement levels than the other two clusters on the site being well protected (M=3.98), well managed (M=3.90), offering an authentic experience (M=4.43) and retaining its integrity as a WHS (M=4.48). The cluster of ‘Low Arousals’ had lower agreement levels on three of the four criteria compared to the cluster of ‘Mixed Arousals’.

-TAKE IN TABLE 6-

4.6 Motivation and Emotions of Heritage Tourists

To identify the influence of motivation on emotions, a multi-nomial logit model was estimated specifying the emotion cluster membership as the dependent variable, motivation clusters and demographic/visitation characteristics as the independent variables. The demographic and travel characteristics as well as the motivation clusters were all recoded as either ‘1’ to denote, for example, the specific age group being used to evaluate the model against and ‘0’ for all other age groups. This process facilitates the comparison of many categorical variables against the dependent variable as suggested in previous studies (Prayag et al., 2014). The cluster of ‘Low Arousals’ was specified as the baseline group for comparisons. The overall model was significant ($\chi^2=80.45$, $p<0.001$) and a good fitting model given that both Pearson ($\chi^2=532.93$, $p>0.05$) and Deviance’s ($\chi^2=477.58$, $p>0.05$) chi-square tests were not significant. The model explained 26.5% of the variance in the emotion clusters (Nagelkerke=0.265).

Table 7 shows that in comparison to the cluster of ‘Low Arousals’, the cluster of ‘Positive Arousals’ is less likely to be males ($\beta=-0.93$) and more likely to be staying for one day only ($\beta=0.79$). They are also more likely to belong to the ‘Heritage Tourists’ cluster ($\beta=-3.30$). In comparison to the ‘Low Arousals’ cluster, the ‘Mixed Arousals’ cluster is more likely to stay one day ($\beta=0.85$) and more likely to belong to the ‘Heritage Tourists’ cluster, though to a lesser magnitude compared to the ‘Positive Arousals’. A chi-square test between motivation and emotion clusters ($\chi^2=190.13$, $p<0.001$) shows that 73.9% of ‘Positive Arousals’ are ‘Heritage Tourists’ while 90.3% of Cluster 2 are ‘General Tourists’.

-TAKE IN TABLE 7-

5. Discussion and implications

Based on CAT and affect theory, this study sought to identify the influence of heritage motives on emotions and whether these are affected by demographic/travel characteristics and perceptions of attributes that contribute to WHS listing by adopting a segmentation approach (see Figure 1). In line with CAT, we found that different clusters of motivation are linked to different clusters of emotions, highlighting a relationship between motivation and emotion as suggested by goal congruence appraisals (Hosany, 2012). Heritage tourists can only be distinguished from the general tourists based on gender and nationality, while the same demographic characteristics can also distinguish tourists on their different emotional arousal levels. Thus, demographic and travel characteristics in general have little influence on

1 motivation and emotional responses. General tourists and heritage tourists have different
2 perceptions of WHS attributes and their emotional arousal levels due to these WHS attributes
3 are also different. Thus, the results highlight differences in perceptions of attributes of WHS
4 listing based on segments of motives and emotions. In essence, the differences affirm the
5 relevance of affect theory in understanding not only the attractiveness of tourist sites
6 (d’Hautesserre, 2015) but also emotional responses triggered by the site experience. In this way,
7 both CAT and affect theory can be integrated to understand the heritage tourism experience,
8 highlighting that identity related motives (self) and valence of emotional responses
9 (positive/negative) are to a large extent shaped by site accreditation characteristics rather than
10 tourist demographics. More importantly, emotion segments have different relationships with
11 motivation segments. These results give rise to both theoretical and managerial implications.
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16 **5.1 Theoretical implications**

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18 Similar to previous studies (Medina-Vurel et al., 2019; Poria et al., 2006a; Ramires et al., 2018;
19 Weaver et al., 2001) we identify both general travel and heritage specific motives, but more
20 importantly, an overlap between the segments in terms of site characteristics as a driver of
21 visitation. In line with McKercher’s (2002) typology of cultural tourists, we find a segment that
22 is driven by their connection to the heritage presented, which has been alluded to in previous
23 studies (McCain & Ray, 2003; Poria et al., 2003, 2004; Prayag et al., 2018). This forms the
24 basis of the differentiation between clusters identified in this study and confirms the existing
25 heterogeneity in the heritage tourism market (Kerstetter et al., 2001; Nyaupane et al., 2006).
26 The two segments identified reflect the dichotomy of spurious and true heritage tourists
27 proposed by Nyaupane and Andereck (2014). Yet, these studies fail to identify whether the
28 segments also have different emotional responses, despite Poria et al. (2006b) suggesting that
29 those who perceive the site to be part of their heritage desire higher emotional involvement.
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36 Extending previous emotion focused heritage tourism studies (Palau-Saumell et al., 2013;
37 Prayag et al., 2013) and those focused on dark heritage specifically (Nawijn et al., 2018), we
38 demonstrate that different levels of emotional arousal can be identified among heritage tourists.
39 While the emotional responses are mainly positive as suggested in both heritage tourism
40 (Prayag et al., 2013) and general vacation travel studies (Nawijn & Biran, 2019; Lin & Nawijn,
41 2020), the clusters of low and mixed arousals pinpoint to the visitor experience not eliciting
42 high emotional involvement. While such clusters are not uncommon in both marketing
43 (Hirschmann & Stern, 1999) and tourism studies (Bigne & Andreu, 2004; Del Chiappa et al.,
44 2014; Hosany & Prayag, 1993), heritage tourism studies have neglected the use of emotions as
45 a segmentation variable (Medina-Viruel et al., 2019). More importantly, we extend the study
46 of Medina-Viruel et al. (2019) by showing that these emotion clusters are driven by different
47 motives. The “Positive Arousal” cluster is driven by both heritage specific motives and site
48 characteristics, suggesting that the visitors in this segment have their connection to the
49 presented heritage as a strong motivating factor that elicits a range of positive emotions. The
50 “Mixed Arousal” cluster is particularly interesting as the high emotions felt relate to
51 amazement with the site characteristics but they are also driven by heritage specific motives.
52 Thus, the influence of different motives on the emotion clusters aligns with CAT (Roseman et
53 al., 1990), highlighting that different motives are appraised by goal congruence in relation to
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1 whether visitation motives are fulfilled or not, which then determines the valence of the
2 emotional response.

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4 Departing from existing studies that claim the WHS attracts increased visitation (Patuelli et al.,
5 2013; Yang et al., 2010), we demonstrate that different motivation and emotion segments
6 perceive attributes for WHS listing differently. Heritage tourists have a more positive
7 perceptions of authenticity and integrity of the site compared to general pleasure travel tourists.
8 These criteria also are linked to their high levels of positive arousal compared to the other two
9 emotion clusters. Yet, on criteria such as the site being well managed and protected, the clusters
10 are also very different, with the Low Arousal cluster having the worse perceptions in
11 comparison to the other two clusters. Thus, extending previous studies (Medina-Viruel et al.,
12 2019; Palau-Saumell et al., 2013; de Rojas & Camarero, 2008), we demonstrate that the listing
13 attributes have different impacts on segments of visitors, with heritage tourists and those with
14 positive arousal, more likely to have positive perceptions of some of the attributes of listing.
15 Thus, these findings align with affect theory (d’Hautesserre, 2015) in demonstrating that visitors
16 to heritage sites build affective relationships to the physical (site characteristics) and the self
17 (identity motives).
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24 **5.2 Managerial implications**

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26 From a managerial perspective, the results have marketing, visitor experience management and
27 site management implications. Different targeting positioning strategies are required for the
28 General Tourists and Heritage Tourists segments. While both segments are drawn by the
29 physical characteristics of the site, the latter is drawn by a sense of personal connection to the
30 site. This implies that marketing and communication campaigns should use themes that depict
31 diaspora themes with taglines such as “Going back to my roots”. The results confirm a segment
32 of positive arousals highlighting a range of positive emotions such as awe, inspired, happy,
33 surprise and peaceful that are elicited from the experience. This segment should be encouraged
34 to disseminate positive word-of-mouth both online and offline to encourage others to visit
35 based on highly emotional experience. Yet, the low arousal segment highlights issues with the
36 on-site visitor experience given that this group did not feel negative but also did not feel many
37 positive emotions. Therefore, the site characteristics in themselves are enough to arouse high
38 levels of positive emotions. Thus, for this group the delivery of the actual experience will need
39 to be improved through either tour guiding services or self-heritage interpretation using, for
40 example, QR codes. Experience design principles can also be considered as a way to improve
41 flow of positive emotions during the experience.
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50 It is clear that on two attributes, authenticity and integrity of the site, the heritage tourist
51 segment had the higher perceptions compared to the general tourist segment. However, both
52 segments rated management and protection of the site below the scores for the other two
53 attributes. Hence, for sustainable management of the site, these attributes must be improved as
54 they significantly affect the “Low” and “Mixed” Arousal segments. The limited influence of
55 demographic and travel characteristics, besides gender and nationality, on motivation clusters
56 highlight some level of homogeneity in tourist characteristics that drive visitation, thus shifting
57 the focus to other emotional, attitudinal and perceptual factors that have stronger influence on
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1 visitation. In particular, gender emerges as a strong differentiator between the emotion clusters.
2 Thus, a gendered focus in managing visitor experience and communication campaigns is
3 necessary to improve the experience of female visitors.
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5 **6. Conclusion, Limitations and Areas of Further Research**

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7 In conclusion, the main contribution of this study is that it provides empirical evidence on the
8 relationship between motivation and emotion in heritage tourism, highlighting that positive
9 emotions are elicited by both site characteristics and heritage specific visitation motives.
10 However, the study is not without limitations. First, only limited number of motives (general
11 and heritage specific) were measured and these can be expanded and refined further. Second,
12 only recent attributes added to the listing on WHS were used to evaluate tourists' perceptions.
13 These can be extended further as suggested in other studies (e.g., Adie et al., 2018). Third, the
14 survey instrument was administered only in the English language, potentially limiting the
15 sampling of potential respondents for the study. Fourth, emotions measured using the recall
16 method have its own limitations (see Nawijn & Biran, 2019). Finally, the cross-sectional nature
17 of the study may limit the generalizability of the findings. Thus, further modeling drawing on
18 longitudinal research design and using mixed-method or innovative research approaches would
19 provide valuable insights. Nonetheless, the results offer avenues for further research. Heritage
20 tourism and authenticity remain a hot topic of interest and thus future studies should examine
21 the interplay of motives, emotions and authenticity from a segmentation perspective. Also,
22 beyond nostalgia (see Prayag & Del Chiappa, 2021), evaluating discrete emotions (Prayag et
23 al., 2013) remain an approach sparsely applied in heritage tourism studies. Thus, future studies
24 could examine what aspects of heritage consumption elicit different discrete emotions. In times
25 of adversity where travel restrictions are in place due to COVID-19, examining how visitation
26 motives to heritage sites and emotions contribute to individual well-being would be a
27 worthwhile area of academic scholarship.
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Figure 1: Theoretical framework of the study

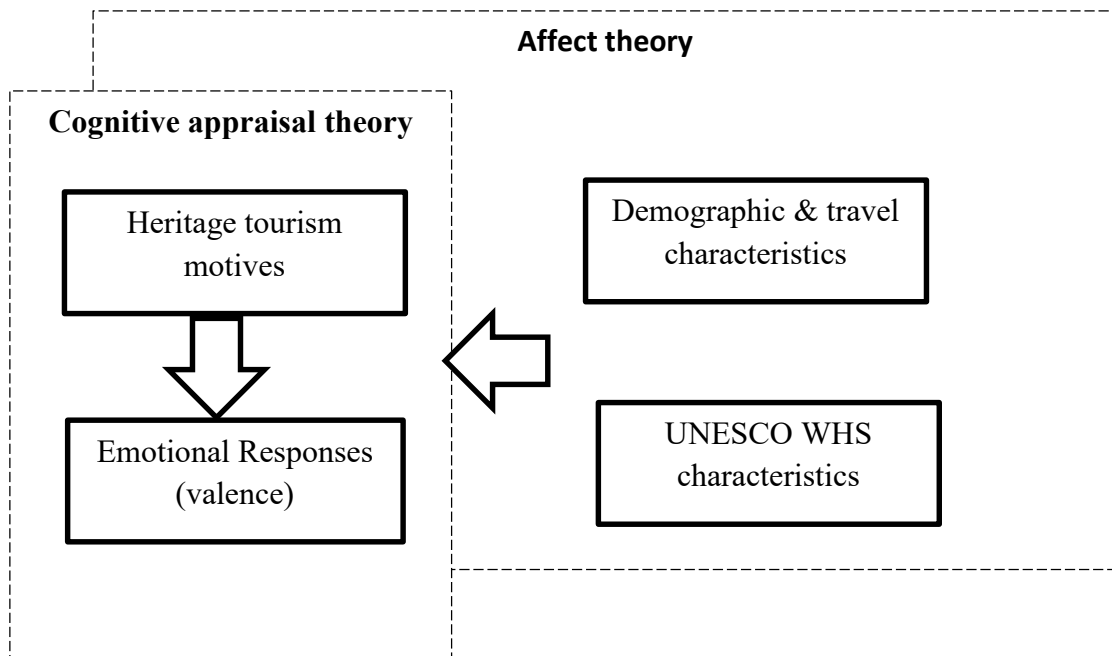


Table 1: Sample Demographic and Visitation Characteristics

Gender	%	Nationality	%	Travel Freq.	%
Male	46.2	UK	15.1	No previous visits	88.5
Female	53.8	USA	11.6	1 Time	8.6
Age groups		Germany	5.1	2 Times	1.2
16-24	5.9	Australia	12.3	3 Times	0.7
25-34	26.9	Spain	4.3	4 Times	0.4
35-44	12.2	France	10.6	More than 4 Times	0.7
45-54	11.0	Italy	10.7	Travel Purpose	
55-64	17.8	Poland	2.5	Leisure/Holidays	63.0
65 and above	26.3	Netherlands	4.0	Visiting Cultural and Heritage Sites	34.0
Marital Status		Philippines	1.5	Visiting friends and relatives	0.9
Single	30.2	Canada	1.9	Business	0.8
Married	56.1	Romania	0.7	Other	1.3
other	13.7	Switzerland	1.1	Travel Party	
Education		India	0.9	Alone	3.0
High school graduate or less	17.3	Belgium	1.5	With your Spouse/Partner	39.9
College graduate-undergraduate	26.0	Portugal New Zealand	0.7	With Family Members	15.1
Postgraduate degree	31.4	South Africa	0.7	With Friends	18.2
Doctoral degree	10.4	Africa	5.4	Organized Tour	22.0
Professional qualification	12.8	Other	9.1	Other	1.8
Other	2.1				

Table 2: Segments of Motivation

Motivation items	Cluster 1 (n=654) General Tourists	Cluster 2 (n=687) Heritage Tourists	Mean	S.D.	Skw.
You felt you should visit this site	4.24	4.77	4.51	0.75	-2.02
It is a world famous site	4.49	4.84	4.67	0.65	-2.63
You wanted to feel emotionally connected to this site	2.86	4.06	3.49	1.04	-0.22
You feel a sense of belonging to this site	2.33	3.42	2.91	1.04	0.04

It has unique historical characteristics	4.33	4.79	4.55	0.74	-2.17
This site is part of your own heritage	1.81	3.05	2.47	1.34	0.50
To learn more about the history associated with this site	3.73	4.49	4.11	0.81	-0.84
To see the physical characteristics of the site	4.11	4.62	4.35	0.83	-1.59
It was on your way to visit other attractions	2.33	3.15	2.77	1.40	0.15
To learn about the local heritage and culture	3.68	4.47	4.08	0.87	-1.02
A chance for you to take some pictures of this site	3.80	4.52	4.17	0.97	-1.30
To enrich your knowledge of world cultures	4.15	4.78	4.46	0.72	-1.71
A chance for you to develop a deep understanding of the archaeological heritage of this site	3.48	4.47	4.00	0.93	-0.83
The UNESCO world heritage status of this site	3.45	4.44	3.96	1.05	-0.87

Note: S.D= standard deviation, Skw.=skewness

Table 3: Segments of Emotions

Emotions	Cluster 1 (n=476) Positive Arousals	Cluster 2 (n=106) Low Arousals	Cluster 3 (n=512) Mixed Arousals	Mean	S.D.	Skw.
Angry	1.16	1.55	1.48	1.35	0.81	2.50
Irritated	1.26	1.82	1.75	1.54	0.93	1.78
Annoyed	1.21	1.80	1.64	1.45	0.86	2.02
Sad	1.20	1.41	1.50	1.35	0.83	2.61
Down-hearted	1.19	1.29	1.44	1.29	0.74	2.69
Unhappy	1.07	1.34	1.36	1.22	0.64	3.22
Stress	1.21	1.42	1.57	1.40	0.80	2.08
Nervous	1.25	1.30	1.51	1.39	0.82	2.16
Overwhelmed	2.75	2.17	2.54	2.58	1.50	0.30
Awe	3.96	2.95	3.62	3.65	1.38	-0.86
Wonder	4.68	3.25	4.06	4.21	0.99	-1.57
Amazed	4.81	3.43	4.22	4.38	0.83	-1.68
Grateful	4.74	2.43	3.78	4.08	1.00	-1.14
Appreciative	4.79	2.53	3.95	4.16	0.95	-1.30
Thankful	4.70	2.18	3.73	3.99	1.03	-1.04
Hopeful	4.38	1.59	3.14	3.55	1.16	-0.51
Optimistic	4.41	1.66	3.22	3.60	1.14	-0.60
Encouraged	4.38	1.58	3.22	3.55	1.14	-0.55
Nostalgic	3.78	1.62	2.88	3.11	1.31	-0.24
Inspired	4.50	1.93	3.55	3.78	1.08	-0.89
Uplifted	4.47	1.89	3.44	3.73	1.08	-0.79
Elevated	4.48	1.80	3.35	3.68	1.11	-0.74
Joy	4.69	2.07	3.71	3.98	1.01	-1.05

Glad	4.71	2.19	3.76	4.00	1.00	-1.16
Happy	4.76	2.52	3.89	4.13	0.94	-1.20
Love	4.46	1.62	3.19	3.57	1.20	-0.58
Trustful	4.17	1.50	2.98	3.36	1.17	-0.39
Delight	4.56	1.84	3.49	3.79	1.07	-0.87
Cheerful	4.51	1.78	3.45	3.74	1.06	-0.80
Enthusiastic	4.69	2.01	3.71	3.97	1.03	-1.08
Warm-hearted	4.52	1.68	3.33	3.68	1.12	-0.69
Caring	4.32	1.70	3.14	3.52	1.16	-0.50
Fascination	4.79	2.92	4.19	4.32	0.93	-1.62
Surprise	4.66	2.70	3.89	4.12	1.01	-1.28
Serene	4.39	2.01	3.29	3.65	1.14	-0.62
Content	4.49	2.13	3.52	3.81	1.05	-0.76
Peaceful	4.44	2.04	3.35	3.69	1.15	-0.72
Disappointment	1.22	1.71	1.74	1.52	0.96	1.91
Regret	1.13	1.52	1.64	1.41	0.86	2.11
Displeasure	1.09	1.63	1.62	1.40	0.87	2.22

Note: S.D= standard deviation, Skw.=skewness

Table 4: Profile of clusters by demographic and visitation characteristics

Clusters	<i>Motivation Clusters</i>		<i>Emotion Clusters</i>		
	Cluster 1	Cluster 2	Cluster 1	Cluster 2	Cluster 3
	General Tourists	Heritage Tourists	Positively Aroused	Low Arousals	Mixed Arousals
Gender	%	%	%	%	%
Male	49.7	42.4	41.6	62.1	48.1
Female	50.3	57.6	58.4	37.9	51.9
Age					
16-24	6.6	5.1	6.5	6.7	6.2
25-34	29.3	26.4	28.2	21	27.2
35-44	11.4	14	12.4	6.7	13.9
45-54	8.5	12.5	11.6	5.7	10.9
55-64	18.8	17.2	18.3	25.7	16.9
65 and above	25.4	24.8	22.9	34.3	24.9
Marital Status					
Single	31.1	30.3	30.2	27	30.8
Married	55.1	56.7	56.8	58.4	56.8
Other	13.8	13	12.9	14.6	12.4
Education levels					
High school or less	16.9	16.4	17.6	17.3	15.6

College graduate	26	26.3	27.5	26.9	25.9
Postgraduate degree	33.6	29.8	30.8	19.2	33.7
Doctoral degree	9.5	10.5	9.9	14.4	9.6
Professional qualification	12.5	15	12.5	19.2	13.6
Other	1.4	2.1	1.7	2.9	1.6
Nationality					
UK	18.5	11	14.8	25.7	17.6
USA	11.8	10.6	14.4	13.3	12.2
Germany	6.9	4.1	3.6	5.7	6
Australia	13	10.9	11.8	13.3	15
Spain	3.9	4.3	4	4.8	3.8
France	7.2	14.1	7.2	4.8	8
Italy	8.8	12.5	10.6	2.9	10.6
Poland	3.3	2.2	1.7	3.8	2.4
Netherlands	6.3	2.7	2.1	3.8	6.2
Canada	1.7	2.5	2.7	1	1.8
Belgium	1.6	1.6	1.3	1	1.4
South Africa	3.5	6.9	6.8	6.7	3.2
Other	13.5	16.5	18.6	14.3	11.8
Travel Frequency					
First time	89.1	88.1	87	84.9	90.4
Repeat	10.9	11.9	13	15.1	9.6
Travel Party					
Alone	2.9	2.6	2.3	5.7	2.5
Spouse/Partner	42	38.7	38.7	47.2	42.5
Family members	17	14	14.5	17.9	15.7
Friends	17.5	17.6	17.9	9.4	18
Organized tour	18.8	25.2	24.4	17.9	19.4
Other	1.8	1.9	2.3	1.9	2
Avg. length of stay	1.8	1.8	1.8	1.8	1.7

Table 5: Motivation clusters and Perceptions of Criteria for UNESCO WHS

	Mean	SD	Skw.	Cluster 1 General Tourists Mean	Cluster 2 Heritage Tourists Mean	<i>t</i> -value and <i>p</i> -level
UNESCO WH criteria						
This site is well protected	3.65	1.04	-0.65	3.48	3.80	<i>t</i> =-5.74, <i>p</i> <0.001
This site is well managed	3.58	1.03	-0.56	3.40	3.73	<i>t</i> =-5.86, <i>p</i> <0.001
This site offers an authentic experience	4.11	0.83	-0.92	3.88	4.32	<i>t</i> =-10.02, <i>p</i> <0.001
This site retains its integrity as a world heritage site	4.16	0.87	-1.07	3.94	4.38	<i>t</i> =-9.34, <i>p</i> <0.001

Note: S.D= standard deviation

Table 6: Emotion clusters and Perceptions of Criteria for UNESCO WHS

UNESCO WH criteria	Cluster 1 Positive Arousals	Cluster 2 Low Arousals	Cluster 3 Mixed Arousals	ANOVA results	Post-Hoc comparisons
This site is well protected	3.98	3.25	3.47	F=42.23*	1vs2*, 1vs3*, 2vs3 ^{n.s}

This site is well managed	3.90	3.10	3.42	F=44.59*	1vs2*, 1vs3*, 2vs3*
This site offers an authentic experience	4.43	3.67	3.91	F=76.54*	1vs2*, 1vs3*, 2vs3*
This site retains its integrity as a world heritage site	4.48	3.65	3.95	F=75.59*	1vs2*, 1vs3*, 2vs3*

*p<0.001, n.s=not significant

Table 7: Multinomial logit model results

Variables	Cluster 1 – Positive Arousals			Cluster 3- Mixed Arousals		
	β	95% Confidence Interval for Exp(β)		β	95% Confidence Interval for Exp(β)	
		Lower Bound	Upper Bound		Lower Bound	Upper Bound
Intercept	3.22**			1.61		
Male	-0.93**	0.22	0.71	-0.52	0.34	1.03
16-24 years old	-0.29	0.24	2.41	0.37	0.47	4.43
Married	0.04	0.54	1.99	0.08	0.59	1.99
College graduate	0.28	0.70	2.49	0.22	0.69	2.22
British	0.15	0.56	2.39	0.08	0.57	2.08
First-time visitor	0.31	0.57	3.23	0.60	0.81	4.13
Visiting cultural and heritage sites	0.20	0.65	2.28	0.16	0.66	2.11
Spouse/Partner	-0.05	0.51	1.76	0.00	0.56	1.76
One day stay	0.79**	1.17	4.17	0.85**	1.28	4.23
Heritage tourists cluster	-3.30*	0.02	0.09	-1.68*	0.08	0.43

*p<0.001, **p<0.05, cluster 2 is the reference category

Appendix A

Evaluating Your Heritage Experience in Petra

How many times have you visited Petra before?					
<input type="checkbox"/>	No previous visits	<input type="checkbox"/>	1 time	<input type="checkbox"/>	2 times
<input type="checkbox"/>	3 times	<input type="checkbox"/>	4 times	<input type="checkbox"/>	More than 4 times
What is the main purpose of your visit to Petra (<i>Please select only one</i>)					
<input type="checkbox"/>	Leisure/Holidays		<input type="checkbox"/>	Visiting Cultural and Heritage Sites	
<input type="checkbox"/>	Visiting friends and relatives		<input type="checkbox"/>	Business	
<input type="checkbox"/>	Other (<i>Please specify</i>)				
Who are you travelling with on this trip?					
<input type="checkbox"/>	Alone		<input type="checkbox"/>	With your Spouse/Partner	
<input type="checkbox"/>	With Family Members		<input type="checkbox"/>	With Friends	
<input type="checkbox"/>	Organized Tour		<input type="checkbox"/>	Other (<i>Please specify</i>)	
How long is/will be your current stay on this trip to Petra? _____ (days/months)					

The statements below describe some of the **reasons that might have influenced your decision to visit Petra**. Please indicate your level of agreement or disagreement with each statement using the scale ranging from *1 = Strongly Disagree* to *5 = Strongly Agree*.

Reasons for visiting this site	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
You felt you should visit this site	1	2	3	4	5
It is a world famous site	1	2	3	4	5
You wanted to feel emotionally connected to this site	1	2	3	4	5
You feel a sense of belonging to this site	1	2	3	4	5
It has unique historical characteristics	1	2	3	4	5
This site is part of your own heritage	1	2	3	4	5
To learn more about the history associated with this site	1	2	3	4	5
To see the physical characteristics of the site	1	2	3	4	5
It was on your way to visit other attractions	1	2	3	4	5
To learn about the local heritage and culture	1	2	3	4	5
A chance for you to take some pictures of this site	1	2	3	4	5
To enrich your knowledge of world cultures	1	2	3	4	5

A chance for you to develop a deep understanding of the archaeological heritage of this site	1	2	3	4	5
The UNESCO world heritage status of this site	1	2	3	4	5

During your visit to this site, you may have experienced a series of emotions. **Take a few moments to picture your experience again and how you felt towards this site.** Please, indicate to what extent did you experience the following emotions [1 = Not at All and 5 = Very Much]

While visiting this site, I felt	Not at all	Little	Neither Much nor Little	Much	Very Much
Angry	1	2	3	4	5
Irritated	1	2	3	4	5
Annoyed	1	2	3	4	5
Sad	1	2	3	4	5
Down-hearted	1	2	3	4	5
Unhappy	1	2	3	4	5
Stress	1	2	3	4	5
Nervous	1	2	3	4	5
Overwhelmed	1	2	3	4	5
Awe	1	2	3	4	5
Wonder	1	2	3	4	5
Amazed	1	2	3	4	5
Grateful	1	2	3	4	5
Appreciative	1	2	3	4	5
Thankful	1	2	3	4	5
Hopeful	1	2	3	4	5
Optimistic	1	2	3	4	5
Encouraged	1	2	3	4	5
Nostalgic	1	2	3	4	5
Inspired	1	2	3	4	5
Uplifted	1	2	3	4	5
Elevated	1	2	3	4	5
Joy	1	2	3	4	5
Glad	1	2	3	4	5
Happy	1	2	3	4	5
Love	1	2	3	4	5
Trustful	1	2	3	4	5
Delight	1	2	3	4	5
Cheerful	1	2	3	4	5
Enthusiastic	1	2	3	4	5
Warm-hearted	1	2	3	4	5
Caring	1	2	3	4	5
Fascination	1	2	3	4	5
Surprise	1	2	3	4	5
Serene	1	2	3	4	5
Content	1	2	3	4	5
Peaceful	1	2	3	4	5
Disappointment	1	2	3	4	5
Regret	1	2	3	4	5

Displeasure	1	2	3	4	5
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With reference to your visit to this site, please use the scale [1 = *Strongly Disagree* and 5 = *Strongly Agree*] to indicate your level of agreement or disagreement with the following statements.

In general, as a tourist, you:	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Think this site is well protected	1	2	3	4	5
Think this site is well managed	1	2	3	4	5
Think this site offers an authentic experience	1	2	3	4	5
This site retains its integrity as a world heritage site	1	2	3	4	5

ABOUT YOURSELF

Gender	<input type="checkbox"/> Male	<input type="checkbox"/> Female		
Age	<input type="checkbox"/> 16-24	<input type="checkbox"/> 25-34	<input type="checkbox"/> 35-44	
	<input type="checkbox"/> 45-54	<input type="checkbox"/> 55-64	<input type="checkbox"/> 65 and above	
Marital Status	<input type="checkbox"/> Single	<input type="checkbox"/> Married	<input type="checkbox"/> Other	
Education				
<input type="checkbox"/>	High school graduate or less	<input type="checkbox"/>	Doctoral degree	
<input type="checkbox"/>	College graduate-undergraduate	<input type="checkbox"/>	Professional qualification	
<input type="checkbox"/>	Postgraduate degree	<input type="checkbox"/>	Other (<i>Please specify</i>)	
Nationality	<input type="checkbox"/> British	<input type="checkbox"/> American	<input type="checkbox"/> German	<input type="checkbox"/> Australian
	<input type="checkbox"/> Spanish	<input type="checkbox"/> French	<input type="checkbox"/> Italian	<input type="checkbox"/> Other, please specify _____

Thank you for your time and cooperation

Girish Prayag is a Professor of Marketing at the UC Business School, University of Canterbury, New Zealand. His research interests are related to tourists' emotions, place attachment, and organizational resilience of tourism firms.

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Author contribution

Girish Prayag conceived and deigned the theoretical framework of the paper, conducted the data analysis, and took the lead in writing and editing the manuscript. Zaid Alrawadieh wrote the literature review and Ziad Alrawadieh collected the data. All authors participated in revising and improving the manuscript, read and approved the final version.