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Sustainable Heritage Tourism: A Tourist-Oriented Approach for Managing Petra Archaeological Park, Jordan

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SUSTAINABLE HERITAGE TOURISM:
A TOURIST-ORIENTED APPROACH FOR MANAGING PETRA
ARCHAEOLOGICAL PARK, JORDAN

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Parks, Recreation and Tourism Management

by
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Accepted by:
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ABSTRACT

Although sustainability of heritage tourism has become a major concern from the perspectives of both academics and practitioners, the majority of research and studies have tended to understand the cultural and educational issues of heritage tourism rather than focusing on the application of sustainability in a practical context. To achieve sustainability in heritage tourism, heritage sites should be managed effectively in a way that ensures preservation of heritage resources and provides quality experiences to the tourists. Traditionally, heritage tourism planning and management relied on a top-down, professional-led approach that ignores the interests of different stakeholders (e.g., heritage tourists) in heritage attractions. Furthermore, strategies for heritage tourism management have conventionally focused on the supply side (i.e., the resource) and ignored the demand side (i.e., the tourists). Recently, it was recognized that involving tourists in the management process is a key element to achieve sustainability; therefore, the global trends in heritage tourism are now moving forward from a product-led approach that underlies exhibits and education, to a more tourist-oriented approach that focuses on consumer preferences and quality of personal experiences.

It was suggested in the literature that sustainability can be applied through development and implementation of contemporary indicators and standards-based frameworks such as Limits of Acceptable Change (LAC), Visitor Impact Management (VIM), and Visitor Experience and Resource Protection (VERP). Generally, the main objective of this dissertation was to understand tourists and their experiences at Petra Archaeological Park. The series of articles included in this dissertation were intended to

address the three main elements of these management frameworks. Specifically, this research presented studies intended to help formulate empirical, science-based, tourists-informed indicators and crowding-related standards for the tourism experience at Petra, and monitor these standards. Also, tourists' support for alternative management strategies was addressed.

DEDICATION

To my parents, my brothers and my sisters for providing continual support and motivation.

A special dedication to my lovely wife, Hala, for her support, encouragement, and constant love.

To my little daughter, Zain and Seba. You have brought the most joy to my life.

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CHAPTER ONE

INTRODUCTION

In view of the importance of its economic benefits to preservation and management of heritage resources, heritage tourism has become one of the main justifications to maintain heritage sites (McArthur, 1994). Recognized as a distinct product category in the late 1970s, heritage tourism now represents both opportunities and threats to the sustainability of heritage resources. It is rarely possible for tourists to experience heritage resources without causing any damage to the resources (McArthur & Hall, 1996; McArthur, 1994). Also, alongside its benefits are the impacts of tourists on heritage significance and values (McKercher & du Cros, 2010). Wall (1989, p. 10) believes that the mere presence of tourists at heritage sites "is likely to result in the modification of those environments." Making the resources less attractive and reducing their values may in turn lead to decline in tourist satisfaction and the benefits that others can gain from heritage.

Consequently, there is a challenging relationship between heritage resources and tourism; how can these nonrenewable and irreplaceable resources be visited and experienced by tourists while at the same time protecting them for future generations? Implicit in this argument is the concept of sustainable heritage tourism that aims to maximize the quality of tourists' experience and minimize their impacts to protect the resources for the next generations, and this is what visitor management intends to achieve. Therefore, visitor management might be considered as a tool to achieve the goals of sustainability in heritage tourism.

While tourists' impact cannot be ignored, the need for heritage tourism to seriously consider both the resource (supply side) and visitor experience (demand side) has been argued by some scholars (McArthur & Hall, 1993). Traditionally, management of heritage tourism was product-led (Edwards & Liurdes, 1996), and heritage resources were considered as the central element of the process (C. M. Hall & McArthur, 1993, 1996; Timothy & Boyd, 2003). Recently, attention has been paid to the importance of the tourist in achieving the goal of sustainability in heritage tourism (Willson & McIntosh, 2007). When tourists have a satisfying experience, they support the philosophy of the site's management (C. M. Hall & McArthur, 1993, 1996), so the site becomes easier to manage. Both highly satisfied tourists and involved stakeholders (including tourists themselves) are a key to the long-term public support for the protection of heritage areas in general and the funding of these sites as a social priority.

The issue of sustainability has occupied a significant part in heritage tourism research, but the majority of research has tended to understand the cultural and educational issues of heritage tourism rather than focusing on the application of sustainability in a practical context (Fyall & Garrod, 1998; Millar, 1989). It is notable that issues related to the supply side (i.e., conservation, interpretation, resources management) are the main focus of the literature (Fyall, Garrod, & Leask, 2003; Leask & Fyall, 2006; Shackley, 2001). As mentioned before, to achieve the goal of sustainable heritage tourism, both supply and demand sides should be considered. A potential issue in heritage tourism management is that heritage tourists (demand side) are not a homogeneous segment. They can be differentiated by their motivations and experience that they seek (Marcotte &

Bourdeau, 2006; McKercher & du Cros, 2003, 2010; McKercher, 2002; Nuryanti, 1996; Orbaşlı & Woodward, 2009; Timothy & Boyd, 2003). Some tourists are highly motivated to visit heritage sites, and for others visiting heritage sites does not play an important role in travel decisions (McKercher & du Cros, 2010). The different types of tourists with different level of experience and motivation should be considered carefully in studying and implementing sustainable management strategies at heritage sites.

Indicators and Standards-based Frameworks

Several frameworks have been developed for managing visitors at parks and related areas. The main focus of these frameworks was on visitor opportunities and experiences (Timothy & Boyd, 2003). These frameworks have been developed and widely applied to nature-based parks, rather than heritage sites. They include Limits of Acceptable Change (LAC) (Stankey, Cole, Lucas, Petersen, & Frissell, 1985), Visitor Impact Management (VIM) (Kuss, Graefe, & Vaske, 1995), and Visitor Experience and Resource Protection (VERP) (National Park Service, 1997). The major purpose behind all of these frameworks is to balance between the protection of resources and providing quality experiences to visitors. Furthermore, all of these frameworks depend on three basic principles that address sustainability at the park (Manning, 2007, 2011; Manning et al., 2011; National Park Service, 1997):

1. Formulate management objectives and associated indicators and standards.
2. Monitor indicators to determine if and where standards have been violated.
3. Implement management actions to maintain indicators within the designated standards.

The Limits of Acceptable Change (LAC) framework was primarily developed for managing visitors in recreation areas in the U.S. National Wilderness Preservation System (McCool, 1996). The LAC framework is used to formulate recreational carrying capacity by focusing on the desired conditions in the area rather than on how much use an area can tolerate. It includes a series of steps that help define desired conditions for an area when change is impending, and when management actions are necessary to maintain those conditions (Stankey et al., 1985). The framework helps managers identify whether the levels and patterns of use are within the capacity of an area. When conditions reach the acceptable limits of use they have also reached the area's capacity under the current management practices. Management actions are then implemented before any more use can be accommodated.

The Visitor Impact Management (VIM) framework was developed by the National Park and Conservation Association (Kuss et al., 1995). This framework combines visitor management principles within a process that aims to reduce or control the impacts that threaten the quality of resources and the visitor experience (C. M. Hall & McArthur, 1998). It focuses on analysis of the possible causes of visitor-induced impacts as a means for enhancing the implementation of management actions (Manning, 2011).

To identify and manage carrying capacity in the national park system, the U.S. National Park Service developed the Visitor Experience and Resource Protection (VERP) framework (National Park Service, 1997). This framework is based on identification of objectives for the appropriate desired conditions of resource (both natural and cultural) and the visitor experience. Management objectives reflecting these desired conditions are

expressed in the form of indicators and standards. The indicator variables are then monitored to make sure that the standards are maintained. If the standards are violated, then management actions should be taken to bring the indicators into compliance with the standards (Manning, 2001; National Park Service, 1997).

Indicators are defined as “specific, measurable physical, ecological, or social variables that reflect the overall condition of a zone. Resource indicators measure visitor impacts on the biological, physical, and/or cultural resources of a park; social indicators measure visitor impacts on the visitor experience” (National Park Service, 1997, pp. 58–59). To be effective, indicators should have some characteristics. The main two characteristics are manageable and measurable. Manageable means that indicators should be responsive to management actions (Manning, 2007). Measurable means that indicators should be easily quantified and determined in objective terms (Lime, Anderson, & Thompson, 2004). Additional characteristics for good indicators include: specific, objective, reliable, repeatable, related to visitor use, sensitive to visitor use, and significant in defining the quality of the visitor experiences (Manning, 2007, 2011; National Park Service, 1997).

A standard is defined as “the minimum acceptable condition for each indicator variable (National Park Service, 1997, p. 59). Standards are criteria used to evaluate environmental, social, and/or managerial conditions. Management goals and objectives are reflected by determining the appropriate indicators, and standards are quantifiable value judgments reflecting what management is attempting to achieve. Based on previous work (Manning, 2007, 2011; National Park Service, 1997; Stankey et al., 1985; Vaske,

Whittaker, Shelby, & Manfredo, 2002; Whittaker & Shelby, 1992), standards should be characterized by the following to be effective:

- Quantifiable: since indicators are quantifiable, standards should be also expressed in an unequivocal quantitative manner. For example, a good standard might specify that tourists should be able to see and enjoy a historical statue with “less than fifteen other people present”, but specifying that there should only be “few other people present” is not a good standard because it does not specify the minimum acceptable condition in a clear-cut way.
- Time- or space-bounded: while a quantifiable component specifies how much impact is acceptable, time- or space-bounded components expresses both how much of an impact is acceptable, and how often or where it can occur. It is recommended that standards be linked with a time period and a defined space. This is crucial with crowding-related issues.
- Impact-oriented: standards should focus on the acceptable impact level, rather than on the management action used to maintain impacts from exceeding standards. “Ten groups visiting the site per day” is not a good standard; because it refers to the use limits rather than the acceptable impact. A better standard is “Less than five encounters per day”, since encounters are a better representation of crowding impacts.
- Attainable: standards need to reflect conditions that are realistically attainable.

Standards allow managers to be proactive and establish priorities for management actions (Vaske et al., 2002). By determining the ideal environmental, social, and managerial conditions by formulating standards, managers will be allowed to pay attention

to when impacts, whether physical or social, are approaching or exceeding the defined levels, rather than reacting to the problems after they occur (Whittaker & Shelby, 1992).

Standards can be derived from different sources of information, such as scientific literature, expert judgments, scientific research, and public opinion, especially that derived from tourists (Manning, Valliere, & Wang, 1999; Manning, 1999; National Park Service, 1997). Research on tourist-based standards has “special appeal” because it involves tourists who are affected by the management decisions (Manning et al., 1999, p. 98; Manning, 1999, p. 328). A large body of research indicates that normative theory is a reliable way to develop standards and evaluate different social, environmental, and/or managerial conditions at parks and related areas. Normative theory suggests that tourists have shared norms that can be used to formulate standards of quality for different park conditions and experiences (Manning & Krymkowski, 2010).

Statement of the Problem

Petra Archaeological Park (Petra) is one of the most important tourism attractions in Jordan and it is visited by tourists from many different countries. According to the Ministry of Tourism and Antiquities in Jordan, more than half a million tourists visited the park last year (Ministry of Tourism and Antiquities of Jordan, 2013). Expanding visitation to the park increasingly challenges the managers charged with balancing their dual tasks of resource protection and high quality tourism provision. One of the main threats facing Petra today is visitor management. The UNESCO Reactive Mission to Petra in December 2010 called on the park managers to “Develop and implement a public use plan, including the definition of visitor management strategies...” (UNESCO, 2011, p. 100). According to

Akrawi (2012) there is no system in place to help manage and monitor the tourists within the site at any given point in time. Worsening the situation is the absence of regulations or directional signs to trails and monuments, and tourists move uncontrolled throughout the site at their own risk. Unfortunately, even though the apparent need exists and countless examples of visitor management frameworks have been proposed in various planning documents, the adoption and full implementation of these frameworks has not been done in Petra. Furthermore, visitor management and carrying capacity research that has been conducted for Petra has followed the traditional approach by focusing on the resource and ignoring the tourists and their experiences (Comer & Belli, 1996; Magablih & Al-Shorman, 2009).

Research Aims and Questions

It is not effective or appropriate to manage the physical heritage resources in isolation from the people who are the owners of the heritage and those who come to experience it. Generally, this dissertation intends to understand the tourists and their experiences at the World Heritage Site Petra. Specifically, this research presents a study intended to help formulate empirical, science-based, tourists-informed indicators for the tourism experience at Petra. Also, this research will address crowding-related standards and tourists' support for alternative management strategies as important issues in managing tourists in the park. Different heritage tourist types and values for Petra are considered in relationship to these indicators, standards, and alternative management actions. In total, this information would assist in applying one of the frameworks mentioned before to help ensure a high quality tourism experience at Petra.

The dissertation tries to answer the following general questions:

1. What is the nature of the tourist experience at Petra?
2. What are the indicators that affect the tourist experience at Petra?
3. What are tourists' perceptions about crowding at Petra?
4. What are the tourists' standards for crowding at Petra?
5. How do tourists value Petra?
6. What are the attitudes and preferences of tourists toward the management strategies and conditions at Petra?

Dissertation Format

An article-style format has been used for this dissertation. Three articles were prepared for submission to peer-reviewed academic journals. Each article includes a separate literature review, methods, results and discussion. Generally, the first article aims to understand the tourists' experience at Petra and to gather information to formulate indicators for this experience. This article will be submitted to the *International Journal of Heritage Studies*. The second article focuses on crowding as being one of main issues affecting both the park's resources and tourists' experiences (Akrawi, 2012; Magablih & Al-Shorman, 2009). It aims to understand the heterogeneity of heritage tourists and how that affects their crowding standards. This article will be submitted to the *Journal of Heritage Tourism*. The third article explores how this heterogeneity between tourists affects their support or opposition for different types of visitor management actions. This article will be submitted to the *International Journal of Tourism Research*.

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CHAPTER TWO

GIVING VOICE TO HERITAGE TOURISTS: INDICATORS FOR A SUSTAINABLE HERITAGE EXPERIENCE AT PETRA, JORDAN

Tourism represents the largest form of temporary migration in the world and it has become one of the largest industries in the world (Goeldner & Ritchie, 2009). Today, the most universal and fastest growing sector of the tourism industry is visiting cultural and heritage resources (Timothy & Boyd, 2003, 2006). Heritage tourism began as a separate product category in the late 1970s when tourism marketers and tourism researchers realized that people traveled to gain a deeper understanding of the culture or heritage of a destination (McKercher & du Cros, 2010). The World Tourism Organization (UNWTO) defines heritage tourism as “an immersion in the natural history, human heritage, arts, philosophy and institutions of another region or country” (Timothy & Boyd, 2003, p. 1).

Heritage resources, which are the foundation of heritage tourism, play important roles in the tourism supply (Timothy & Boyd, 2003). However, it is rarely possible for tourists to experience heritage resources without causing some kind of impact to the quality of heritage values and/or other’s experience (C. M. Hall & McArthur, 1996). Because of the irreplaceability and non-renewability of these resources, they should be conserved and managed in proper ways to preserve their values (Comer, 2012; Timothy & Boyd, 2003). Heritage sites are often subject to the conflicting desires of preservation and tourism. Therefore, it is very important that heritage sites are well managed.

As tourism develops at heritage sites, serious damage may occur as a result of high tourist use, particularly at peak times. Tourists’ behavior and their numbers may gradually

destroy the resources, although what degree of damage is caused by tourists is actually unclear (Timothy & Boyd, 2003). The most prevalent tourist impacts at heritage sites are wear and tear, litter, graffiti and pollution (Garrod & Fyall, 2000; Timothy, 2011; Timothy & Boyd, 2003). Souvenir hunting is also one of the most pervasive challenges facing heritage conservationists and conservation legislation (Timothy & Boyd, 2003, 2006; Timothy, 2011).

While tourists' impact cannot be ignored, the need for heritage tourism to seriously consider both the resource (supply side) and visitor experience (demand side) has been argued by some scholars (McArthur & Hall, 1993). Traditionally, the development of heritage tourism was product-led (Edwards & Liurdes, 1996), and heritage resources were considered as the central element of the process (C. M. Hall & McArthur, 1993, 1996; Timothy & Boyd, 2003). According to Massara and Severino (2013) two major areas of research can be defined in the literature of heritage tourism; the first one product-centric, while the second is tourist-centric. Also, most of the literature has focused on the economic importance of heritage tourism, and preservation and interpretation of heritage resources (McIntosh, 1999). Understanding heritage tourists' experiences, needs, and motivations were somewhat ignored.

Recently, attention has been paid in the literature to the importance of the tourist in achieving the goals of sustainability of heritage tourism (Willson & McIntosh, 2007). When tourists have a satisfying experience, they support the philosophy of the site's management (C. M. Hall & McArthur, 1993, 1996), so the site becomes easier to manage. Both highly satisfied tourists and involved stakeholders are a key to long-term public

support for the protection of heritage areas in general and the funding of these sites as a social priority. Thus, both supply and demand sides should be considered in the process to achieve the sustainability of heritage tourism.

Sustainable heritage management aims to maximize tourists' appreciation and enjoyment of heritage places, and minimize their impacts (Glasson, Godfrey, & Goodey, 1995; McArthur & Hall, 1993, 1996). Thus, it is clear that there is a need to manage tourists and their experience at heritage sites. Over the last three decades, several frameworks have been developed for managing visitors at natural sites. The main focus of these frameworks was on visitor opportunities and experiences rather than finding specific capacity levels (Timothy & Boyd, 2003). These frameworks have been developed and widely applied to nature-based parks and protected areas, rather than cultural heritage sites. They include Limits of Acceptable Change (LAC) (Stankey et al., 1985), Visitor Impact Management (VIM) (Kuss et al., 1995), and Visitor Experience and Resource Protection (VERP) (National Park Service, 1997). All these frameworks share the same four core elements: (1) Determination of future/desired conditions of the park resources and visitor experience. These conditions should be defined as management objectives that characterize the degree of resource protection and the type of visitor experience to be provided; (2) Identification of indicators and standards of quality. Indicators are measurable and manageable variables that act as proxies for the desired resource and visitor experience conditions. Standards of quality define the minimum acceptable level of indicator variables; (3) Monitoring the indicator variables to determine if and where standards of quality have been violated; and (4) Development of management actions to maintain indicators within the designated

standards of quality. Management actions include a variety of practices, such as use limits, redistribution of use, protection of the site from impacts, educating visitors in an attempt to reduce impacts, and direct mitigation (e.g., picking up litter) (National Park Service, 1997).

Due to the importance of the tourists in sustainable heritage tourism, and because it is not effective or appropriate to manage heritage tourism resources in isolation from the people who are the owners of the heritage and those who come to experience it, this paper aims to apply the concept of indicators to heritage sites with reference to Petra Archaeological Park (Petra) in Jordan as a case study. This research tried to understand the tourist experience at the World Heritage Site of Petra and how that experience might be managed to promote the sustainability of heritage tourism. This paper presents information to help formulate empirical, science-based, stakeholder-informed indicators for the tourism experience at Petra. These data would assist in applying one of the management frameworks mentioned above to ensure a high quality tourism experience at Petra.

The Concept of Indicators

Contemporary management frameworks for managing visitors at natural parks and protected areas, such as Visitor Experience and Resource Protection (VERP) (National Park Service, 1997), rely on a foundation of formulating indicators and standards as empirical measures of management objectives or desired conditions. Indicators are defined as “specific, measurable physical, ecological, or social variables that reflect the overall condition of a zone. Resource indicators measure visitor impacts on the biological, physical, and/or cultural resources of a park; social indicators measure visitor impacts on

the visitor experience” (National Park Service, 1997, pp. 58–59). To be effective, indicators should have some characteristics. The main two characteristics are manageable and measurable. Manageable means that indicators should be responsive to management actions (R. E. Manning, 2007). Measurable means that indicators should be easily quantified and determined in objective terms (Lime et al., 2004). Additional characteristics for good indicators include: specific, objective, reliable, repeatable, related to visitor use, sensitive to visitor use, and significant in defining the quality of the visitor experiences (R. E. Manning, 2007, 2011; National Park Service, 1997).

Different approaches have been found in the literature to identify potential indicator variables. Many studies have used a qualitative approach to explore indicators by conducting semi-structured interviews with or asking open-ended questions of visitors and other stakeholders (Bullock & Lawson, 2007; Glaspell, Watson, Kneeshaw, & Pendergrast, 2003; Hallo, Manning, & Stokowski, 2009; Hallo & Manning, 2009a; Vande Camp, Johnson, & Manning, 2005; Watson, Glaspell, Christensen, Lachapelle, & Shanatien, 2007). For example, in a study about Off-Road Vehicle (ORV) use at Cape Cod National Seashore, the researchers used open-ended questions and semi-structured interviews to gather information that helped formulate ORV indicators (Hallo et al., 2009).

Other studies have used a quantitative approach. For example, a study conducted to estimate the social carrying capacity of Yosemite Valley, the scenic heart of Yosemite National Park, used close-ended questions to rate the seriousness of several problem issues (R. E. Manning, Valliere, Wang, Lawson, & Newman, 2002). The study findings were coded, analyzed, and reported using mathematical and statistical procedures. Importance-

Performance analysis has been used as an aid for formulating indicator variables (Farber & Hall, 2007; Hollenhorst, Olson, & Fortney, 1992; R. E. Manning et al., 2006; Pilcher, Newman, & Manning, 2009). In this, quantitative surveys are used first to ask visitors to rate the importance of potential indicators variables, the results are plotted along a vertical axis. Then, visitors are asked for the condition (i.e., performance) of each variable. Indicator may be then selected from those variables that are considered important but whose condition is lacking. However, qualitative approaches are often more valuable than quantitative ones for understanding the nature and significance of visitors' experiences (Glaspell et al., 2003), and for developing indicator variables (Hallo et al., 2009).

Petra Archaeological Park

Petra covers an area of 65,235 acres within Wadi Musa town. It is a World Heritage Site as designated by UNESCO in 1985, and it was selected in 2007 to be one of the New 7 Wonders of the World. Located in southwestern Jordan, Petra is the most important tourism attraction in the country. It is visited by tourists from all over the world. According to Jordan Ministry of Tourism and Antiquities (2013), the total number of visitors in 2013 was 609,044.

Petra encompasses extensive archaeological remains such as copper mines, temples, churches and other public buildings. The Outstanding Universal Value¹ of Petra lies in the sheer number of tomb and temple architecture, religions sites, and the water systems including channels, tunnels, dams, and cisterns that were used to control and

¹ Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole.

conserve rains. In addition, the traditional Nabataean rock-cut monuments (e.g., Al-Khasneh, the Urn Tomb, the Palace Tomb, the Corinthian Tomb, and the Deir ‘monastery’) represent a unique artistic achievement and an outstanding example of architecture of the first centuries BC to AD (World Heritage Center, n.d.)

In 2009, the Petra Development and Tourism Regional Authority (PDTRA) was established to control the whole region of Petra (186,565 acres) including Petra. The management of the archaeological site falls under the responsibility of the Petra Archaeological Park (PAP) which is a subordinate organization that reports to the PDTRA.

In response to the potential impact of growth in tourism and visitor numbers, the government of Jordan invited international institutions, on five occasions, to prepare management plans for Petra:

- *Master Plan for the Protection and Use of the Petra National Park* (National Park service, 1968).
- *Petra National Park Management Plan* (UNESCO, 1994).
- *Management Analysis and Recommendations for the Petra World Heritage Site* (US/ICOMOS, 1996).
- *Petra Archaeological Park Operating Plan* (Ministry of Tourism and Antiquities of Jordan & National Park Service, 2000).
- *A Strategic Master Plan for Petra Region* (ATC Consultants GmbH, 2010).

It should be mentioned here that there is little institutional memory of the procedure that was followed in development of these plans, especially in the first plan (Akrawi, 2000, 2012). While these management plans have helped as guiding documents for decision-

makers, only the US National Park Service's Petra Operating Plan was approved by the Ministry of Tourism and Antiquities (MoTA), though none were officially approved by the Prime Ministry nor implemented (Petra National Trust, n.d.). Although some plans included some participation of Jordanian counterparts, stakeholders were not involved in the identification of the values, major issues, and in the recommendations presented (Akrawi, 2000, 2012). Furthermore, these plans have followed the conventional approach in heritage management by focusing almost exclusively on the resource rather than the visitor experience.

Expanding visitation to Petra increasingly challenges the park managers charged with balancing their dual tasks of resource protection and high quality tourism provision. One of the main threats facing Petra today is carrying capacity and visitor management. According to Akrawi (2012) there is no system in place to help manage and monitor the visitors within the site at any given point in time. Worsening the situation is the absence of regulations or directional signs to trails and monuments, and visitors move uncontrolled throughout the site at their own risk.

Currently, a single entry/exit route is used to serve the park through Al-Siq. The management of the park is studying the possibility of using a two-point entry/exit route, that of Al-Siq and the Turkomania road, as well as introduction of a shuttle system (Akrawi, 2012). Using a two-point entry will encourage longer stays at Petra, and it will be easy for tourists to revisit the site.

The UNESCO Reactive Mission to Petra in December 2010 called on the park managers to "Develop and implement a public use plan, including the definition of visitor

management strategies...” (World Heritage Committee, 2011, p. 100). Unfortunately, even though the apparent need exists and countless examples of visitor management frameworks have been proposed in various planning documents, the adoption and full implementation of these frameworks has not been done in Petra. It should also be mentioned that carrying capacity research that has been conducted for Petra has focused on the resource and ignored the visitor experiences (Comer & Beli, 1996; Magablih & Al-Shorman, 2009).

With reference to Petra, this paper aims to both understand the visitor experience and how that experience might be managed to promote the sustainability of the site. It presents information to help formulate indicators for the tourism experience at Petra Archeological Park. These data would assist in applying one of carrying capacity frameworks to ensure resource sustainability and providing high quality experiences at Petra.

Methods

Semi-structured qualitative interviews were conducted with tourists at Petra. An interview guide was used that included a series of themes and lead-in questions, but sometimes additional questions were asked by the researcher for more clarification. Due to limited time and personal, a convenience sampling approach was used to select participants (Miles & Huberman, 1994), whereby tourists available and willing to participate were recruited. All interviews were conducted in the visitor center area. After the completion of their trips, tourists were asked to participate in the research, tourists who agreed to

participate were escorted to the shaded area in the visitor center area. All interviews were conducted in Arabic or English, and recorded using a digital recorder.

The interview guide questions were divided into three groups. First, a group of questions was asked to gather information to explore and understand the nature of the tourism experience in Petra. The second group of questions intended to help understand the variables that add to or detract from the tourist experience during the trip in Petra. The third group of questions was asked to understand tourists' attitudes toward current resource and visitor management conditions at the park.

Content analysis with an inductive coding approach was used to code the transcribed interview data. Inductive coding was adapted from methods initially described by Miles and Huberman (1994), Patton (2002), and Thomas (2006). In this approach the codes were developed from "the frequent, dominant, or significant themes inherent in raw data" without requiring any restraints to use a structured methodology (Thomas, 2006, p. 238). Similar codes were combined into main codes, and the main codes were given a general title. Although codes were developed inductively, the core set of questions were used as an organizing tool. All assigned codes were mutually exclusive. That is, each idea expressed in a respondent's reply to a certain question only belongs to one code. However, several codes were assigned to a single response. The frequencies of codes were calculated for each question.

Results

During the peak season of 2014 (March-May), twenty-nine interviews were conducted with Petra tourists. Recorded interviews were transcribed verbatim. Interviews

ranged from 8 to 20 minutes in length and averaged 12 minutes overall, and over 150 pages of transcribed text were produced from the interviews. To verify the accuracy, the transcripts have been reviewed by a second person while listening to the recorder and transcripts corrections made as necessary. Interviews conducted in Arabic were translated to English, and then this translation was reviewed by a translation specialist.

Several questions were asked to gather information and understand the tourists and their experience at Petra. First, participants were asked a question about the time they spent in Petra, and it was found that most tourists spent between three to five hours in the park (Table 2.1). Second, tourists were asked how far into the park they went, and how they decided how far they would go. The most frequently reported end destinations in the park, in decreasing order, were the Monastery (A’Deir), the Treasury, the High Place of Sacrifice, the Theatre, Qasr Al Bint, and the Royal Tombs (Figure 2.1 and Table 2.2). The most common factors that affect tourists’ decisions in how far they would go were, in decreasing order: physical or health ability, the tour guide, and the available time (Table 2.3).

Table 2.1. *Codes assigned for responses to the question of “How long did you spend in Petra Archaeological Park today?”*

Code	Frequency
1 to 3 hours	9
>3 to 5 hours	12
>5 to 7 hours	5
>7 to 9 hours	3

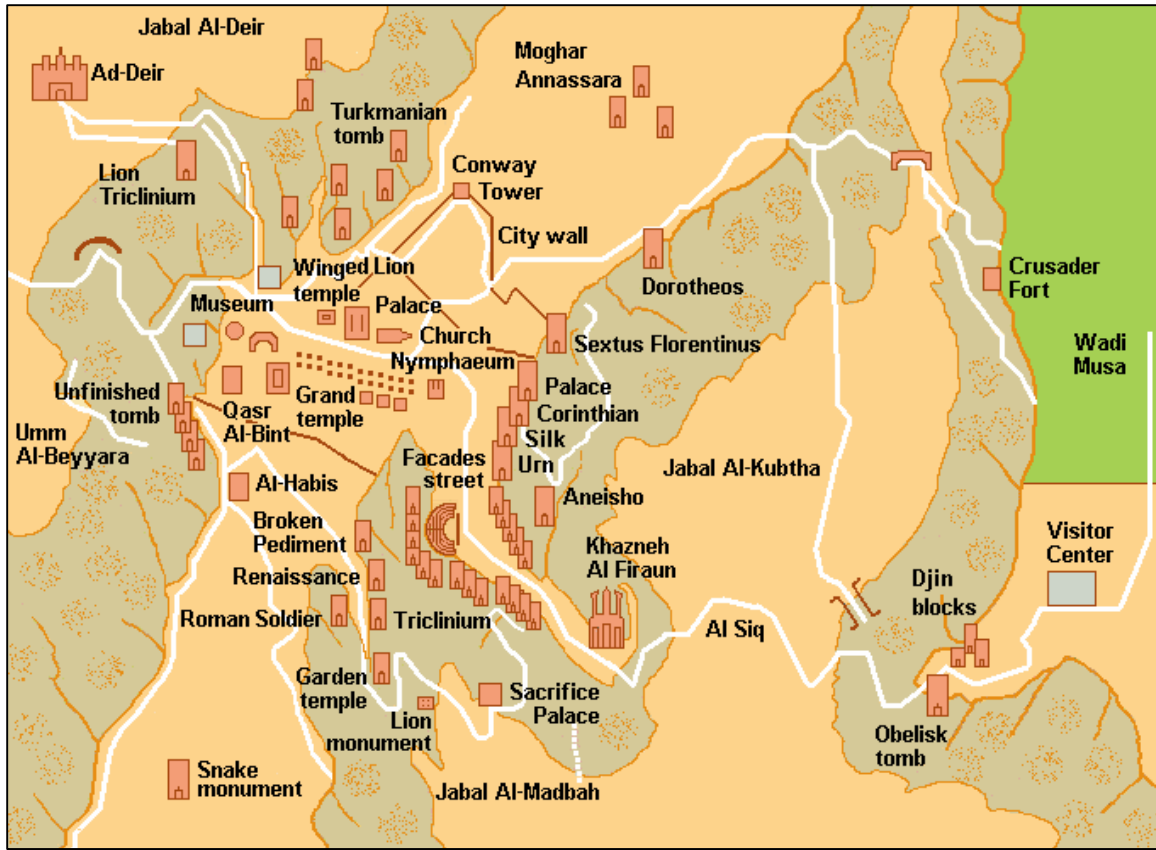


Figure 2.1. *Petra Map (Wikipedia, 2014)*

Table 2.2. *Codes assigned for responses to the question of “How far into the park did you go today?”*

Code	Frequency
Monastery	10
Treasury (Al-Khaznah)	7
High Place of Sacrifice	5
Theatre	4
Qasr Al Bint	4
Royal Tombs	4

Table 2.3. *Codes assigned for responses to the question “How did you decide how far into the park you would go?”*

Code	Frequency
Based on physical or health ability	11
Based on the tour guide	8
Based on the available time	7
Based on the interesting places	2
Based on people’s suggestions	2
Not interested in archaeological site very much	1
There is no good transportation	1
Go farthest into the park to experience it best and see everything	1
Based on a book guide	1
Based on the scheduled program of the tour	1

Some respondents described their expectations by paying tribute to or praising the site itself. For example, Respondent #11 said: “I expected something very nice, but I found something gorgeous, it is different. I knew Petra is an archaeological site, but I did not expect it to be great like this.” Respondent #4 replied by saying: “I expected to see something really spectacular....”

The third most frequently occurring response code for this question was related to natural heritage, which mention the color and geological formation of the rocks (Table 2.4). For example, Respondent #21 said: “...some buildings in the mountain with beautiful colors yellow and red, this is what I expected.”

Respondents’ expectations about their trip were based largely on the word-of-mouth, reading from literature and guide books, online information, and from multimedia and advertisements (Table 2.5). For example, when they were asked how they developed their expectations, Respondent #4 replied: “Mostly from my friends”, while Respondent

Table 2.4. Codes assigned for responses to the question “What did you expect your trip in Petra Archaeological Park to be like?”

Code	Frequency
Cultural heritage	
<i>Historical aspects</i>	10
<i>Archaeological remains/ruins</i>	8
<i>Tombs and temples</i>	4
<i>Sculptures/carvings</i>	4
<i>Structure/stonework</i>	1
<i>Architecture</i>	1
<i>Masterpiece</i>	1
<i>One of the New Seven Wonders</i>	1
Praise expressions	13
Natural heritage	
<i>Stones/Rocks</i>	3
<i>Colors/Geological formation</i>	2
Informative	1
No expectations	1
Lots of walking	1

#11 said: “From my wife, she visited it before....” Some respondents reported that they read about Petra before coming, for instance Respondent #17 said: “By reading some book...”, and Respondent #13 said: “From travel guides, mainly from travel guides.”

Some responses included more than one code, for example Respondent #9 said: “Mmm, I had read little bit about Petra before, online and in a guide book, and I also have friends who have been here before.” Respondent #21 also replied: “Television and internet, and I read some guides.” Two respondents mentioned Indiana Jones and the Last Crusade movie in their responses. For example, Respondent #3 stated: “We knew.. aaa.. you know, we heard something about Indiana Jones, filming that they filmed some....”

Table 2.5. Codes assigned for responses to the question “How did you know what to expect?”

Code	Frequency
Word-of-mouth	
<i>From family, friends, or relatives</i>	10
<i>Heard about it generally</i>	4
Reading	
<i>Reading about it generally</i>	9
<i>Reading travel guides</i>	4
Online information	11
Multimedia and advertisements	
<i>TV</i>	3
<i>Multimedia (Videos and pictures)</i>	3
<i>From Indiana Jones movie</i>	2
<i>Promotions</i>	2
From the hotel	1
From the trip organizer	1
No expectations	1

Most respondents reported that the trip was better than their expectations without referring to any specific reasons to this (Table. 2.6). Four respondents reported that their trip was worse because of management-related issues. For example, Respondent #6 linked it with some services provided at the park by saying: “...the services in the site, for example the horses and carriages are not organized very well, they push people to buy from them, and this is bad.” Respondent #8 mentioned different issues in his response, he said: “It was worse! I have no problem with the archaeological site, it represents the great achievements of the ancient people, but the management is bad, it is not effective, the site is not clean, you can smell the odor of animal waste everywhere, it is regrettable! There should be a paved trail for tourists, it is not easy to walk through the park.”

Table 2.6. Codes assigned for responses to the question “Was your trip better or worse than you expect?”

Code	Frequency
Better	
<i>Without reason</i>	15
<i>Because it was more than expected</i>	4
<i>Because of talking with local people</i>	1
<i>Because there were no expectations</i>	1
Worse	
<i>Because of bad/unorganized services</i>	1
<i>Because of poor management</i>	1
<i>Because site is not clean</i>	1
<i>Because it is not easy to walk</i>	1
As expected	3

The only repeat tourist had been in Petra three times, and the first time was in 2007. It was noticed from her response that the management situation has been improved over time; the cleanliness, the signs, and the staff are better.

Respondent #5: Each visit is better than the previous, for example, the entrance, the visitor center ... but I don’t know, for Jordanians, it is good to sell the ticket for one Dinar [Jordanian currency], but the carriages are very expensive, 20 Dinar!! If we are four persons, we need to take two carriages, for 40 Dinar. From a cleanliness point of view, it is better than before, the signs when we move through park are excellent, the guide today was very good and patient especially with children, and the staff are very polite, in general I feel the improvement in the site.

To understand the tourist experience and their movement patterns in the park, respondents were asked about the transportation methods they used (Walking or riding), and how that affected their experience. Because the available transportation methods do not cover the whole park, all tourists need to walk at some points to experience the park.

Results indicated that a third of the respondents rode a carriage or a horse/donkey. When respondents were asked about the reason behind choosing a certain type of transportation (or not choosing a certain method), the most frequently occurring response codes are those related to getting a better experience and more enjoyment, and those related to the health and physical ability (Table 2.7). For instance, Respondent #16 combined the two codes by saying: “I like to walk, I like to take my time to stop when I wanna stop, and for instance I’m in a good health so I can walk.” While Respondent #5 attributed the reason for taking a carriage to the park size, she said: “I cannot walk the whole distance, the park is very large.”

Table 2.7. Codes assigned for responses to the question “Why did you choose a certain transportation method?”

Code	Frequency
To get better a experience/more enjoyment	
<i>I enjoy walking</i>	10
<i>I walked because I want to see more</i>	5
<i>I walked because walking is a part of the challenge</i>	3
<i>I walked to get much better experience</i>	2
<i>I walked because I want to learn about the park</i>	2
<i>I walked because it is more leisurely</i>	1
<i>I rode a horse because I like horse riding</i>	1
Because of my health/physical ability	
<i>I walked because I can physically walk</i>	5
<i>I rode because I cannot physically walk</i>	4
<i>I did not ride because of special health reasons</i>	2
Because of the distance	
<i>I walked because the distance is not far and walkable</i>	2
<i>I rode because the distance is far</i>	3
I walked because high prices of riding	4
I did not ride a horse because I fear horse riding	1
I did not ride a carriage because it is not safe	1
I did not ride because animals were miserable	1

Most respondents stated that walking is the best way to get a good experience in the park (Table 2.8). They expressed that in different ways, for example, Respondent #8 said: “By walking you can see everything, you can enjoy everything, take pictures, you can meditate in the beauty and greatness of the site”, and Respondent #11 stated that: “The walking was very nice, you know when you walk you move slowly, and you see everything, but while you are riding a horse, you move faster, so you cannot enjoy the scene and the beauty of the site. When you walk you can enjoy the greatness of the site, and wonder how those people have made this great civilization.”

Table 2.8. Codes assigned for responses to the question “How did a certain transportation method affect the quality of your experience in the park?”

Code	Frequency
Getting better experience by walking, because	
<i>You can move slowly and see everything</i>	20
<i>It is more enjoyment</i>	14
<i>You can take more pictures</i>	6
<i>You can listen to your guide</i>	3
<i>You cannot go everywhere by riding</i>	1
Did not affect	2
Riding a carriage is a part of the experience	1
Riding is more comfortable	1
You cannot smell the animal waste odor by riding a carriage	1
I feel more young by walking	1

Several questions were asked to help understand and specifically identify potential indicators for the tourism experience at Petra. Respondents were asked to describe three things they enjoyed most about their trip in Petra (Table 2.9). Most respondents replied to this question by referring to specific attractions in the park. The Treasury was the most

frequently mentioned attraction, then the Theatre and the Siq. For example, Respondent #12 stated that: “The first time when we see the Treasury... The Siq and the last 15 meters in the Siq, and suddenly you see something amazing! We have traveled a lot, we know many things around the world, and this is among the things that you can’t forget.”

The second most frequently occurring codes were those related to the site’s cultural and natural heritage, Respondent #19 said: “The history... the history of the site is very interesting, the archaeological places, the caves.” Respondent #1 said: “The colors, and the rocks, I enjoyed that the best the color and some of the amazing things that nature did to the rock.” Respondent #9 also stated that: “...The Siq was really cool, I like that a lot... and the Treasury façade was amazing, and I really like to seeing the rock formations, it is different from any rock I have seen before.” Some respondents enjoyed talking with local people, for instance, when Respondent #10 was asked the question, he replied: “The Bedouin, because of the history they have, I liked talking with them....”

Respondents were next asked what three things they enjoyed least in their trip. The most frequently occurring codes, in decreasing order, were the persistence of vendors, difficulty of walking, and the odor of animal waste (Table 2.10). For example, Respondent #3 said: “Well, probably the people coming up trying to sell you a horse ride, jewelry...”, and Respondent #9 said: “... I don’t like when there’re so many people ask me to buy things or ask me to ride horses and things like that.. I prefer people to leave me alone a little more.. and it was very crowded at the Treasury.” The next most frequently occurring

Table 2.9. Codes assigned for responses to the question “What are the three things you enjoyed most about your time in Petra Archaeological Park today”

Code	Frequency
The park attractions	
<i>The Treasury</i>	9
<i>The Theatre</i>	6
<i>The Siq</i>	4
<i>The Monastery</i>	3
<i>The High Place of Sacrifice</i>	3
<i>The Royal Tombs</i>	2
<i>The Byzantine Church</i>	1
Cultural heritage	
<i>The archaeological and historical features</i>	6
<i>The site history</i>	5
<i>Carvings</i>	3
<i>Nabataean achievements</i>	3
<i>The architecture</i>	1
<i>The tombs</i>	1
Natural heritage	
<i>Natural geological formation</i>	8
<i>Natural scene</i>	5
<i>The rocks</i>	2
<i>The caves</i>	2
Local people	6
Recreation activities	
<i>Walking through the Siq</i>	2
<i>Climbing the mountains</i>	1
<i>Hiking</i>	1
Not crowded	3
Combination between cultural and nature	3
The tour guide	3
Calm atmosphere	1
kindness of the staff	1
The new visitor center	1
The weather	1
Going off the trail	1
Preservation of the park	1

codes were those related to the difficulty of walking due to different reasons. For example, Respondent #6 expressed this by saying: “The distance, it is very far, I mean I was enjoying the walk when I was going down through the Siq, but going up was not easy, I lost the sensation.” Respondent #13 did not disagree with that, he stated that: “It is exhausting to walk... it’s difficult to say, the way up when you come out of the Siq.. and the way back up to the visitor center here, it is quite exhausting.” Some respondents indicated that the difficulty of walking was due to the unpaved trails, for example, Respondent #3 said: “... I don’t think I dislike anything.. I can tell you from a walking point of view.. where the road is finished, it’s much easier on your feet than where there are stones and gravel.” Respondent #8 also complained of this issue by saying:

Interviewer: What are the three things you enjoyed least about your time in Petra Archaeological Park?

Respondent #8: The mismanagement of the site, I mean a unique and valuable site like Petra should be managed better than that.

Interviewer: What do you mean? Could you give me some examples?

Respondent #8: The paths, for example, why they do not make a wood path along the park? It is very hard to walk through the park on the rocks and sand!

Concerns related to the odor of animal waste were expressed by several respondents. One respondent said: “I am sensitive to the odor of animal waste. I know it is hard to control this issue, but this is the most thing [sic] that I hate in the park, especially in the Siq.” Respondent #8 replied to this question by saying that: “The animal odor! It is everywhere! We tried to enter one of the caves, the smell was disgusting there!”

Table 2.10. *Codes assigned for responses to the question “What are the three things you enjoyed least about your time in Petra Archaeological Park today”*

Code	Frequency
Persistence of vendors	13
Hard to walk/unpaved trails/far distance	11
Odor of animal waste	5
Ill-treatment of animals	5
Crowding	4
Nothing/I have enjoyed everything	4
The weather	3
Restrooms are not clean	2
Noise	1
Lack of shaded rest areas	1
Bumpy ride of the carriage	1
A lot of book shops	1
Lack of signs	1
Limited restrooms	1
Pay for paper in restrooms	1

Some respondents expressed their regret about the ill-treatment of the animal, in addition to the crowding issue in the park. Respondent #20 said: “The amount of tourist.. and the number one thing that we have enjoyed least is way the donkeys were treated, the horses seem to be treated quite well....” Respondent #9 stated that: “...It was hard to take pictures at the Treasury because there was so many people in front of it....”

When asked about the most important thing affecting the quality of their experience, respondents provided answers that were divided into two groups; things that positively affect the experience, and things that negatively affect the experience (Table 2.11). To a large extent, the responses were similar to those in the previous two questions. Most of the frequently occurring codes in previous questions emerged in the responses to

this question. The history of the site and the beauty and value of the site ranked highest in the list of things that positively affect the tourist experience. Difficulty in walking, the persistence of vendors, and the odor of animal waste are the most frequently occurring things that negatively affect the experience. Respondent #10 said: “It is very known ancient place, it is a part of history, and you feel like you are a lot of hundred years ago [sic]”, and Respondent #21 said: “The beauty of the site, it is a very unique site....”

Table 2.11. Codes assigned for responses to the question “What is the most important thing in affecting the quality of your experience today?”

Code	Frequency
Positively	
<i>The history of the site</i>	5
<i>Beauty and value of the site</i>	4
<i>Good weather</i>	3
<i>The tour guide</i>	3
<i>Preservation of the site</i>	3
<i>Local people</i>	2
<i>Not crowded</i>	2
<i>Cleanliness of the site</i>	1
<i>First time experience</i>	1
<i>Carvings</i>	1
<i>Natural landscape</i>	1
<i>Good signs</i>	1
<i>Multiple restrooms</i>	1
Negatively	
<i>Difficulty in walking</i>	2
<i>Persistence of vendors</i>	2
<i>Odor of animal waste</i>	2
<i>Need more signs</i>	2
<i>Bad weather</i>	1
<i>Expensive services</i>	1
<i>Lack of awareness</i>	1

Some respondents talked about the difficulty in walking especially the way back out of the park. For example Respondent #5 stated that: “As I said the returning back through the Siq was really hard, it is a long distance, and they should pave the area between the main gate and the beginning of the Siq.” Persistence of vendors and odors of animals waste have also emerged in the responses, one respondent said: “I don’t know if you can control how much people ask if you want to ride a horse or things like that, but that bother me little bit.” Another respondent said: “Negatively, as I told you the bad odors, a very important site like Petra, they should care more about it”

Respondents were asked four questions to understand their perspective toward the management of the park. First, respondents were asked about the impact of tourists on the archaeological resources and on the other tourists’ experiences (Table 2.12 and 2.13). Most respondents believe that tourists are responsible and appreciate the value and the importance of the park resources, they do not affect it negatively. This is what Respondent #5 expressed when she was asked the question: “No, most tourists are responsible, and they understand and appreciate the importance of the site, I do not think they have any negative impact.” Some respondents said that tourists do not affect park resources if they are managed. Respondent #18 expressed that by saying: “No, as long you keep them off from doing any damage, so it’s not a problem.” But Respondent #28 replied to the question: “I suppose if you get too many visitors.” He linked the issue with tourists number. Some answered the question by giving some forms of visitor impacts on the archaeological resources. For example, Respondent #11 said: “Some people might throw some litters on the ground, some of them might climb the rocks or write on them.”

Table 2.12. Codes assigned for responses to the question “Do you think that the type or number of visitors in Petra Archaeological Park is having negative effects on the archaeological resources in the park?”

Code	Frequency
No,	
<i>Because tourists are responsible and appreciate the park</i>	11
<i>Because they do not affect it (Without reason)</i>	9
<i>If they are managed</i>	2
<i>Because there is no contact with the archaeological resources</i>	1
Yes,	
<i>If they are a lot</i>	5
<i>By littering</i>	2
<i>Because they damage the resources</i>	2
<i>By climbing on the resources</i>	1
Do not know	3
Natural factors affect more than tourists	1
Local people affect site negatively	1

Table 2.13. Codes assigned for responses to the question “Do you think that the type or number of visitors in Petra Archaeological Park is having negative effects on the quality of visitor experience?”

Code	Frequency
No,	
<i>Without reason</i>	13
<i>Because it is not crowded</i>	3
<i>Because tourists are polite</i>	3
<i>Because tourists should choose the appropriate time to avoid crowding</i>	2
<i>Because tourists are well managed</i>	1
Yes,	
<i>Because I cannot enjoy the view/place</i>	3
<i>Because it is crowded</i>	2
<i>Because I cannot take pictures</i>	2
<i>Because it will be hard to walk</i>	1
<i>Because it is hard to hear</i>	1
<i>By littering</i>	1
<i>By damaging park resources</i>	1

Most respondents also believe that the number and type of tourists do not have any impact on the quality of their experience. Some respondents linked the impact with crowding. For example, Respondent #7 said: “No, I didn’t see overcrowding, and they’re all very polite”, and Respondent #27 said: “If it’s very crowded, our experience wouldn’t happen as good [sic].”

Second, respondents were asked about the overall management of the park. Several codes emerged in this question (Table 2.14). Most respondents expressed that the park is clean and it is managed in a good manner. Many respondents merely expressed their praise of the park management. But, some issues mentioned in previous questions emerged again in the responses of this question. For example, when Respondent #8 was asked the question, he replied: “It is not organized! There should be a pathway in the park to facilitate and smooth the movement through the park, it is not easy to walk on the unpaved areas.” Respondent #13 has also mentioned that: “It’s good, I think it’s good, we like it, it’s clean, ways [sic] are OK, sometimes it little bit difficult to walk [on stones and sand], but they are OK.

The issues of the vendors also emerged in the responses of this question. Respondent #4 suggested that: “I think they need to do something about the people selling stuff for dollars. I think that, I think there should be an area where they want to sell, and then no more, they should not be down [in the park].”

Third, respondents were asked another question about management actions that added or detracted from their experience in the park. Most respondents expressed that there is nothing about the management that added to or detracted from their experience (Table

2.15). However, some codes that emerged in the previous questions emerged in this question too, such as the difficulty of walking and the vendors.

Table 2.14. *Codes assigned for responses to the question “What do you think of the overall way Petra Archaeological Park is managed?”*

Code	Frequency
Praise expressions	17
Site is clean	7
Need pathways to facilitate tourists’ movements	3
Helpful staff	3
Site is well preserved	2
They make it easy to go through the park	2
Vendors should be managed	2
Needs improvements	2
Carriages should be managed	2
Services are good quality	2
Restrooms should be better	2
Signs are old and destroyed	1
No complaints	1
Expensive	1
Signs are good	1

Finally, respondents were asked if they support the idea of having a limit on the number of tourists for Petra. The responses to this question were divided into two groups (Table 2.16). Many respondents support the idea but only if the park is crowded. For example, Respondent #5 said: “I think if there are a lot of tourists, we should have a limit.” Respondent #24 commented: “If it is really really crowded, so you can’t walk freely, I would say yes.” Some respondents considered having a limit on tourists numbers as important to protect the site and tourists experiences. One respondent replied when he was

Table 2.15. *Codes assigned for responses to the question “Was there anything about the management of Petra Archaeological Park that added to or detracted from your visit?”*

Code	Frequency
No, without reason	13
Helpful staff	2
Difficulty in walking	2
No, because nobody interfering with us	1
No, because officers are around	1
Need more water stations	1
Need more chairs	1
Need more signs	1
Vendors need to be controlled	1
Site is not clean	1
Should do something about the odor of animal waste	1
Tourists freedom	1
Ticket is expensive	1
Site is clean	1
Park is well running	1
The fountain	1
The camels	1
No, because we did not experience any problem	1

was asked the question: “Yes, for protection of the site, and for people to enjoy it.” While most respondents supported the idea, some of them do not support it because of different reasons. The most frequently occurring reason in the responses is that the park is large enough to accommodate a lot of people. For example, Respondent #10 disagreed with the idea of a limit by saying: “No, let people come and enjoy the place! I think the area is large enough to hold a lot of people.”

Table 2.16. Codes assigned for responses to the question “Do you think having a limit on the number of visitor is a good idea for Petra Archaeological Park?”

Code	Frequency
Yes,	
<i>If it is crowded</i>	8
<i>To get better experience</i>	7
<i>To protect the site</i>	5
<i>To let people move easily</i>	1
<i>Because there is a capacity</i>	1
<i>To manage the flows</i>	1
No,	
<i>Because the park can accommodate a lot of people</i>	5
<i>But it should be managed</i>	2
<i>Because high number of tourists indicates the good reputation of the site</i>	2
<i>To revive the economy</i>	1
<i>Because that will deprive some people of seeing it</i>	1
<i>Because it is one of the seven wonders of the world</i>	1
<i>Because I like to see people from different countries</i>	1
<i>Because it is not crowded</i>	1

Discussion

This study began with a general understanding of the tourists and their experience patterns at Petra. Findings from this study provided some insights about some issues related to the tourism experience at Petra. Generally, it is clear from the tourists who participated in the study that the park is managed well; facilities are clean and tidy, sufficient numbers and clean restrooms are provided, signs are in a good quality, staff are receptive, friendly, and helpful, and services provided are good.

Results showed that most of tourists spend sufficient time to finish the main trail at the park (2-3 hours) which starts from the visitor center and ends at Qasr Al-Bint, and it

includes visiting the key attractions and monuments inside the park. Tour guides have a considerable influence on the length of stay of tourists at the park. Tourists who participated in this study have confirmed what has been mentioned in tourism literature about the importance of the tour guide in tourism (Cohen & Ifergan, 2002; Pizam & Reichel, 1996), and how their guides were an essential attribute in making the trips more informative and enjoyable. Tour guides can transform tourists' visit from mere tours into rich experiences through their knowledge and understanding of the site and its culture (Ap & Wong, 2001).

It was expected that cultural heritage features, such as the historical and archaeological remains, the architecture, and carvings, play a central role in the tourists' overall experience at Petra. Results of this study support the prominence of cultural heritage features in the tourists experiences at Petra. However, experiences are centered on the aesthetic appeal of the main attractions in the park, in particular the Treasury. For several tourists interviewed, the first moment of seeing the Treasury after finishing Al-Siq was a key element to form their experience. This supports the notion of Urry's (2002) 'Tourist Gaze' which suggests that tourism experiences in general are visual in nature, and tourists travel to places that are visually striking. The results also confirmed the notion of 'Tourist Gaze' when the respondents mentioned the importance of the natural scene and the colored formation of Petra rocks. Willson and McIntosh (2007) also found that colors of heritage buildings in Hawake's Bay play an important role in forming a unique tourism experience. Also, the combination of cultural and natural features was mentioned by several tourists. The rock-cut and carved monuments that can be reached by through the

natural cleft (Al-Siq) represents a masterpiece of human-nature creative genius, which supports the Universal Outstanding Value of Petra as a World Heritage Site (World Heritage Center, n.d.), and criterion (i) for World Heritage selection.

Moreover, Urry (2002) introduced a category of tourist experience, called “romantic gaze”, in which solitude, privacy, and a personal semi-spiritual relationship with the site are appreciated. In this case, tourists seek to enjoy the site privately or at least only with “significant others” (Urry, 2002, p. 150). Indeed, crowding and related issues such as solitude, noise, and a desire for a calm atmosphere, are considered as significant issues affecting the quality of tourists’ experience at Petra. In this respect, the findings of the present study are similar to other studies conducted in several recreation and tourism settings (Beeco, Hallo, Baldwin, & McGuire, 2011; Hallo et al., 2009; Jacobsen, 2004; R. E. Manning, Lime, & McMonagle, 1995; R. E. Manning & Lime, 1996; Naoi, Airey, Iijima, & Niininen, 2006; Voase, 2007). According to the results, tourists overwhelmingly agree with the propositions that if the park is crowded then the management should set a limit on the number of tourists who visit the park to improve the tourism experience and to protect the resources. But the question that should be asked here is how much is too much? In other words, what is the maximum number of tourists that should be allowed to enter the park without damaging the resources and the tourism experiences? These questions can be answered by identifying quantitative standards for the number of tourists. Normative theory and related empirical techniques have special application in understanding and measuring crowding (R. E. Manning, 2007).

While the visual appearance of the attractions enhances the tourist experience in the park, it has been agreed in the literature that the tourism experience is multisensory, and it involves more than just the visual (Dann & Jacobsen, 2002, 2003; Pan & Ryan, 2009). From this perspective, the odor of animal waste is one of the factors that negatively affect the tourist experience at Petra. Specifically, the bad odor prevents tourists from experiencing temples and caves from the inside and they pushed some tourists to walk fast to get away from the odor. In the past, one of Petra local communities, called Bdul tribe, used to live in Petra's caves and monuments. Although they were moved from the archaeological site as recommended by 1968 United States National Park Service Plan (National Park service, 1968), some of them sell donkey rides for tourists and still use these caves to keep their livestock, making these caves unclean and unpleasant for tourists to enjoy.

Tourism is one of the main sources of income to the local communities in Petra. In addition to working in different tourism amenities in the town, many people work inside the park as souvenir sellers, horse guides, and carriage drivers. However, many tourists in this study reported that they were annoyed because of persistently being asked by vendors to buy different products and services. Harassment by vendors occurs “when tourist feels harassed because of persistently being asked to visit shops or pestered to make a purchase” (Kozak, 2007, p. 386). It is a prevalent phenomenon in different tourist destinations in the world, but it is not widely studied in the tourism literature (de Albuquerque & McElroy, 2001; Kozak, 2007; McElroy, Tarlow, & Carlisle, 2007). Kozak (2007) found that persistence of vendors may have a negative effect on the level of tourists overall

satisfaction. In this context, cultural differences should be taken in considerations. Considering that Turkey is a country with an eastern culture similar to Jordan, Kozak (2007) mentioned that Turkish service providers see nothing wrong with calling tourists to encourage them to buy a product or use a service, they consider that as offering help to tourists. Several indirect and direct management measures can be suggested to limit this phenomenon in the park. First, vendors should be educated about the negative effects of this phenomenon on the tourist experience and satisfaction, and they also can be instructed to give the tourists freedom on what they want to buy or which service they want to use without persisting. Second, legal or policy actions may be taken by setting regulations and penalties to prevent unpleasant interaction with vendors. Finally, the management can deploy some wardens insensitive areas, like the Treasury, that frequently suffer from negative vendors interactions.

Although tourists in this study indicated that they enjoy different recreation activities such as hiking and climbing, it was found that physical ability is one of the main factors affecting tourists' experiences and their decisions regarding how far they would go and what transportation they would use to move through the park. Accordingly, this issue can be discussed from two interrelated dimensions; the health ability of tourists to walk through the park, and the accessibility of the attractions. This is consistent with Crawford and Godbey's (1987) intrapersonal and structural leisure constraints. According to Jackson (2000) leisure constraints are factors that influence the tourists' preferences, participation and enjoyment in leisure. These findings do not contradict the tourism literature which suggest that there are some external and internal barriers for tourists to participate and

enjoy tourism in general and heritage tourism particularly (Knudson, Cable, & Beck, 1995; Timothy & Boyd, 2003; Turco, Stumbo, & Garnarcz, 1998). To make movement easier for tourists, the park management should test the suitability of using electric cars in the park, and if successful, dispense with horses and carriages to transport tourist through Al-Siq. Electric cars may be environmentally friendly, not harmful to the archaeological resources, and more comfortable for the tourists. Also, installing boardwalks through the park might be suggested to facilitate tourists' movement. Boardwalks have been used in different recreation and tourism settings around the world, and it is compatible with the resources.

This study has several other implications for Petra management. First, some management implications can be derived from the importance of the tour guide in managing tourism in the park. Specifically, the park management should work with the tour guides to improve environmentally responsible behavior among tourists by explaining to the tourists the importance of the site values and how to protect them, keeping tourists on the designated trails and paths, ensuring that tourists do not throw or leave trash behind or destroy the archaeological resources, and reporting any illegal activities in the park. Second, it was recognized from the findings that Petra provides the tourists a different experience that consist of a unique combination between cultural and natural heritage features. Therefore, the park management should consider this kind of combination in marketing strategies when promoting the site. Third, the understanding that crowding and related issues are an important factor in the tourism experience in Petra suggests that the park management should manage and control tourist numbers and determine the carrying capacity of the park. A fourth implication suggested is that the park management needs to

set some regulations and rules to control the vendors inside the park. Finally, the park management should provide safer and better transportation methods to facilitate the movement of tourists through the park.

Conclusion

A primary objective of Petra is to protect the cultural and natural resources, so creating a quality environment for tourists to experience the park is a challenge for the managers. The contemporary management frameworks used to manage parks and protected areas, such as Visitor Experience and Resource Protection (VERP) (National Park Service, 1997) rely on formulation of indicators and standards of quality to guide management of tourism/recreation experiences. This study adapted and applied qualitative research methods to understand the tourist experience at Petra to help formulate indicators for that experience.

Findings from this research suggest that cultural and natural scenic value, crowding, attraction accessibility, vendor persistence, and odor of animals waste are potential indicators for the tourism experience at Petra. Variables that are manageable, measurable, reliable, related and sensitive to tourist use, and significant in defining the quality of tourism experience often make the best indicators (R. E. Manning, 2007, 2011; National Park Service, 1997).

Indicators provide a theoretically-based, management-focused construct that define the essential qualities of the tourism experience at Petra. Indicators listed above can be addressed by the park management to enhance the tourism experience. Although, the findings of this study suggest important indicators for the tourist experience at Petra, more

research is needed to identify the range of the minimum acceptable conditions for each indicator. Indicators for the tourism experience at Petra found in this paper provide an empirical and defensible basis for this necessary next step.

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CHAPTER THREE

CROWDING STANDARDS AT PETRA ARCHAEOLOGICAL PARK: A COMPARATIVE STUDY OF MCKERCHER'S FIVE TYPES OF HERITAGE TOURISTS

Heritage tourism emerged as a distinct, popular form of tourism in the late 1970 when it was realized that people travel to get a deep understanding of heritage sites (Tighe, 1986). According to the World Tourism Organization (UNWTO) 2006 estimates, heritage tourism is a part of 40% of all international trips, and that demand is still growing (Doganer, 2013; McKercher, 2002; Timothy & Boyd, 2003).

The economic benefits that heritage sites bring to a tourism destination is through increasing visitation and extensions of stay (du Cros, 2008). As tourism develops in heritage sites, serious damage may occur as a result of high tourist use, particularly at peak times. Wall (1989, p. 10) believes that the mere presence of tourists at heritage sites "is likely to result in the modification of those environments." Thus, tourists make the sites less attractive for themselves. It is not only the resources that may be affected, but also the tourist experience and enjoyment. Expanding visitation to heritage sites increasingly challenges the tourism managers, planners, and marketers to achieve the goals of sustainable heritage tourism, which are maximizing tourists' appreciation and enjoyment, and minimizing their impacts (Glasson et al., 1995; McArthur & Hall, 1993, 1996).

In the conventional approach, tourists to heritage sites were ignored and excluded from managing heritage tourism sites, and heritage resources were the main focus (C. M. Hall & McArthur, 1993, 1996; Timothy & Boyd, 2003). Recently, the global trends of

heritage tourism are moving forward from product-led development of heritage sites that underlines exhibits and education to a more visitor-oriented development approach that underlines consumer preferences and quality of personal experience (Apostolakis & Jaffry, 2005). To increase the positive behavioral intentions of tourists, priorities should be given to providing high quality, satisfying experience to them (Lee, Petrick, & Crompton, 2007). A question might be asked here: do all tourists in heritage attractions seek to gain the same level of experience? McKercher (2002) noted that not all heritage tourists represent the ideal 'deep heritage' tourist; tourists have varying abilities to engage in heritage sites depending on different factors, and some of them are more highly motivated to participate in heritage tourism than others.

Crowding is one of the most common issues in heritage tourism management and has received extensive attention in outdoor recreation management (Vaske & Shelby, 2008). It has a negative impact on both heritage resources and the tourist experience, especially during peak seasons. Crowding is a subjective evaluation of the number of encounters (Vaske, Donnelly, & Shelby, 1993; Vaske, Shelby, Graefe, & Heberlein, 1986). It is often linked with the concept of carrying capacity that can be defined as the amount and type of use that can be accommodated at a site without unacceptability affecting the resources and tourists' experience (Budruk & Manning, 2002; Manning, 1999). Given that heritage tourists are not homogeneous, and crowding is a subjective evaluation, another question might be asked: do all tourists have the same standards for crowding?

Several frameworks have been developed for measuring and managing carrying capacity and crowding issues in parks and related areas. The main focus of these

frameworks is maintaining visitor opportunities and experience quality rather than finding specific capacity levels (Timothy & Boyd, 2003). These frameworks have been developed and widely applied to nature-based parks, rather than cultural heritage sites. They include Limits of Acceptable Change (LAC) (Stankey et al., 1985), Visitor Impact Management (VIM) (Kuss et al., 1995), and Visitor Experience and Resource Protection (VERP) (National Park Service, 1997). These frameworks provide a rational, structured process for conducting carrying capacity analysis and visitor management, and they share the same core elements which are: (1) Determination of future/desired conditions of park resources and visitor experiences. These conditions should be defined as management objectives that reflect the degree of resource protection and the type of visitor experience to be provided; (2) Identification of indicators and standards. Indicators are measurable and manageable variables that act as proxies for the future/desired resource and visitor experience conditions. Standards define the minimum acceptable level of indicator variables; (3) Monitoring the indicator variables to determine if and where standards have been violated; (4) Development of management actions to maintain indicators within the designated standards. Management actions include a variety of practices, such as use limits, redistribution of use, protection of the site from impacts, educating visitors in an attempt to reduce impacts, and direct mitigation (e.g., picking up litter) (National Park Service, 1997).

Expanding visitation to Petra Archaeological Park (Petra) in Jordan increasingly challenges the park managers charged with balancing their dual tasks of resource protection and high quality tourism provision. Crowding problems are considered one of main issues

affecting both the park's resources and tourists' experiences (Akrawi, 2012; Magablih & Al-Shorman, 2009). This paper aims to understand the tourists' experience at Petra and how that experience might be managed to promote the sustainability of heritage tourism. Specifically, normative theory is applied to gather information to help formulate empirical, science-based, tourists-informed standards for crowding at Petra. Normative theory suggests that tourists may share standards for appropriate resource and experiential conditions. However, heritage tourists are quite heterogeneous, and they can be differentiated by their motivations and experience that they seek (Marcotte & Bourdeau, 2006; McKercher, 2002; McKercher & du Cros, 2003; Nuryanti, 1996; Orbaşlı & Woodward, 2009; Timothy & Boyd, 2003). In light of this, the present study will also explore the influence of motivation to visit cultural heritage sites and the depth of experience on tourists' crowding standards. A cultural tourism typology model suggested by McKercher (2002) will be used to segment tourists into different types according to their motivations to visit cultural heritage sites and their depth of experience. Because of the existing confusion and overlap in the literature about the terms heritage and culture in relationship to tourism, this article will use the term heritage tourism as an umbrella to indicate both these terms.

The Concept of Standards

A standard may be described as “the minimum acceptable condition for each indicator variable. A standard does not define an intolerable condition. It is not a condition that managers should strive to achieve, unless intolerable conditions already exist” (National Park Service, 1997, p. 59). Standards are criteria used to evaluate environmental,

social, and/or managerial conditions. Management goals and objectives are reflected by determining the appropriate indicators, and standards are quantifiable value judgments reflecting what management is attempting to achieve. Based on previous work (Manning, 2007, 2011; National Park Service, 1997; Stankey et al., 1985; Vaske, Whittaker, Shelby, & Manfredo, 2002; Whittaker & Shelby, 1992), standards should be characterized by the following to be effective:

- Quantifiable: since indicators are quantifiable, standards should express the minimum acceptable condition for each indicator in a clear quantitative way. For example, a good standard might specify that visitors should be able to see and enjoy a historical statue with “less than fifteen other people present”, but specifying that there should only be “few other people present” is not a good standard because it does not specify the minimum acceptable condition in a clear-cut way.
- Time- or space-bounded: standards should not be expressed only in quantitative manner, but also they should be linked to a time period and a defined space. This means, they should determine how much of an indicator is acceptable, and how often such indicator can occur.
- Impact-oriented: standards should focus on the acceptable impact level, rather than on the management action used to maintain impacts from exceeding standards. “Ten groups visiting the site per day” is not a good standard; because it refers to the use limits rather than the acceptable impact. A better standard is “Less than five encounters per day”, since encounters are a better representation of crowding impacts.
- Attainable: standards need to reflect conditions that are realistically attainable.

Standards allow managers to be proactive and establish priorities for management actions (Vaske et al., 2002). By determining the desired environmental, social, and managerial conditions by formulating standards, managers can pay attention to when impacts, whether physical or social, are approaching or exceeding the defined levels, rather than reacting to the problems after they occur (Whittaker & Shelby, 1992).

Standards can be derived from different sources of information, such as scientific literature, expert judgments, scientific research, and public opinion, especially that derived from visitors (Manning, 1999; Manning, Valliere, & Wang, 1999; National Park Service, 1997). Research on visitor-based standards has “special appeal” because it involves visitors who are affected by the management decisions (Manning, 1999, p. 328; Manning et al., 1999, p. 98). Research has depended heavily on use of normative theory to help formulate visitor-based standards.

Normative Theory

A large body of research indicates that normative theory is a reliable way to develop standards and evaluate different social, environmental, and/or managerial conditions at parks and related areas. In spite of the extensive use the term norm in the discipline of sociology and social sciences in general, there is no consensus on the definition of the concept (Cialdini, Kallgren, & Reno, 1991). Generally, norms refer to what is considered normal or accepted within a social group (Manning, 2007, 2011), they represent standards and guidelines that specify how people are expected to behave under particular conditions (Balake & Davis, 1964; Calhoun, Light, & Keller, 1997; Michener & DeLamater, 1999). Cialdini et al. (1991) differentiated between descriptive norms and injunctive norms. They

refer to descriptive norms as those that characterize what most people in a given social group are doing, and injunctive norms refers to beliefs about what most people should or ought to do (Cialdini et al., 1991). Norms are also divided into social norms, which are “standards shared by the members of a social group” (Vaske et al., 1986, p. 139), and personal norm; which are an individual’s own standards acquired from social norms (Schwartz, 1977).

Norms are typically associated with the concept of sanctions-rewards for appropriate behavior or punishment for inappropriate behavior (Heywood, 2002; Vaske & Whittaker, 2004). Some sanctions can be formal, such as those externally imposed by agents that identify specific punishments and penalties for individuals who violate formal rules. Some sanctions may also be informal, such as those imposed by other persons (Brinkerhoff, Ortega, White, & Weitz, 2011; Heywood, 2002; Heywood & Aas, 1999; Manning, 2007; Vaske & Whittaker, 2004), or internal which is “self-sanction by one’s self” (Heywood, 2002, p. 272). When norms are important and widely shared by society members they become administrative rules and regulations with formal sanctions, while informal sanctions are used to support acceptable behavior or conditions with less widely-shared or newly emerged norms (Vaske & Whittaker, 2004).

In social psychology, norms are measured and applied through three paradigms: norms focus and activation models, theory of reasoned action (TRA), and structural characteristics models (Vaske & Whittaker, 2004). Norm focus theory is based on the idea that norms can only affect behavior when they are noticeable or in focus (Cialdini et al., 1991; Cialdini, Reno, & Kallgren, 1990). Norm activation model suggests that an

individual's behavior is affected and driven by norms only when they are activated (Schwartz, 1968, 1973, 1977). Activation of norms occurs when individuals are aware of adverse consequences of their behavior to others and when they ascribe responsibility for these consequences (Schwartz, 1977). Theory of Reasoned Action (TRA) is used to understand the relationships between attitudes, intentions, and behaviors; it suggests that a behavior is motivated by intentions which are created by a person's attitude and subjective norms (Ajzen & Fishbein, 1980).

Structural characteristics models, which are widely used in formulation of standards in parks and related areas, aim to understand the characteristics of social norms by using the Return Potential Model (RPM) (J. Jackson, 1965). The RPM measures the relationship between behavior and approval in a social group; it "represents a definition of norm in terms of the distribution of potential approval and disapproval by Others for various alternatives of Actor's behavior along one continuum under specified conditions, that is, in a given defined situation" (J. Jackson, 1966, p. 36). The RPM (Figure 3.1) includes two main components; the behavior dimension (x-axis) that represents a number of possible behaviors of conditions of an indicator in a particular situation, and the evaluation dimension (y-axis) (e.g., acceptability). The return potential curve, also frequently termed a social norm curve, is plotted to describe group members' feelings about a specific behavior dimension in a specific situation. Attitudinal ratings by individual group members are averaged and serve as the basis for the curve. Several features of the curve can be quantified to measure and describe different characteristics of norms (J. Jackson, 1965, 1966):

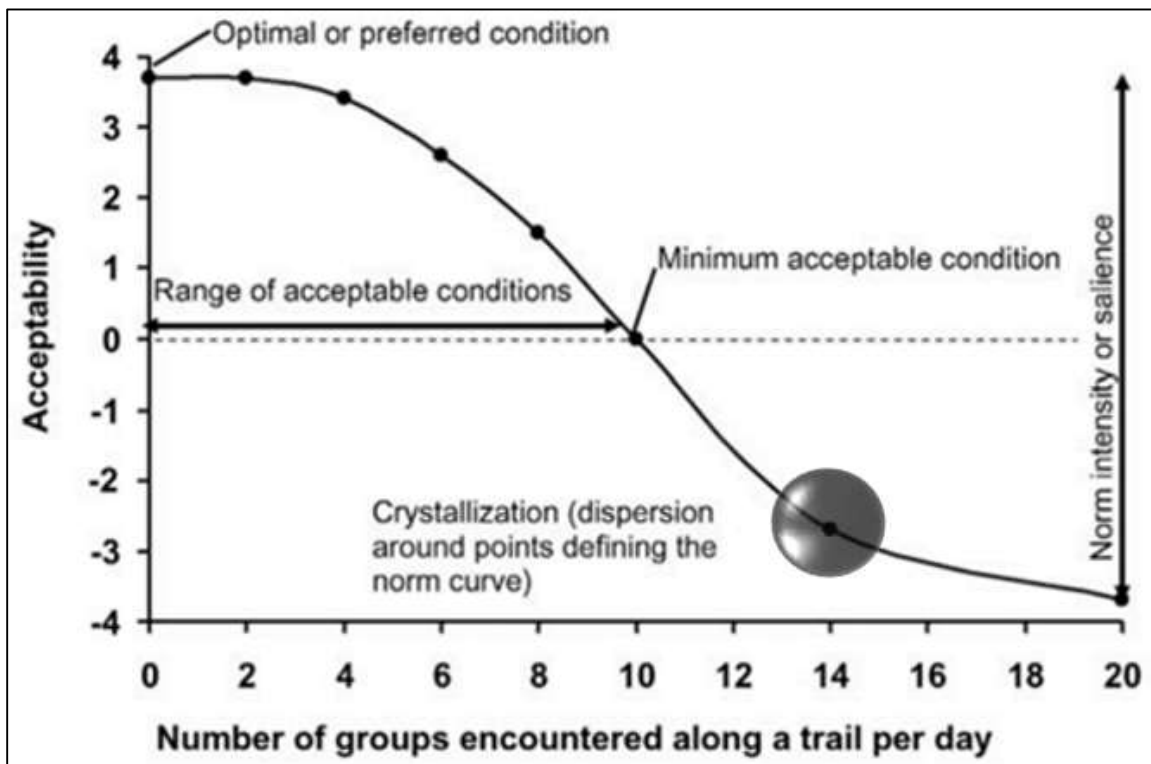


Figure 3.1. *Hypothetical social norm curve* (adapted from Manning, 2007, p. 43)

- *Range of acceptable conditions* is represented by all behavioral conditions that members of a group believe would be acceptable. It includes all behavior levels above the neutral line. In Figure 3.1, the range extends from 0 to 10 groups.
- *Intensity of a norm* is the degree that or how strongly, a group feels about the importance of a potential indicator in a specific situation. It is suggested by the distance of the norm curve above and below the neutral line of the evaluation scale. Jackson (1966) mentioned that intensity could also be used to measure the importance of different norms within the group; so the greater this distance, the more strongly respondents feel about the indicators being measured.

- *Optimal or preferred condition* is the highest point on the curve, which has the greatest acceptability. It represents the ideal condition in the setting. In Figure 3.1, the optimal or preferred condition is 0 groups encountered.
- *Minimum acceptable condition* is the point at which the norm curve crosses the neutral point of the evaluation scale, it represents the minimum acceptable condition of the indicator being measure. In Figure 3.1 the minimum acceptable condition is 10 groups encountered.
- *Crystallization of a norm* is the amount of consensus about a norm. Crystallization of norm is measured by calculating the variation of points that describe the social norm curve. The more variation, the less crystalized the norm.

A new method to understand the amount of consensus about a norm is the Potential for Conflict Index (PCI_2) (Manfredo, Vaske, & Teel, 2003). PCI_2 ranges from 0 to 1. Whenever the responses of the evaluation are equally divided between the acceptability scale, 50% very acceptable and 50% very unacceptable, this means less agreement on the norm evaluation, more conflict, and the least amount of consensus occur ($PCI_2=1$). Complete consensus and agreement on the norm evaluation lead to no potential for conflict ($PCI_2=0$). PCI_2 can be displayed on the social norm curve as bubbles. The size of the bubble indicates the amount of conflict or disagreement. The smaller the bubble, the more consensus and less potential conflicts about the norm evaluation.

As mentioned before, structural characteristics models are helpful as an approach to set standards for parks and related areas. Visitors to parks and related areas may share some norms for different resource and experiential conditions. These norms can be studied

by using the return potential model by asking visitors to evaluate different park conditions. Then, a social norm curve can be drawn in a plot of the mean acceptability ratings (x-axis) against the range of condition evaluated (y-axis).

Two approaches have been used for measuring normative standards in parks and related areas; a traditional narrative and numerical approach (Shelby & Heberlein, 1986), and the visual approach (Manning, Lime, Freimund, & Pitr, 1996). Both approaches rely on asking visitors to evaluate the acceptability of a range of condition for an indicator, but the way of presenting these conditions in a questionnaire differs. The narrative and numerical approach uses a description of conditions, while in the visual approach computer-manipulated photographs are used to portray the conditions. Both measurement approaches are valid, but in some specific situations some techniques can be more suitable (Manning, 1999). For example, in crowding-related research, visual approach can be more appropriate when the use levels at the site are relatively high and complex (Manning & Krymkowski, 2010; Manning, 1999).

The appropriate evaluative dimension is one issue in these measurements approaches. Different evaluative dimensions have been used to rate a range of site conditions (Manning, 2007, 2011). Acceptability, which is a commonly used response scale, focuses on understanding the acceptable environmental, social, and/or managerial park conditions; preference aims to understand what conditions that visitors prefer absent any other considerations, displacement aims to determine the point that visitors would no longer visit the site; and management action focuses on understanding the conditions that

visitors think managers should maintain (Manning & Krymkowski, 2010; Manning, 2007, 2011).

The normative approach described above has been widely applied to help support formulation of standards for indicators, primarily in nature-based parks and protected areas (Manning, 2007, 2011). In these studies, survey respondents are typically asked to rate a range of photos illustrating different environmental, social and/or managerial park conditions. Social norm curves are then constructed from the resulting data to derive potential standards. However, far less attention has been given to heritage sites, but a few exceptions exist. In a study examining visitor standards for crowding at Mesa Verde National Park in Colorado (which includes nearly 5,000 known archaeological sites, including 600 cliff dwellings), visitors were asked to rate the acceptability of computer-edited photos showing a range of numbers of visitors/tour groups (Manning, 2007). The results suggested that tour-group size is relatively unimportant to the visitors, but smaller tour groups are more acceptable than larger tour groups. Visitors also reported that seeing one or two tour groups is acceptable, but seeing three tour groups or more is unacceptable. By using the same approach, research was conducted to evaluate visitors' standards related to the number of people-at-one-time (PAOT) at the historic lighthouse on Little Brewster Island (Manning, 2007). Findings of this study indicated that visitors find it acceptable to see a level of visitor use of up to around 55 PAOT. Similarly, research helped estimate and manage carrying capacity of Alcatraz Island, a historic prison. Visitors' crowding standards for the prison cellhouse, which is the principal attraction on the island, were also evaluated by using a visual research method (Manning, Wang, Valliere, Lawson, & Newman, 2002).

Crowding Standards

The concept of carrying capacity includes a social dimension, that recognizes there is a level of use beyond which the visitor experience can be affected (Manning, 2007). This serves as the theoretical and empirical foundation for crowding research in parks and related areas (Manning, Valliere, Minter, Wang, & Jacobi, 2000). Crowding problems are one of the most common issues and have received extensive attention in parks and related areas (Vaske & Shelby, 2008). For example, at Petra crowding is one of main issues affecting both the park's resources and tourists' experiences (Akrawi, 2012; Magablih & Al-Shorman, 2009).

Crowding is a psychological and/or physical state in which an individual seeks to be isolated from undesirable social contact (Desor, 1972; Stokols, 1972). A distinction between crowding and density should be recognized. Density is a descriptive term that refers to the function of the area and the number of people in a setting; it is directly measured as persons per unit of space (Stokols, 1972), and it can be determined objectively (Shelby, Vaske, & Heberlein, 1989; Vaske & Donnelly, 2002). Crowding, however, is a negative evaluation of density (Shelby et al., 1989; Vaske & Shelby, 2008) involves a value judgment that the number or type of people encountered exceeds visitors' normative standards for their experience (Lime, McCool, & Galvin, 1996). The term "perceived crowding" refers to the psychological state of an individual related to their evaluation of the density for a specific environment depending on the number of encounters (Shelby & Heberlein, 1986). Encounters refer to the number of other people that an individual notices in a setting (Vaske & Donnelly, 2002).

There is considerable evidence that a variety of personal characteristics of visitors influence their evaluative standards of crowding. These characteristics include: visitor motivations (Ditton, Fedler, & Graefe, 1983; Schreyer & Roggenbuck, 1978), visitor expectations and preferences (Bultena, Field, Womble, & Albercht, 1981; Shelby, 1980), and visitors' past experiences (Manning et al., 2000). Numerous studies demonstrated that the characteristics of other visitor encountered also influence crowding norms. These characteristics include: mode of travel (e.g., riding horseback or walking), size of the party (Stankey, 1973), and behavior of other groups (e.g., noise, yelling, and littering) (West, 1982). Situational variables that may affect the visitors' evaluation of crowding include; the type of area (e.g., wilderness areas or heritage areas), location within an area, and environmental quality and design (Manning et al., 2000).

Heritage Tourism Typology

Heritage tourists are not a homogeneous segment, and they can be differentiated by their motivations and experience that they seek (Marcotte & Bourdeau, 2006; McKercher, 2002; McKercher & du Cros, 2003, 2010; Nuryanti, 1996; Orbaşlı & Woodward, 2009; Timothy & Boyd, 2003). Some tourists are highly motivated to visit heritage sites, and for others, visiting heritage sites does not play an important role in travel decisions (McKercher & du Cros, 2010). McKercher (2002) stated that heritage tourists themselves may seek qualitatively different experiences, or may be capable of engaging in an attraction at different levels. He suggested a model that classifies heritage tourists according to two main dimensions: the importance of cultural heritage motives in the decision to visit a

destination (i.e., centrality) and the depth of experience. Based on these, five types of tourists have been identified:

1. *Purposeful heritage tourist* (high centrality/deep experience) – a tourist who indicates that the main reason to visit a destination is to learn and experience about its heritage, and this type of tourist has a deep heritage experience.
2. *Sightseeing heritage tourist* (high centrality/shallow experience) – a tourist who indicates that the main reason to visit a destination is to learn and experience about its heritage, but this visitor has a shallower, entertainment-oriented experience.
3. *Casual heritage tourist* (modest centrality/shallow experience) – a tourist who indicates that learning about a destination’s heritage plays a limited role in the travel decisions. This type of tourist engages the destination in a shallow experience.
4. *Incidental heritage tourist* (low centrality/shallow experience) – a tourist who indicates that learning about a destination’s heritage plays little or no meaningful role in the travel decisions. However, while at the destination, this person will participate in heritage tourism activities, and ends up having a shallow experience.
5. *Serendipitous heritage tourist* (low centrality/deep experience) – a tourist who indicates that learning about a destination’s heritage plays little or no meaningful role in the travel decisions, but while at the destination, this person will end up participating deeply in heritage tourism activities.

McKercher (2002) tested this model empirically using Hong Kong as a case study. He found that more than half of Hong Kong cultural tourists are Casual and Incidental cultural tourists, who cultural tourism does not play an important role in their decision and

they had a shallow experience. In a subsequent study, McKercher and du Cros (2003) tested the validity of the model, and it was found that the model is usable for benefits-based segmentation, and it is useful predictor of the experience type and learning amount that tourists are seeking to have. Liu (2013) verified that the two dimensions used in McKercher's model are valid variables in segmenting the heritage tourist market. This is consistent with the findings derived from Nguyen and Cheung's (2013) study that found that these two dimensions are more important than tourists' demographic characteristics and trip profiles for identifying heritage tourists and managerial strategies.

McKercher's model has been used by different researchers in variety of application. In a study to evaluate the economic importance of cultural tourism to a small island destination tourism market, Croes and Semrad (2013) used the model to segment cultural tourists and determine the economic impact for each segment to the tourism destination's economy. The authors found that the model is limited when applied on a small island destination and it cannot be used to conclude if tourists consider themselves as cultural tourists. However, Kantanen and Tikkanen (2006) used the model to study differences in cultural tourists' relationships to cultural attractions and it was found that the model is helpful to conclude that different types of tourists have different relationships to cultural attractions. McKercher's model was also adapted by Hurtado, Dowling and Sanders (2013) in an exploratory study to propose a geotourism typology model.

Since motivations and experiences of tourists can affect their crowding standards (Manning et al., 2000; Manning, 1999), this paper will explore the influence of these two dimensions by using McKercher's (2002) cultural tourism typology model.

Study Area: Petra Archaeological Park

Petra covers an area of 65,235 acres within Wadi Musa town. It is a World Heritage Site as designated by UNESCO in 1985, and it was selected in 2007 to be one of the New 7 Wonders of the World. Located in southwestern Jordan, Petra is the most important tourism attraction in the country; it is visited by tourists from all over the world. According to The Jordan Ministry of Tourism and Antiquities (2013), the total number of visitors in 2013 was 609,044.

Petra encompasses extensive archaeological remains such as copper mines, temples, churches and other public buildings. The Outstanding Universal Value¹ of Petra lies in the sheer number of tomb and temple architecture, religious sites, and the water systems including channels, tunnels, dams, and cisterns that were used to control and conserve rains. In addition, the traditional Nabataean rock-cut monuments (e.g., Al-Khaznah (The Treasury), the Urn Tomb, the Palace Tomb, the Corinthian Tomb, and the Deir ‘monastery’) represent a unique artistic achievement and an outstanding example of architecture of the first centuries BC to AD (World Heritage Center, n.d.).

In 2009, the Petra Development and Tourism Regional Authority (PDTRA) was established to control the whole region of Petra (186,565 acres) including Petra Archaeological Park. The management of the archaeological site falls under the responsibility of the Petra Archaeological Park (PAP) which is a subordinate organization that reports to the PDTRA.

¹ Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole.

In response to the potential impact of growth in tourism and visitor numbers, the government of Jordan invited international institutions, on five occasions, to prepare management plans for Petra:

- *Master Plan for the Protection and Use of the Petra National Park* (National Park service, 1968).
- *Petra National Park Management Plan* (UNESCO, 1994).
- *Management Analysis and Recommendations for the Petra World Heritage Site* (US/ICOMOS, 1996).
- *Petra Archaeological Park Operating Plan* (Ministry of Tourism and Antiquities of Jordan & National Park Service, 2000).
- *A Strategic Master Plan for Petra Region* (ATC Consultants GmbH, 2010).

It should be mentioned here that there is little institutional memory of the procedure that was followed in development of these plans, especially in the first plan (Akrawi, 2000, 2012). While these management plans have helped as guiding documents for decision-makers, only the US National Park Service's Petra Operating Plan was approved by the Ministry of Tourism and Antiquities (MoTA), though none were officially approved by the Prime Ministry nor implemented (Petra National Trust, n.d.). Although some plans included some participation of Jordanian counterparts, stakeholders were not involved in the identification of the values, major issues, and in the recommendations presented (Akrawi, 2000, 2012). Furthermore, these plans have followed the conventional approach in heritage management by focusing almost exclusively on the resource rather than the visitor experience.

Expanding visitation to Petra increasingly challenges the park managers charged with balancing their dual tasks of resource protection and high quality tourism provision. One of the main threats facing Petra today is visitor management. The UNESCO Reactive Mission to Petra in December 2010 called on the park managers to “Develop and implement a public use plan, including the definition of visitor management strategies...” (UNESCO, 2011, p. 100). According to Akrawi (2012) there is no system in place to help manage and monitor the visitors within the site at any given point in time. Worsening the situation is the absence of regulations or directional signs to trails and monuments, and visitors move uncontrolled throughout the site at their own risk. Unfortunately, even though the apparent need exists and countless examples of visitor management frameworks have been proposed in various planning documents, the adoption and full implementation of these frameworks has not been done in Petra. It should be also mentioned that carrying capacity research that has been conducted for Petra has focused on the resource and ignored the visitor experiences (Comer & Belli, 1996; Magablih & Al-Shorman, 2009).

Methods

A quantitative survey using normative theory and methods was conducted to collect data for this study. During the peak season of 2014 (April-May), a representative sample of tourists at Petra were asked to complete a self-administrated questionnaire as they exited the park. A systematic sampling protocol (e.g., asking every 5th tourist) was used to select survey respondents. The percentage of tourists who agreed to complete the questionnaire was recorded. The questionnaire was presented in English and Arabic. The original

questionnaire was developed in English, and then translated to Arabic. The translated copy was reviewed by a translation specialist.

In addition to some general and socio-demographic questions, the survey included two set of questions. The first set included the two questions which were adopted by McKercher (2002) to divide heritage tourists. The first question was a four-point scaled question to measure the depth of tourists' experience, with answers from 1 (Mostly sightseeing/photograph or seeing interesting and unusual sites) to 4 (To develop a deep understanding of Petra). The second question was a 5-point scaled question for the importance heritage tourism as a trip motive with answers ranging from 1 (Not important as all/did not influence) to 5 (Important/main reason).

The second set of questions includes some general questions to understand tourists' perceptions about crowding, and some questions to formulate normative standards for crowding at Petra. Visual methods were used to measure normative standards for two areas in the park, Al-Siq and Al-Khaznah (The Treasury). Tourists were asked to evaluate two series of six photos showing a range of tourists numbers in Al-Siq and Al-Khaznah (The Treasury) (Figure 3.2). People that were used to construct these photos were actually observed in the site. The two series of photos were shown to the respondents on separate posters, where each photograph was 8 X 11 inches in size. All respondents were asked to evaluate the acceptability of each photo on a 9-point scale ranging from -4 (Very unacceptable) to 4 (Very acceptable). Social norm curves were constructed from response means for questions about the acceptability of the number of persons in each photo. Tourists were also asked to evaluate the photos on other evaluative dimensions. For each

location, respondents were asked to report the photo that showed the tourists number they would prefer to see (Preference), the highest tourist number that the management at Petra should allow (Management action), and the number of tourists they typically saw in their trip (Typically seen). For Al-Khaznah (The Treasury), the displacement evaluative dimension was measured by asking respondents to report the photo that showed the number of tourists that is so unacceptable that they would no longer visit Al-Khaznah (The Treasury).

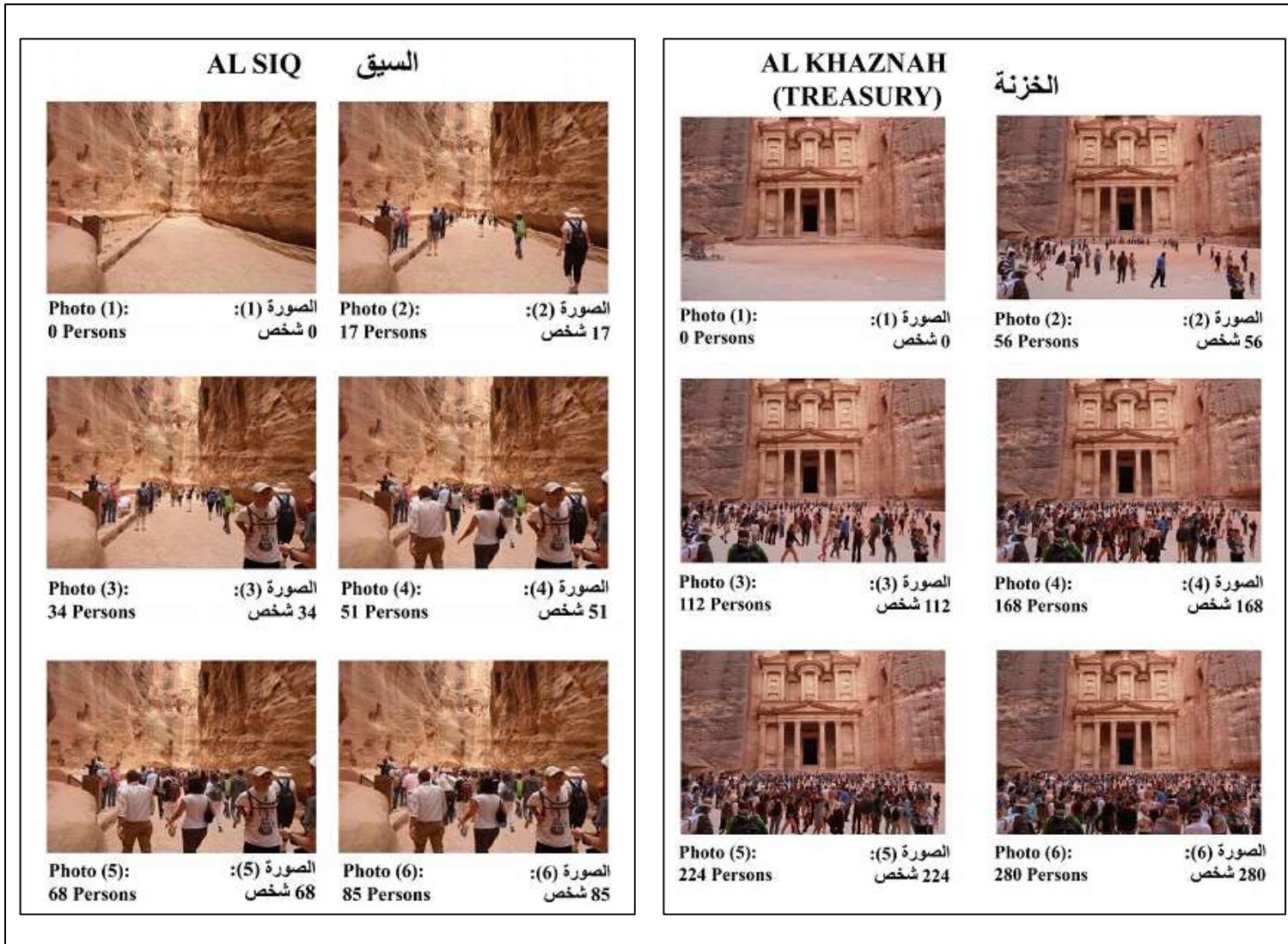


Figure 3.2. The two posters that were used in the study

Results

The survey had a response rate of 50%, with 306 questionnaires completed. By using SPSS Statistics version 20.0, data were scanned and cleaned. Outliers and missing data were detected and treated. Five cases were identified and dropped from the analysis as outliers. Missing data were imputed by using Expectation Maximization (EM) algorithm (Tabachnick & Fidell, 2007).

Tourists' Profile

Table 3.1 shows the characteristics of tourists at Petra. Among 301 respondents, 91.0% were non-Jordanians and 9.0% were Jordanians tourists, 53.5% of them were males, and 46.5% were females. The largest portion of survey respondents were aged 30-39 (21.3%), followed by those 60-69 (19.9%) and 50-59 (18.6%), and the smallest portion were those aged 70-79 (7.6%).

The percentage of repeat tourists was very low at 9.0%, with 91.0% of the tourists as first-time tourists. Over two-thirds of the tourists were visiting with guides.

Types of Heritage Tourists

Two dimensions were used to classify heritage tourists according to McKercher's (2002) model, the depth of experience of tourists and the importance of heritage tourism in the trip motivation. Results (Table 3.2) show that most tourists at Petra have a shallow heritage experience (81.7%) and they are mostly sightseeing or photography-oriented or they seek to learn a little about Petra. Only 3.3% of tourists stated that they seek to develop a deep understanding of Petra heritage. For the second dimension, the five-point scaled question was merged into three categories – low, medium and high importance (Table 3.2).

Table 3.1. *Characteristics of tourists at Petra*

Item	N	Percentage %
<i>Nationality</i>		
<i>Jordanians</i>	27	9.0
<i>Non-Jordanians</i>	274	91.0
<i>Age</i>		
<i>19-29</i>	53	17.6
<i>30-39</i>	64	21.3
<i>40-49</i>	38	12.6
<i>50-59</i>	56	18.6
<i>60-69</i>	60	19.6
<i>70-79</i>	23	7.6
<i>Sex</i>		
<i>Male</i>	161	53.5
<i>Female</i>	140	46.5
<i>Number of visit</i>		
<i>First time</i>	274	91.0
<i>Repeat tourist</i>	27	9.0
<i>Tourists description</i>		
<i>Guided individual</i>	45	15.0
<i>Non-guided individual</i>	32	10.6
<i>Guided group</i>	188	62.5
<i>Non-guided group</i>	36	12.0

Results show that heritage tourism plays an important role in the majority of tourists' trip motivation (89.0%). Heritage tourism played a limited role in 6.3% of tourists' trip motivation. Only 4.6% of the tourists stated that heritage tourism does not influence their trip motivation to travel.

Using McKercher's (2002) model, the five types of heritage tourists at Petra were identified (Figure 3.3). The majority of tourists were sightseeing heritage tourists (71.1%) where heritage tourism plays an important role in their trip motivation to visit but they have a shallow experience. The second largest category was the purposeful heritage tourists

(17.9%). The percentage of casual, incidental, and serendipitous heritage tourists were relatively low, 6.3%, 4.3%, and 0.3%, respectively.

Table 3.2. *Depth of experience and the importance of heritage tourism in trip motivation*

Item	N	%
Depth of experience		
Mostly sightseeing/photography or seeing interesting and famous monuments	155	51.5
A chance to learn a little about Petra Archaeological Park	91	30.2
A chance to learn a lot about Petra Archaeological Park	45	15.0
A chance to develop a deep understanding of Petra Archaeological heritage	10	3.3
Importance of heritage tourism in trip motivation		
Low	14	4.6
Medium	19	6.3
High	168	89.0

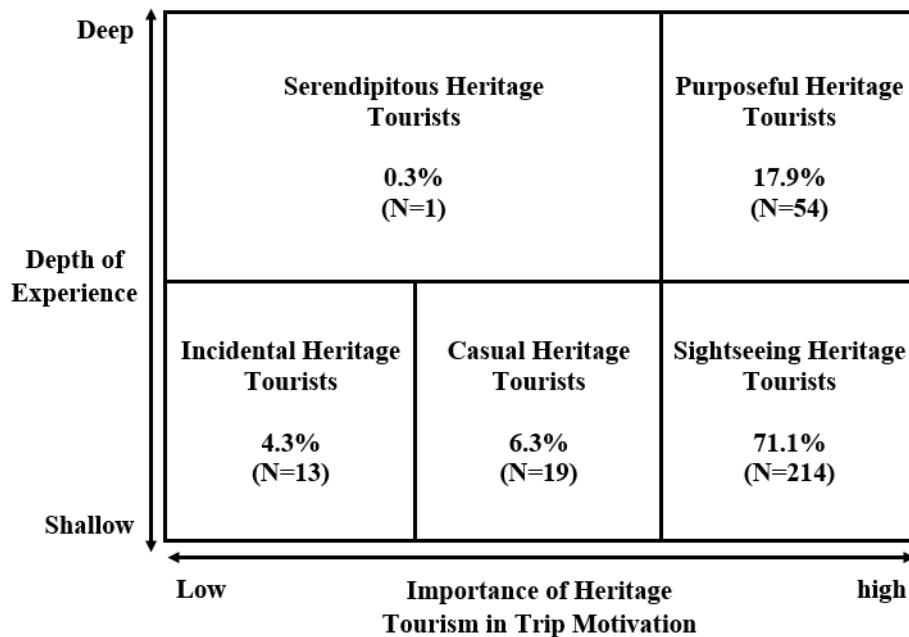


Figure 3.3. *Five types of heritage tourists at Petra by using McKercher's model*

Crowding Standards at Petra Archaeological Park

General Perceptions

Tourists were asked three questions to explore their general perceptions about crowding issues in Petra. First, tourists were asked whether they feel that Petra is currently used beyond its capacity. More than half of the tourists (60.2%) felt that Petra is used beyond its capacity, but 48.2% of tourists pointed out that this was just in limited areas. Tourists were also asked about how the number of people they saw in the park compared with their expectations. While 36.5% of the tourists mentioned that the number matched their expectations, 22.9% reported that the number was less than they expected, and 34.5% reported that the number was more than they expected.

A question asked tourists the extent to which they felt that some crowding-related issues were a problem in Petra. Crowding and visitor numbers were the most problematic issues in the park. These were ranked as a small or big problem by a majority of respondents, 61.7% and 55.1%, respectively. Tourists reported that waiting time to buy a ticket and parking availability are least problematic.

Tourists were asked about crowding at 10 different key locations at Petra by using the 9-point scale developed by Heberlein and Vaske (1977) that ranged from 1 (Not at all crowded) to 9 (Extremely crowded). Results were treated by dichotomizing the scale into values 1 and 2 (defined as not at all crowded), and scale values 3 through 9 (defined as some degree of crowding) (Manning, 2007). The most crowded areas as reported by the tourists were Al-Khaznah (The Treasury) and Al-Siq. The average crowding rating of Al-

Khaznah (The Treasury) was 4.8, indicating that it was slightly to moderately crowded, and for Al-Siq, it was slightly crowded with a 3.5 average crowding rating.

Standards of Quality for Crowding

Crowding standards for the number of tourists at Al-Siq and Al-Khaznah (The Treasury) were measured using a series of six photos as described before. The number of tourist ranged from 0 to 85 for Al-Siq, and from 0 to 280 for Al-Khaznah (The Treasury). Tables 3.3 and 3.4 show the mean acceptability rating for each photo for each of the four types of heritage tourists, and for all tourists combined (The serendipitous heritage tourist type was dropped from the analysis because there was one respondent). The social norm curves derived from the data for all tourists are illustrated in Figure 3.4 and 5. PCI_2 was used to illustrate the crystallization of the norm.

In general, the results show that for all tourists the acceptability decreases as the number of tourists increases. As shown in Figure 3.4, as number of tourists increased at Al-Siq from 0 to 85 in study photos, mean ratings for the acceptability for all tourists combined decreased from 2.6 to -2.6 on the response scale. For Al-Khaznah (The Treasury), as number of tourists increased from 0 to 280 in the photos, mean ratings for the acceptability decreased from 2.76 to -3.12 (Figure 3.5). Also, for all tourist combined the range of acceptable number of tourists at Al-Siq is from 0 to 48 tourists at one time, and for Al-Khaznah (The Treasury) it is from 0 to 135 tourists. The optimum condition at Al-Siq is 17 tourists at one time because it received the highest rating of acceptability from the sample as a whole, whereas for Al-Khaznah (The Treasury) the optimum condition is

Table 3.3. *Acceptability rating for number of tourists at one time at Al-Siq*

Tourist Type	Photo (1) 0 People	Photo (2) 17 People	Photo (3) 34 Persons	Photo (4) 51 People	Photo (5) 68 People	Photo (6) 85 People
Purposeful heritage tourist (N=54)	2.5 (2.8)	2.7 (1.8)	1.4 (1.8)	-0.6 (2.5)	-1.8 (2.9)	-2.1 (3.1)
Sightseeing heritage tourists (N=214)	2.7 (2.2)	3.4 (0.9)	1.7 (1.7)	-0.4 (2.1)	-2.1 (2.2)	-2.8 (2.2)
Casual heritage tourists (N=19)	2.2 (2.5)	3.2 (1.4)	2.8 (1.2)	1.1 (2.1)	-1.1 (2.7)	-2.1 (3.2)
Incidental heritage tourists (N=13)	2.5 (1.9)	2.5 (1.5)	1.4 (1.8)	-0.4 (1.9)	-1.3 (2.4)	-2.0 (2.7)
All tourists (N=301)	2.6 (2.3)	3.2 (1.2)	1.7 (1.7)	-0.3 (2.2)	-2.0 (2.4)	-2.6 (2.4)

Acceptability was measured by 9-point scale ranging from -4 (very unacceptable) to +4 (very acceptable).

Table 3.4. *Acceptability rating for number of tourists at one time at Al-Khaznah (The Treasury)*

Tourist Type	Photo (1) 0 People	Photo (2) 17 People	Photo (3) 34 Persons	Photo (4) 51 People	Photo (5) 68 People	Photo (6) 85 People
Purposeful heritage tourist (N=54)	2.8 (2.7)	2.2 (1.9)	0.3 (2.6)	-1.5 (2.4)	-2.3 (2.6)	-2.9 (2.5)
Sightseeing heritage tourists (N=214)	2.9 (2.2)	3.1 (1.3)	0.8 (1.7)	-1.3 (2.2)	-2.8 (2.0)	-3.3 (1.8)
Casual heritage tourists (N=19)	2.1 (2.4)	3.6 (0.6)	2.1 (1.2)	0.3 (2.0)	-1.7 (2.1)	-2.8 (2.1)
Incidental heritage tourists (N=13)	2.2 (2.2)	2.5 (1.5)	0.9 (1.7)	-0.2 (2.2)	-1.1 (2.4)	-1.9 (2.3)
All tourists (N=301)	2.8 (2.3)	2.9 (2.3)	0.8 (1.9)	-1.2 (2.2)	-2.6 (2.2)	-3.1 (2.0)

Acceptability was measured by 9-point scale ranging from -4 (very unacceptable) to +4 (very acceptable).

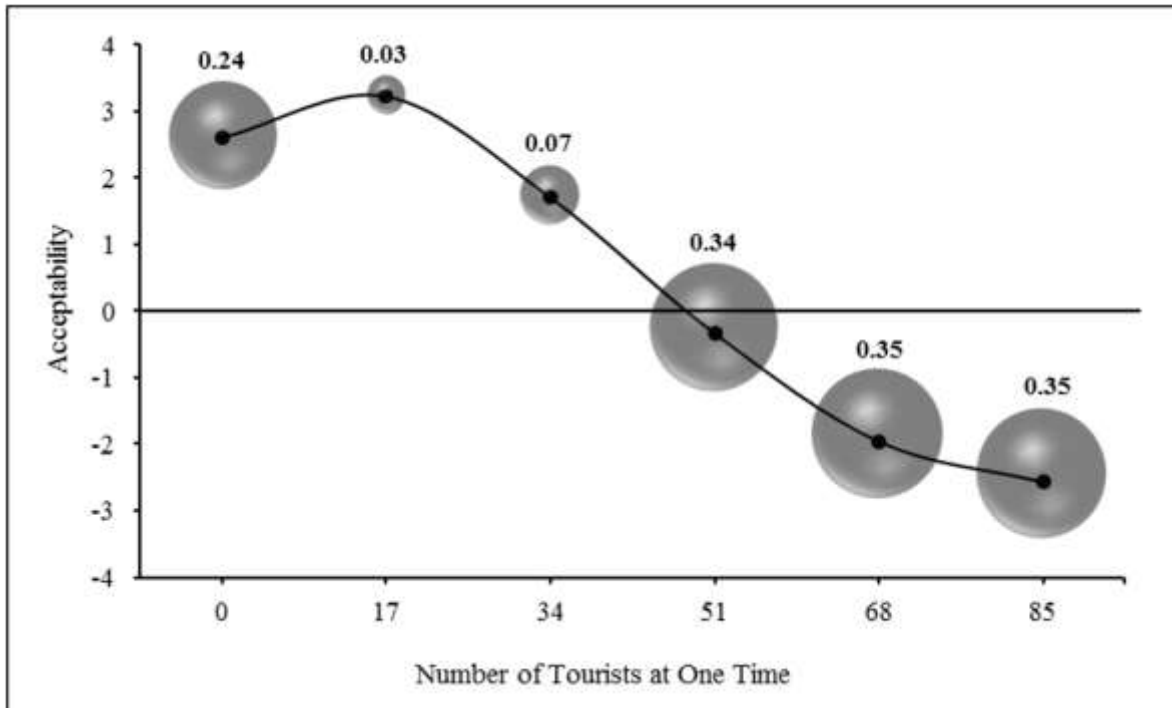


Figure 3.4. Social norm curve for acceptability of number of tourists at one time at Al-Siq

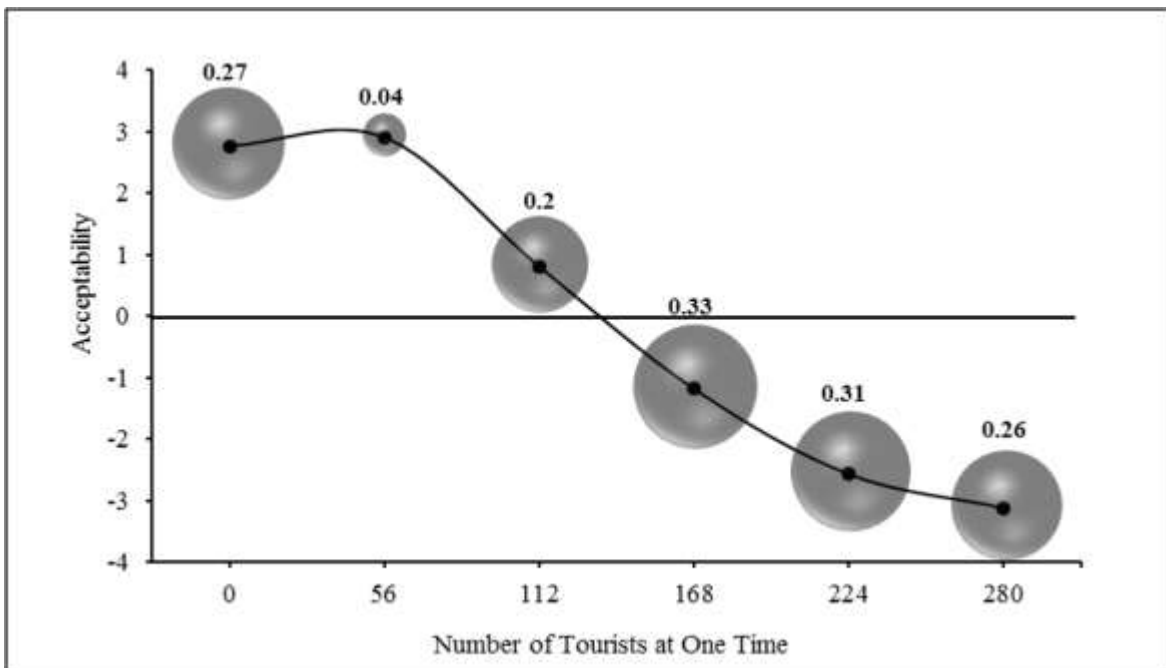


Figure 3.5. Social norm curve for acceptability of number of tourists at one time at Al-Khaznah (The Treasury)

tourists at one time. The maximum acceptable number of tourists at one time is at Al-Siq is 48 tourists and for Al-Khaznah (The Treasury) it is 135 tourists at one time.

The Potential for Conflict Index (PCI_2) for acceptability evaluation ranged from 0.03 to 0.35 at Al-Siq (Figure 3.4), and from 0.04 to 0.33 at Al-Khaznah (The Treasury) (Figure 3.5). The bubbles in Figures 4 and 5 represent the PCI_2 of the evaluation for each photo, the size of the bubble represents the amount of the conflict regarding the acceptability, the larger the bubble, the greater potential for conflict. The PCI_2 values indicated that there is modest variation in the acceptability evaluations, especially when the evaluations go into the unacceptable range.

Figure 3.6 and 3.7 show the social norm curves for crowding based on McKercher's heritage tourists types at Al-Siq and Al-Khaznah (The Treasury). It can be recognized at the two locations that the acceptability of the number of tourists at one time for all four types of heritage tourists decreases as the number of tourists increases. Purposeful heritage tourists generally have the lowest acceptable number of tourists at both locations. At Al-Siq the maximum acceptable number of tourists for purposeful heritage tourists is 46 tourists at one time, and at Al-Khaznah (The Treasury) it is 121 tourists at one time. The sightseeing heritage tourists accepted a maximum of 48 tourists at Al-Siq, and 134 at Al-Khaznah (The Treasury). Casual heritage tourists generally have the highest crowding standards among the other types. At Al-Siq, the maximum acceptable number tourists for this type is 60 tourists, and at Al-Khaznah (The Treasury) is 175 tourists.

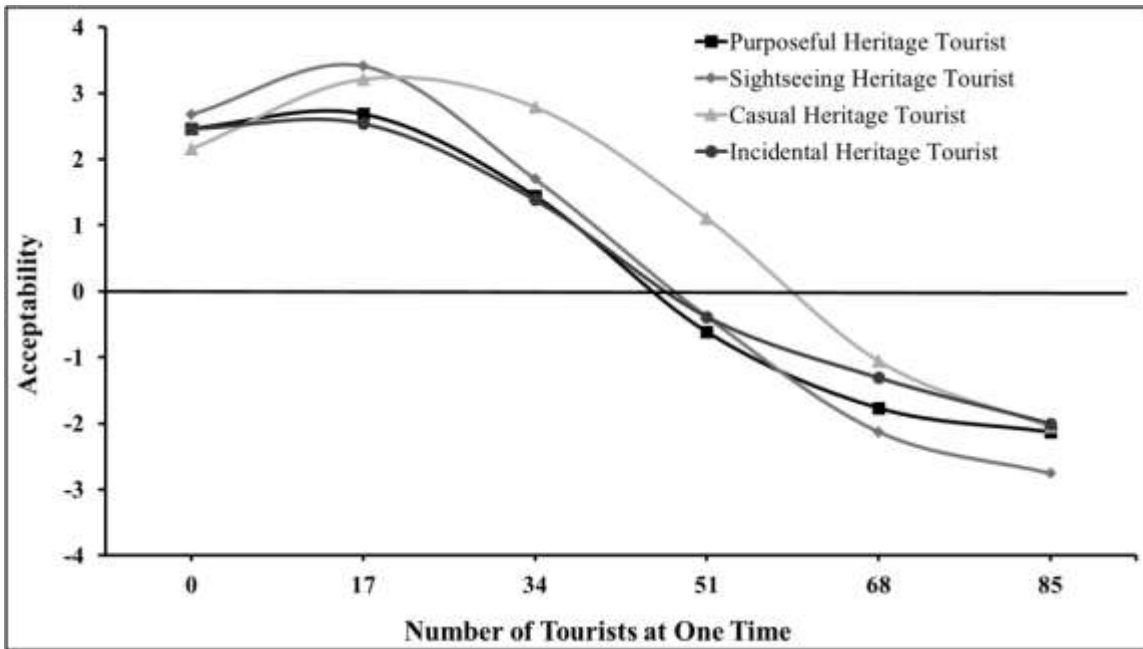


Figure 3.6. Social norm curves for McKercher's heritage tourist types for acceptability of number of tourists at one time at Al-Siq

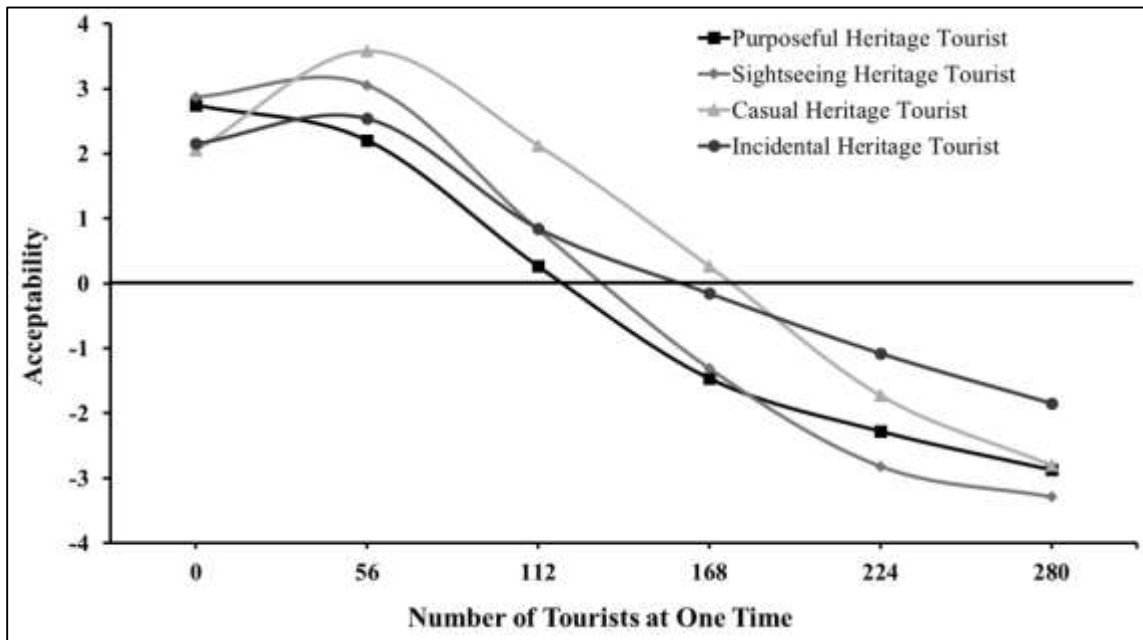


Figure 3.7. Social norm curves for McKercher's heritage tourist types for acceptability of number of tourists at one time at Al-Khaznah (The Treasury)

To test for significant differences in crowding standards among the four types of heritage tourists, a one-way ANOVA with Tukey-Kramer post hoc test was conducted by using SPSS Statistics version 20.0. Tukey-Kramer was selected because it is recommended for use in the unequal sample size (Dunnett, 1980). Table 3.5 summarizes comparisons between the tourists types. It was found that at both locations, there were significant differences in the “acceptability” of the number of tourists among the four types of heritage tourists, $F_{(df=3, 297)} = 3.449, p < .05$. At Al-Siq, the Tukey-Kramer post hoc test showed that purposeful heritage tourists have a significantly ($p < .05$) lower acceptability standard compared to other types of tourists, and the casual heritage tourists have significantly ($p < .05$) the largest standard. Sightseeing and incidental heritage tourists were statistically equivalent in their acceptability standards. At Al-Khaznah (The Treasury), only the casual and incidental heritage tourists were statistically equivalent, with standards larger than purposeful and sightseeing heritage tourists. Purposeful heritage tourists were significantly ($p < .05$) different from the other types with the lowest acceptability standard. At both location, the results showed that there was no significant difference between the four types of tourist toward their “preferences” for the number of tourists.

Similarly, comparisons were made between the four types of heritage tourists standards for the number of tourists that reflect when the Petra should take some “management action.” The results show that the four types of heritage tourists are statistically equivalent at Al-Khaznah (The Treasury), but they are significantly ($p < .05$) different at Al-Siq. The purposeful heritage tourists who had the most restricted standards

at Al-Siq were significantly ($p < .05$) different from the incidental heritage tourists, but they were statistically equivalent to the sightseeing and casual heritage tourists.

Also, a one-way ANOVA was performed to compare the number of tourists “typically seen” at the two location. Significant differences ($p < .05$) were found at both locations. Results for Al-Siq demonstrated that purposeful heritage tourists were significantly different ($p < .05$) from sightseeing heritage tourists, but they are statistically equivalent with casual and incidental heritage tourists. Sightseeing, casual, and incidental heritage tourists are statistically equivalent. At Al-Khazanah, the purposeful heritage tourists and incidental heritage tourists were statistically equivalent, but they are significantly different ($p < .05$) from sightseeing and casual heritage tourists who are statistically equivalent. ANOVA results indicated that there is no significant difference between the four types of heritage tourists regarding the “displacement” evaluative dimension at Al-Khazanah.

A dependent t-test was used to determine the mean score differences between the evaluative dimensions for all tourists. Results show significant ($p < .05$) differences among the evaluative dimensions for all tourists at Al-Siq. However, preferences are the lowest standards and management action was the largest. At Al-Khazanah (The Treasury) acceptability and typically seen ratings are not significantly different, but all other dimensions are significantly ($p < .05$) different from each other. Preferences-based standards are the lowest, and the displacement-based standards are the highest.

Table 3.5. Comparison of rating of different evaluative dimensions for heritage tourists

Evaluative dimensions	Mean (SD)					ANOVA	
	All tourists (N=301)	Purposeful heritage tourists (N=54)	Sightseeing heritage tourists (N=214)	Casual heritage tourists (N=19)	Incidental heritage tourists (N=13)	F	p
Al-Siq							
Acceptability	45.5 (13.8) ¹	43.2 (12.8) ^a	46.3 (13.6) ^b	58.6 (9.3) ^c	46.9 (18.2) ^b	5.938	.001
Preferences	22.8 (16.8) ²	23.9 (23.0)	21.4 (12.4)	25.1 (18.2)	32.7 (31.4)	2.280	.079
Management action	48.4 (17.2) ³	43.8 (19.7) ^a	48.9 (16.4) ^{ab}	48.3 (16.2) ^{ab}	58.3 (18.2) ^b	2.819	.039
Typically seen	37.2 (15.3) ⁴	43.1 (13.1) ^a	35.2 (14.3) ^b	36.7 (16.3) ^{ab}	44.5 (28.2) ^{ab}	5.100	.002
Al-Khaznah (The Treasury)							
Acceptability	132.8 (48.8) ¹	112.3 (48.7) ^a	131.8 (43.1) ^b	170.8 (45.8) ^c	163.7 (70.6) ^c	15.039	.000
Preferences	62.5 (45.4) ²	63.3 (62.5)	60.7 (41.1)	70.7 (41.1)	73.2 (35.3)	.564	.639
Management action	157.8 (53.2) ³	152.4 (57.0)	159.0 (50.9)	158.1 (77.6)	165.2 (33.0)	.299	.826
Displacement	246.7 (52.1) ⁴	245.9 (54.2)	246.7 (52.1)	248.5 (52.6)	258.5 (22.7)	.230	.876
Typically seen	126.0 (47.1) ¹	152.4 (36.8) ^a	120.6 (45.1) ^b	109.1 (47.5) ^b	133.5 (74.2) ^{ab}	8.094	.000

Means in the same row/column that do not share at least one superscript differ at $p < .05$.

Superscript letters indicate the differences between types of tourists. Superscript numbers indicate the differences between the evaluative dimensions within all tourists.

Groups mean differences were determined by Tukey-Kramer post hoc test.

Discussion and Conclusion

McKercher (2002) suggested a model to divide heritage tourists into five categories based on two dimensions, tourists' depth of experience and the importance of heritage tourism in the tourists' trip motivation. Using this model, it was found that sightseeing heritage tourists were the largest category among the Petra tourists. According to McKercher (2002), this type of tourist has a shallow experience, and heritage tourism plays an important role in their trip motivation. Results revealed that the majority of Petra tourists indicated that heritage tourism and seeking to learn about heritage of Petra is the major reason for their travel. Nonetheless, their experience was shallow and entertainment-oriented rather than focused on developing a deep understanding of Petra's archaeological heritage.

A visitor survey indicated that crowding and visitor numbers are problematic issues at Petra, and that Al-Siq and Al-Khaznah (The Treasury) are the most crowded areas in the park. Therefore, using normative theory with visual research methods, this article examined and compared crowding standards at Al-Siq and Al-Khaznah (The Treasury) for four types of heritage tourists suggested by McKercher. Descriptive statistics and social norm curves showed the tourists' acceptability levels go down with an increasing number of tourists. Tourists indicated that the presence of not more than 48 tourists at one time at Al-Siq and 135 tourists at one time at Al-Khaznah (The Treasury) would be acceptable. High norm intensity (i.e., changing from a high positive rating to high negative rating) suggests that crowding is an important issue to the tourists in determining the quality of their experience at Petra. However, it can be claimed that tourists crowding standards are

not violated at both locations, because all evaluative dimensions (except the preference dimension) were significantly below the number of tourists typically seen by tourists. As reported by tourists, preferences standards were violated by 48% at Al-Siq and 67.4% at Al-Khazanh. However, tourists numbers typically seen by Petra tourists are equal or below the acceptability, management actions, and displacement-based standards.

Turning to ratings across the types of heritage tourists, findings of this study demonstrate both similarities and differences among the four types of tourists studied. Tourists' motivation is one of the personal characteristics that might influence the evaluative standards of crowding (Ditton et al., 1983; Schreyer & Roggenbuck, 1978). Results indicate that tourists who are highly motivated to visit heritage sites (i.e., purposeful and sightseeing heritage tourists) reported the most restrictive acceptable number of tourists at the park. This is unlike the casual and incidental heritage tourists who reported higher acceptability standards at both locations. These results are similar to those obtained by Marin, Newman, Manning, Vaske, and Stack (2011) that showed that highly motivated visitors have more restrictive standards than less motivated visitors. Needham et al. (2010) also found that motivations play an important role in the evaluation of the densities of use.

Among the four heritage tourist types, purposeful heritage tourists have the most restrictive standards regarding the highest number of tourists that the management at Petra should allow in Al-Siq. The reason for this intolerance to crowding could be because this type of tourists seeks to gain a deep experience, and the main reason for their travel is heritage tourism, so they require more restricted standards to fulfill their desired outcomes.

At Al-Khaznah, no differences are found between the tourists. One possible explanation of this could be the size and nature of the locations. Unlike Al-Khaznah plaza, Al-Siq is a small and narrow path, thus different types of tourists may have different standards about the number of tourists that management should allow. These findings support the literature that indicates that the type of area, locations within an area, and environmental quality and design may affect tourists' evaluation of crowding (Manning et al., 2000).

Considering the tourists type, findings revealed that all four types of heritage tourists are getting a high quality experience with regard to crowding standards, especially at Al-Siq. Although the preference-based standards for these types of tourists are significantly lower than the number that they typically see, the acceptability, and management action-based standards are not violated. These standards are higher than the number of tourists typically seen. At Al-Khaznah (The Treasury), the acceptability standards for the purposeful and sightseeing heritage tourists are significantly violated, but they are not for the casual and incidental heritage tourists. A significant difference was found between the number of tourists typically seen across the tourists types, which suggests that the importance of heritage tourism in tourists' trip motivation and their depth of experience can affect the tourists' attention to or perceptions of the number of tourists around them. However, findings indicated that tourists agree on the optimal use level at both locations because they have the same preference standards.

The evaluative dimensions tested in this study mostly differ from one another, and there is a clear hierarchy of crowding standards between these dimensions. Similar to previous research, the preference evaluative dimension is the lowest standards, then the

acceptability, and finally the management action-based standards (Hallo & Manning, 2009; Manning, 1999). This suggest that these evaluative dimensions may represent a range of potential standards that could be used at Petra, depending on the objective of the management. For example preference standards could be used with a fragile and deteriorated monument, while acceptability standards can be used with well preserved and more impact resistant and resilient monuments.

This study focuses on applying McKercher's model of heritage tourists and merging it with the normative indicators and standards-based frameworks. McKercher's model depends on two important dimensions, tourists' depth of experience and tourists' trip motivation. These are important issues that should be taken in consideration to manage heritage sites in a sustainable manner. Findings of this study showed that there are significant differences in crowding standards between McKercher's heritage tourists types. To increase the generalizability of these results, some future research is needed. First, McKercher (2002) used one question to measure each dimension in the model and future research should consider using a series of items to measure both tourists' depth of experience and the importance of heritage tourism in the trip motivation. Second, this study has focused on crowding standards in two key locations in Petra, but future research might measure crowding standards at different location at the site. Third, it is recommended that standards for different indicators, rather than just crowding, be examined.

The normative standards formulated in this study provide empirical, tourist-based guidance to manage crowding at Petra. Management actions should be taken when these normative standards are violated. These management actions could range from direct

approaches like limiting the number of tourists, to more indirect approaches like encouraging tourists to visit outside of the peak use seasons. However, future research is needed to explore what type of visitor-related management actions are suitable for Petra, and if tourists' support for certain management action is dependent on McKercher's tourists types and values that they assign to Petra.

Heritage tourism management is moving to a more visitor-oriented approach that include concerns about tourists' preferences and the quality of their experience (Apostolakis & Jaffry, 2005). When tourists have a satisfying experience, they support the philosophy of the site's management (C. M. Hall & McArthur, 1993, 1996), so the site becomes easier to manage. For example, the results of this study revealed that the majority of tourists at Petra seek to gain a shallow entertainment-oriented experience, and they are just sightseers that come to visit Petra to take some photos, enjoy their time, and learn little bit about Petra. By considering this, managers can provide a variety of interpretation materials and on-site programming that more deliberately combines education and entertainment. More sensitive heritage resources could be preserved for the smaller number of tourists intentionally seeking a deeper understanding of Petra archaeological heritage. Involving tourists and their experience in the decision-making process will ensure the sustainability of heritage tourism at Petra and other heritage sites.

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CHAPTER FOUR

VALUE ORIENTATIONS AND HERITAGE TOURISM MANAGEMENT AT PETRA ARCHAEOLOGICAL PARK

To achieve the goal of sustainability in heritage tourism, heritage sites should be managed effectively in a way that ensures preservation of heritage resources and presentation of them to the public (Glasson et al., 1995; McArthur & Hall, 1993, 1996). Decision-making processes in managing heritage tourism have traditionally relied on a top-down professional-led approach (C. M. Hall & McArthur, 1993, 1996; Timothy & Boyd, 2003). However, this approach is deficient because it generally ignores the stakeholder's dimensions of the process, and it fails to sufficiently consider involving the tourists in the heritage tourism management process. Furthermore, strategies for heritage tourism management have traditionally focused on the supply side (i.e., the resource) and ignored the demand side (i.e., the tourists) (Timothy & Boyd, 2003). Recently, the global trends of heritage tourism management have moved forward from this product-led development approach that underlines exhibits and education to a more visitor-oriented development approach that underlines consumer preferences and quality of personal experience (Apostolakis & Jaffry, 2005). Thus, a holistic management approach should be used, that considers participation of tourists and different stakeholders in the decision-making process (Bruyere, Beh, & Lelengula, 2009).

Recently, a more integrated heritage sites management approach was developed to provide clearer guidance for decisions. This approach, called value-based site management,

is “the coordinated and structured operation of a heritage site with the primary purpose of protecting the significance of the place” (Mason, 2002, p. 27). A site’s significance can be determined by understanding and analyzing the values that communities and other stakeholders attribute to the heritage resources (de la Torre, MacLean, & Myers, 2003; MacLean & Myers, 2003; Mason, MacLean, & de la Torre, 2003; Mason, Myers, & de la Torre, 2003; Myers, Smith, & Shaer, 2010). For instance, heritage sites are visited by different kinds of tourists who have different values and expectations. Management decisions should include a clear understanding of these values. The value-based approach in heritage management involves different stakeholders (e.g., tourists) and their different values in the management process (Poulios, 2010).

Number of management frameworks were developed to manage parks and protected areas by balancing between the protection of resources and providing quality experience to the visitors. These frameworks depend on three main elements. First, management objectives and associated indicators and standards are formulated. Second, indicators are monitored to ensure that standards are maintained. Finally, management actions are implemented to maintain indicators within the designated standards. These management actions differ according to the settings, values held by the park stakeholders, the use levels and access (National Park Service, 1997). Therefore, different stakeholders, including tourists themselves, should be involved to determine the appropriate management actions to take.

Because heritage tourists are not homogeneous, developing management actions that are acceptable for all tourists might be not easy, especially if these tourists have

conflicting values regarding the resources (Shelby & Shindler, 1992). Heritage resources might be valued for their cultural and education benefits, or serve as sources of local, national, or ethnic identity or pride, and some are expected to provide economic benefits for communities. Understanding the diversity of these values is important in obtaining the support of tourists and other stakeholders for heritage management strategies, which is an important precondition to achieve sustainable heritage tourism (Byrd, 2007). Without tourists' support, management strategies might be difficult to implement.

Generally, management approaches are divided into two groups – direct and indirect management approaches (Manning, 2011; McCool & Christensen, 1996; Pedersen, 2002). Direct management actions are those “characterized by legal prescriptions of appropriate and inappropriate behaviors that are accompanied by formalized sanctions, such as penalties or fines” (McCool & Christensen, 1996, p. 69). Direct management actions aim to control human behavior through regulations that may involve enforcement and limiting activities or use. Indirect management actions attempt to change human behavior by educating and informing visitors about appropriate behavior at a site (Manning, 2011; McCool & Christensen, 1996; Pedersen, 2002).

There is overwhelming evidence in the literature confirming that visitors to parks and related areas have different preferences toward the management actions (Anderson & Manfreda, 1986; Borrie, Freimund, & Davenport, 2002; Bullock & Lawson, 2008; Bultena, Albercht, & Womble, 1981; Lawson & Manning, 2003; R. E. Manning, 1996; Martin, Marsolais, & Rolloff, 2009; Seymour, Curtis, Pannell, Allan, & Roberts, 2010; Shindler & Shelby, 1993; Winter, 2005), and some of this research found that visitors with

different values tend to support different management action (Borrie et al., 1997; Lawson & Manning, 2003; Manning, 1996; Seymour et al., 2010; Winter, 2005). Given the importance of values in heritage tourism management and tourists' preferences toward management actions, this article aims to explore the values that tourists assign to Petra Archaeological Park (Petra) in Jordan and how these values influence tourists' support or opposition of management actions. Because of the existing confusion and overlap in the literature about the terms heritage and culture in relationship to tourism, this article will use the term heritage tourism as an umbrella to indicate both these terms.

Heritage Tourists

Heritage tourists are not a homogeneous market segment, and they can be differentiated by their motivations and experience that they seek (Marcotte & Bourdeau, 2006; McKercher, 2002; McKercher & du Cros, 2003, 2010; Nuryanti, 1996; Orbaşlı & Woodward, 2009; Timothy & Boyd, 2003). Some tourists are highly motivated to visit heritage sites, but for others visiting heritage sites does not play an important role in travel decisions (McKercher & du Cros, 2010). McKercher (2002) stated that different heritage tourists may seek qualitatively different experiences, or may be capable of engaging in an attraction at different levels. He suggested a model that classifies heritage tourists according to two main dimensions: the importance of cultural heritage motives in the decision to visit a destination (i.e., centrality) and the depth of experience. Using this model, five types of tourists have been identified:

1. *Purposeful heritage tourist* (high centrality/deep experience) – a tourist who indicates that the main reason to visit a destination is to learn and experience about its heritage, and this type of tourist has a deep heritage experience.
2. *Sightseeing heritage tourist* (high centrality/shallow experience) – a tourist who indicates that the main reason to visit a destination is to learn and experience about its heritage, but this visitor has a shallower, entertainment-oriented experience.
3. *Casual heritage tourist* (modest centrality/shallow experience) – a tourist who indicates that learning about a destination’s heritage plays a limited role in the travel decisions. This type of tourist engages the destination in a shallow experience.
4. *Incidental heritage tourist* (low centrality/shallow experience) – a tourist who indicates that learning about a destination’s heritage plays little or no meaningful role in the travel decisions. However, while at the destination, this person will participate in heritage tourism activities, and ends up having a shallow experience.
5. *Serendipitous heritage tourist* (low centrality/deep experience) – a tourist who indicates that learning about a destination’s heritage plays little or no meaningful role in the travel decisions, but while at the destination, this person will end up participating deeply in heritage tourism activities.

McKercher (2002) tested this model empirically using Hong Kong as a case study. He found that more than half of Hong Kong heritage tourists are Casual and Incidental heritage tourists, for who cultural tourism does not play an important role in their trip decision and they had a shallow experience. In a subsequent study, McKercher and du Cros (2003) tested the validity of the model, and it was found that the model was usable for

benefits-based segmentation, and it was a useful predictor of the experience type and learning amount that tourists are seeking to have. Liu (2013) verified that the two dimensions used in McKercher's model are valid in segmenting the heritage tourist market. This is consistent with the findings derived from Nguyen and Cheung's (2013) study that found that these two dimensions are more important than tourists' demographic characteristics and trip profiles for identifying heritage tourists and managerial strategies.

McKercher's model has been used by different researchers in a variety of applications. In a study to evaluate the economic importance of cultural tourism to a small island destination's tourism market, Croes and Semrad (2013) used the model to segment heritage tourists and determine the economic impact for each segment. The authors found that the model is limited when applied on a small island destination and it cannot be used to conclude if tourists consider themselves as heritage tourists. However, Kantanen and Tikkanen (2006) used the model to study differences in heritage tourists' relationships to heritage attractions and it was found that the model helped differentiate tourists based on their relationship to heritage attractions. McKercher's model was also adapted by Hurtado, Dowling and Sanders (2013) in an exploratory study to propose a geotourism typology model. Since tourists' values are influenced by motivations and experience is influenced by tourists' values (Borrie, Freimund, & Davenport, 1997; Kim, Borges, & Chon, 2006; Li & Cai, 2011; Madrigal & Kahle, 1994; Woosnam, McElroy, & Van Winkle, 2009), one of the aims of this article is to explore how McKercher's heritage tourists types differ in the values that they assign to Petra.

Values and Heritage Tourism Management

A value is defined as “an enduring belief that a particular mode of conduct or that a particular end-state of existence is personally and socially preferable to alternative modes of conduct or end-states of existence” (Rokeach, 1968, p. 550). Generally, two different perspectives of values can be identified. First, values can be realized as principles, standards, codes, or ideas that direct individuals to action (Mason, 2002; Mason & Avrami, 2002). Second, values may be considered as positive qualities and characteristics seen in things and objects (Mason & Avrami, 2002; Mason, 2002). These perspectives on values parallel the ‘held values’ and ‘assigned values’ that are identified by Brown (1984), who provided a good conceptual clarification of values as it applies to resource management. Held values are the “enduring conception of the preferable which influences choice and action” (Brown, 1984, p. 232). Assigned values are “the expressed relative importance or worth of an object to an individual or group in a given context” (Brown, 1984, p. 236). They are the values that individuals attribute to physical places, goods, and services (Seymour et al., 2010).

Mason (2002) mentioned two insights regarding values of heritage resources. First, heritage is multivalent. An old building might have historical value because it is old, while at the same time, it might have an aesthetic value because of its architectural design and cultural value as symbolic representation of a social group. Second, heritage values are contingent, not objectively given, and not fixed, they are changing depending on the context of the heritage resources. For example, an old statue may lose its values as a result of political issues.

In heritage tourism management, values were traditionally treated as one kind and ignored the others, or, all values are combined and treated as a “black box” (Mason, 2002, p. 8). Both of these approaches are problematic. In the first case, for example, if the economic value was the main focus in a historical site, the tourism activities might affect the historical value. In the second case, when aggregating all values in to one statement of significance, different types of values will be confounded and thus neglected.

In 1980s, an approach called value-based site management was developed to provide a clearer guidance for decisions in managing heritage sites. This approach has been developed and advocated for mainly through the Burra Charter (Australia ICOMOS, 2013). The value-based approach is defined as “the coordinated and structured operation of a heritage site with the primary purpose of protecting the significance of the place” (Mason, 2002, p. 27). A site’s significance can be determined by understanding and analyzing the values that communities and other stakeholders attribute to the heritage resources (de la Torre et al., 2003; MacLean & Myers, 2003; Mason, MacLean, et al., 2003; Mason, Myers, et al., 2003; Myers et al., 2010). This approach places great importance on the concept of stakeholders; it aims to recognize and involve different stakeholders (e.g., tourists) and their different values in the management process (Poulios, 2010).

Several national and international documents show that values have become an important part of the heritage management process. For example, The Nara Document on Authenticity ratified by the UNESCO World Heritage Committee (World Heritage Center, 1994), the Declaration of Saint Antonio (ICOMOS, 1996), and the Australia ICOMOS Burra Charter (Australia ICOMOS, 2013) all indicate the important role of different values

in heritage management. Furthermore, values and participation of stakeholders are also placed at the center of heritage management and decision-making processes as proposed mostly through a series of publications by the Getty Conservation Institute (de la Torre et al., 2003; Demas, 2002; MacLean & Myers, 2003; Mason & Avrami, 2002; Mason, MacLean, et al., 2003; Mason, Myers, et al., 2003; Myers et al., 2010; Sullivan, 1995). Yet, all of these case studies focused on stakeholders other than tourists. Tourists' values and opinions have been mostly ignored in managing heritage attractions. There is a gap in the literature regarding the understanding of how heritage tourists assign values to heritage resources, and the relationship between these assigned values and visitor acceptance of management strategies and actions.

Visitor Management at Heritage Sites

One important way to achieve sustainability in heritage tourism is to manage tourists in a manner that improves the quality of their experience and preserves heritage resources for future generations. A variety of management actions have been suggested in the literature to mitigate the impacts of tourists on heritage sites. Generally, these actions have been divided into two groups – direct and indirect management approaches (R. E. Manning, 2011; McCool & Christensen, 1996; Pedersen, 2002). Direct management actions are those “characterized by legal prescriptions of appropriate and inappropriate behaviors that are accompanied by formalized sanctions, such as penalties or fines” (McCool & Christensen, 1996, p. 69). Direct management actions aim to control human behavior through regulations that may involve enforcement and limiting activities or use. Indirect management actions attempt to change human behavior by educating and

informing visitors about appropriate behavior at a site (R. E. Manning, 2011; McCool & Christensen, 1996; Pedersen, 2002). Obviously, the main difference between the two approaches is that a direct management action leaves no freedom of choice for visitors (Hendricks, Ruddell, & Bullis, 1993; R. E. Manning, 2011). For example, a direct management action to reduce crowding at a heritage site would be limiting the number of visitors by issuing a limited number of entry tickets, while an indirect action for the same problem would be informing potential visitors about crowding problem areas and the advantages of less-used alternative areas (Cole, Petersen, & Lucas, 1987).

Both approaches, direct and indirect, have their place in heritage management. Generally, the literature indicates that some managers prefer indirect management approaches because it gives visitors more freedom, so it has less impact on their experience. Some managers believe that educating visitors is effective in changing visitors' behavior positively, and that it is of compared to direct management approaches (Martin et al., 2009; McAvoy, 1985). In fact, indirect management actions are more appropriate in areas where the main objective is to give visitor more freedom to explore (Pedersen, 2002). But, sometimes this kind of approach can be ineffective because of a lack of awareness of some visitors or others that disregard the management actions, therefore, obstructing the management process in general (R. E. Manning, 2011). In intensive and widespread problems, and in very fragile resources, managers are forced to use direct management approaches (Martin et al., 2009). For example, visitors may not be allowed to visit a very sensitive and fragile archaeological site, or to enter dangerous places. The literature suggests that direct management actions are supported by visitors especially when they

believe that they are better to control their impacts and maintain their experience (R. E. Manning, 2011; Martin et al., 2009). Practically, a combination of the two approaches can be used by putting regulations and rules into places for minimizing the impacts, while at the same time educating visitors about these potential impacts (Pedersen, 2002). In all cases, to be successful, management actions need to be supported by the public and different stakeholders, including heritage tourists themselves.

Petra Archaeological Park

Petra covers an area of 65,235 acres within Wadi Musa town. It is a World Heritage Site as designated by UNESCO in 1985, and it was selected in 2007 to be one of the New 7 Wonders of the World. Located in southwestern Jordan, Petra is the most important tourism attraction in the country. It is visited by tourists from all over the world. According to Jordan Ministry of Tourism and Antiquities (2013), the total number of visitors in 2013 was 609,044.

Petra encompasses extensive archaeological remains such as copper mines, temples, churches and other public buildings. The Outstanding Universal Value¹ of Petra lies in the sheer number of tomb and temple architecture, religious sites, and the water systems including channels, tunnels, dams, and cisterns that were used to control and conserve rains. In addition, the traditional Nabataean rock-cut monuments (e.g., Al-Khasneh, the Urn Tomb, the Palace Tomb, the Corinthian Tomb, and the Deir ‘monastery’)

¹ Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole.

represent a unique artistic achievement and an outstanding example of architecture of the first centuries BC to AD (World Heritage Center, n.d.)

In 2009, the Petra Development and Tourism Regional Authority (PDTRA) was established to control the whole region of Petra (186,565 acres) including Petra. The management of the archaeological site falls under the responsibility of the Petra Archaeological Park (PAP) which is a subordinate organization that reports to the PDTRA.

In response to the potential impact of growth in tourism and visitor numbers, the government of Jordan invited international institutions, on five occasions, to prepare management plans for Petra:

- *Master Plan for the Protection and Use of the Petra National Park* (National Park service, 1968).
- *Petra National Park Management Plan* (UNESCO, 1994).
- *Management Analysis and Recommendations for the Petra World Heritage Site* (US/ICOMOS, 1996).
- *Petra Archaeological Park Operating Plan* (Ministry of Tourism and Antiquities of Jordan & National Park Service, 2000).
- *A Strategic Master Plan for Petra Region* (ATC Consultants GmbH, 2010).

It should be mentioned here that there is little institutional memory of the procedure that was followed in development of these plans, especially in the first plan (Akrawi, 2000, 2012). While these management plans have helped as guiding documents for decision-makers, only the US National Park Service's Petra Archaeological Park Operating Plan was approved by the Ministry of Tourism and Antiquities (MoTA), though none were

officially approved by the Prime Ministry nor implemented (Petra National Trust, n.d.). Although some plans included some participation of Jordanian counterparts, stakeholders were not involved in the identification of the values, major issues, and in the recommendations presented (Akrawi, 2000, 2012). Furthermore, these plans have followed the conventional approach in heritage management by focusing almost exclusively on the resource rather than the visitor experience.

Expanding visitation to Petra increasingly challenges the park managers charged with balancing their dual tasks of resource protection and high quality tourism provision. One of the main threats facing Petra today is carrying capacity and visitor management. According to Akrawi (2012) there is no system in place to help manage and monitor the visitors within the site at any given point in time. Worsening the situation is the absence of regulations or directional signs to trails and monuments, and visitors move uncontrolled throughout the site at their own risk.

Currently, a single entry/exit route is used to serve the park through Al-Siq. The management of the park is studying the possibility of using a two-point entry/exit route, that of Al-Siq and the Turkomania road, as well as introduction of a shuttle system (Akrawi, 2012). Using a two-point entry will encourage longer stays at Petra, and it will be easy for tourists to revisit the site.

The UNESCO Reactive Mission to Petra in December 2010 called on the park managers to “Develop and implement a public use plan, including the definition of visitor management strategies...” (World Heritage Committee, 2011, p. 100). Unfortunately, even though the apparent need exists and countless examples of visitor management

frameworks have been proposed in various planning documents, the adoption and full implementation of these frameworks has not been done in Petra. It should also be mentioned that visitor management research that has been conducted for Petra has focused on the resource and ignored the visitor experiences (Comer & Beli, 1996; Magablih & Al-Shorman, 2009).

With reference to Petra, this paper aims to both understand the tourists' value orientations toward Petra, and how these values can affect their preferences toward the management strategies in the park. These information would assist in managing the park to ensure resource sustainability and providing high quality experiences to the tourists.

Methods

A quantitative survey was conducted to collect data for this study. During the peak season of 2014 (April-May), a representative sample of tourists at Petra were asked to complete a self-administrated questionnaire as they exited the park. A systematic sampling protocol (e.g., asking every 5th tourist) was used to select survey respondents. The percentage of tourists who agreed to complete the questionnaire was recorded. The questionnaire was presented in English and Arabic. The original questionnaire was developed in English, and then translated to Arabic. The translated copy was reviewed by a translation specialist.

In addition to general socio-demographic questions, tourists were asked to answer the same two questions adopted by McKercher (2002) to segment heritage tourists. To measure the importance of heritage tourism in trip motivation, tourists were asked a 5-point scale question with answer ranging from 1 (Not important at all/did not influence) to 5

(Important/main reason). The depth of experience was measured by asking a 4-point scaled question with answers from 1 (Mostly sightseeing/photograph or seeing interesting and unusual sites) to 4 (To develop a deep understanding of Petra).

A review of literature suggests that heritage resources may be distinguished as having use and non-use (preservation) values (English Heritage, 1997; Hall & McArthur, 1993, 1996; Klamer, 2013; Lipe, 1984; Mason & Avrami, 2002; Mason, 2002; Riegl, 1996; Timothy & Boyd, 2003). Use values are market values – ones related to benefits from actual recreational use – while non-use (preservation) values are related to benefits from the mere existence of heritage (Mason, 2002; Serageldin, 1999). A group of statements describing these values was used to measure tourists' orientations toward use and preservation values of heritage sites. Using a 7-point scaled question that ranged from 1 (Strongly disagree) to 7 (Strongly agree), tourists were asked to rate how much they agree that each is particularly important to the overall value of Petra. To measure tourists' preferences toward management actions, respondents were asked about their level of support for different potential direct and indirect management actions that could be implemented to manage tourists at Petra. These management actions were based on studies that provide a range of management actions that can be used for managing visitors at tourism and outdoor recreation sites (Cole et al., 1987; C. M. Hall & McArthur, 1998; McArthur & Hall, 1996; Timothy & Boyd, 2003; Timothy, 2011). Tourists evaluated each action on 7-point scale question ranging from 1 (Strongly oppose) to 7 (Strongly support).

Results

The survey had a response rate of 50%, with 306 questionnaires completed. Using IBM SPSS Statistics version 20.0, data were scanned and cleaned. Outliers and missing data were detected and treated. Five cases were identified and dropped from the analysis as outliers. Missing data were imputed using Maximum Likelihood Imputation with the Expectation Maximization (EM) algorithm (Tabachnick & Fidell, 2007).

Tourists' Profile

Table 4.1 shows the characteristics of tourists at Petra. Among 301 respondents, 91.0% were non-Jordanians, and 9.0% were Jordanians tourists. Of respondents, 53.5% of them were males, and 46.5% were females. The largest portion of survey respondents were aged 30-39 (21.3%), followed by those 60-69 (19.9%) and 50-59 (18.6%), and the smallest portion were those aged 70-79 (7.6%). The percentage of repeat tourists was very low at 9.0%, and 91.0% of the tourists are first-time visitors. Over half of the tourists were visiting with guided groups.

Types of Heritage Tourists

Two dimensions were used to classify heritage tourists according to McKercher's (2002) model: the depth of experience of tourists and the importance of heritage tourism as a trip motivation. The results (Table 4.2) show that the tourists at Petra have a shallow heritage experience (81.7%) and they were mostly sightseeing or photography oriented or they sought to learn just a little about Petra. Only 3.3% of the tourist stated that they seek to develop a deep understanding of Petra heritage. For the second dimension, the 5-point scaled question was merged into three categories; low, medium and high importance

Table 4.1. *Characteristics of tourists at Petra*

Item	N	Percentage %
<i>Nationality</i>		
<i>Jordanians</i>	27	9.0
<i>Non-Jordanians</i>	274	91.0
<i>Age</i>		
19-29	53	17.6
30-39	64	21.3
40-49	38	12.6
50-59	56	18.6
60-69	60	19.6
70-79	23	7.6
<i>Sex</i>		
<i>Male</i>	161	53.5
<i>Female</i>	140	46.5
<i>Number of visit</i>		
<i>First time</i>	274	91.0
<i>Repeat tourist</i>	27	9.0
<i>Tourists description</i>		
<i>Guided individual</i>	45	15.0
<i>Non-guided individual</i>	32	10.6
<i>Guided group</i>	188	62.5
<i>Non-guided group</i>	36	12.0

(Table 4.2). The results showed that heritage tourism plays an important role in the majority of tourists' trip motivation, 89.0%. Heritage tourism played a limited role in 6.3% of tourists' trip motivation. Only 4.6% of tourists stated that heritage tourism does not influence their motivation to travel.

Table 4.2. *Depth of experience and the importance of heritage tourism in the trip motivation*

Item	N	%
Depth of experience		
Mostly sightseeing/photography or seeing interesting and famous monuments	155	51.5
A chance to learn a little about Petra Archaeological Park	91	30.2
A chance to learn a lot about Petra Archaeological Park	45	15.0
A chance to develop a deep understanding of Petra Archaeological heritage	10	3.3
Importance of heritage tourism in tourists' trip motivation		
Low	14	4.6
Medium	19	6.3
High	168	89.0

Using McKercher's (2002) model, the five types of heritage tourists at Petra were identified (Figure 4.1). The majority of tourists were sightseeing heritage tourists (71.1%), where heritage tourism plays an important role in their trip motivation but they have a shallow experience. The second largest category was the purposeful heritage tourists (17.9%). The casual, incidental, and serendipitous heritage tourists were relatively low at 6.3%, 4.3%, and 0.3%, respectively.

Heritage Values and Management Actions

This study seeks to measure and understand the value orientations of tourists to Petra, and how that is related to their preference toward a variety of proposed management actions. A confirmatory factor analysis (CFA) was used to determine the statistical validity of the scales using EQS 6.1. Two CFA models were developed, one including tourists' value orientations, and the other including tourists' preferences toward management

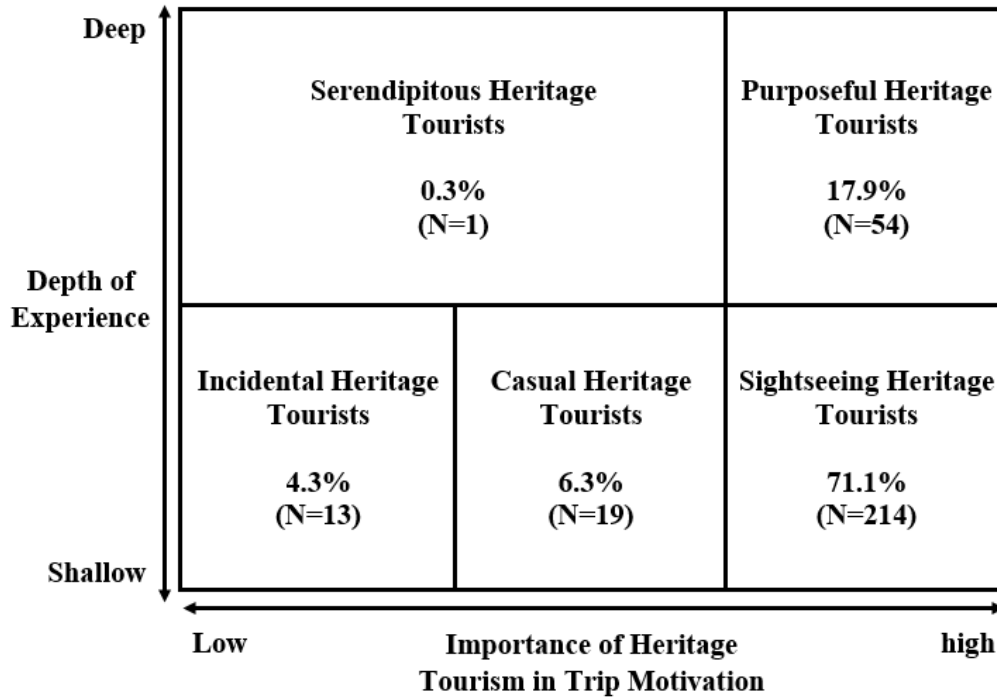


Figure 4.1. Five types of heritage tourists at Petra using McKercher's model

actions. The initial CFA models using all items yielded unsatisfactory results. According to the Lagrange Multiplier Test (LM-Test), a number of items were removed in subsequent iterations. Tables 4.3 and 4.4 show the indices for the final models. All fit indices for the final models were within acceptable values (Kline, 2011). The final models included items with no significant cross loadings across factors or correlated errors within items (Figure 4.2 and 4.3).

Table 4.3. *Fit indices for confirmatory factor analysis for value orientations scale*

Item	Initial CFA	Final CFA
Preservation (Non-use) Values		
Heritage resources are valuable to keep for future generations of humans	.37	-
We have to protect the heritage for humans in the future, even if it means reducing our standards of living today	.58	-
Even if I don't go to heritage sites, I can enjoy them by looking at books or seeing films	.48	-
I'm seeing heritage resources the next generation of children may not see, and that concerns me	.91	.65
I need to know that untouched, heritage sites exist	.89	.78
There are plenty of heritage sites that are not very nice to visit but I'm glad they exist	.79	.67
Use Values		
Heritage resources must be protected because I might want to use them for recreation and tourism in the future	.64	-
Heritage sites are important as economic resources	.80	.70
Heritage sites are valuable to me for my leisure	1.09	.89
Heritage sites are important for the use and enjoyment of the people	.98	-
Heritage resources are important to me because I use them for recreation and tourism	.72	.50
CFI	.885	.977
NNFI	.853	.957
SRMR	.069	.054
RMSEA	.073	.056
SB χ^2 (df)	184.676* (71)	15.404 (8)

*CFI = comparative fit index; NNFI = non-normed fit index; RMSEA = root mean square error of approximation; SB χ^2 = Satorra-Bentler Scaled Chi-Square; SRMR = standardized root mean square residual. *p < 0.05.*

Table 4.4. *Fit indices for confirmatory factor analysis for management actions preferences scale*

Item	Initial CFA	Final CFA
Indirect Management Actions		
Inform potential visitors of the disadvantages of problem areas and/or the advantages of alternative areas	1.18	1.18
Make access to problem areas more difficult and/or improve access to alternative areas	.35	-
Eliminate facilities or attractions in problem areas and/or improve facilities or attractions in alternative areas	.23	-
Charge higher fees to reduce the amount of use	.23	-
Encourage use outside of peak use periods	1.16	1.15
Charge higher fees during periods of high use and/or high impact potential	.33	-
Encourage certain behavior and practices that decreases the deterioration of the archaeological site	1.08	1.15
Teach national and international heritage site ethics or principles	.70	.71
Charge international visitors higher fees	.52	-
Direct management actions		
Impose fines	.28	-
Prohibit use of areas that have problems	.87	-
Limit number of visitors in problem areas	.97	.94
Limit length of stay in problem areas	.84	.87
Limit group size	1.01	-
Increase rangers	.80	.90
Prohibit particularly damaging practices that affect the archaeological site	.66	1.11
Seasonally close the areas that have problems	.76	-
Require reservations	.67	-
CFI	.460	.965
NNFI	.383	.940
SRMR	.142	.036
RMSEA	.141	.059
SB χ^2 (df)	928.437* (134)	32.530 (16)

Table 4.4. (Continued)

*CFI = comparative fit index; NNFI = non-normed fit index; RMSEA = root mean square error of approximation; SB χ^2 = Satorra-Bentler Scaled Chi-Square; SRMR = standardized root mean square residual. * $p < 0.05$.*

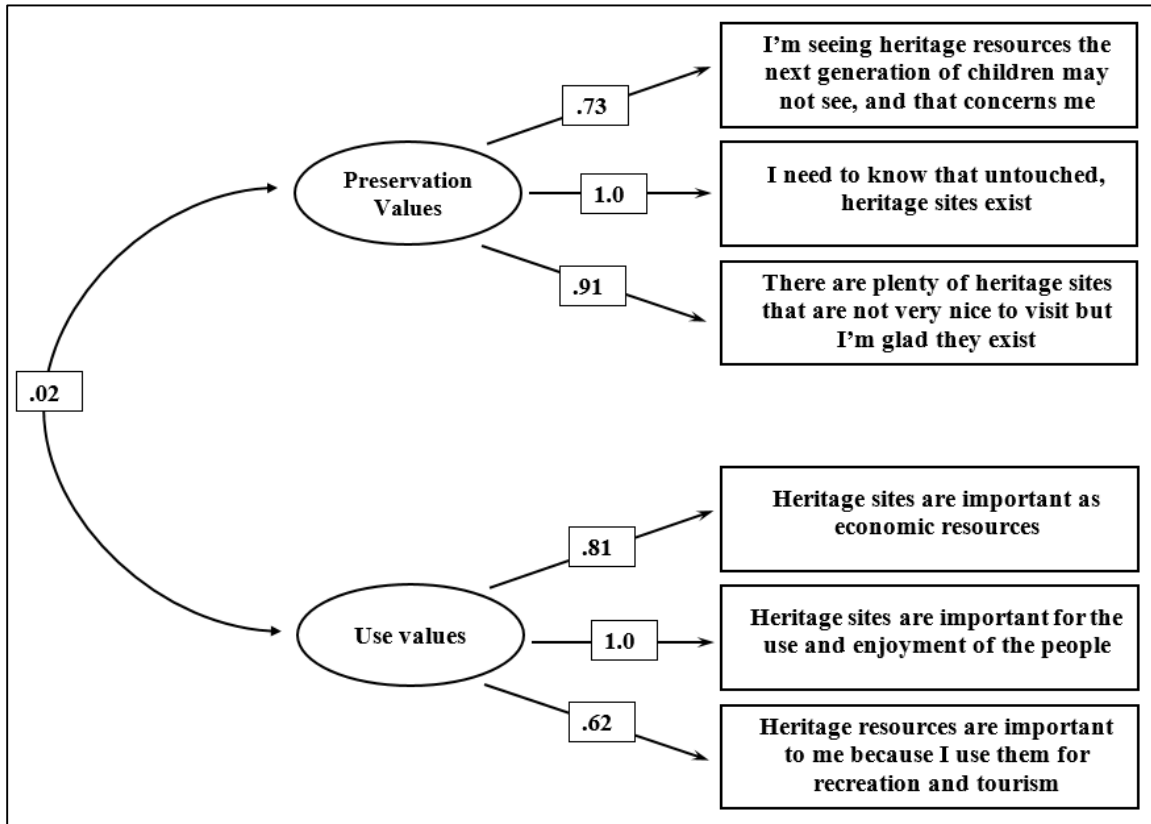


Figure 4.2 Final CFA model with associated factor loadings for value orientation scale

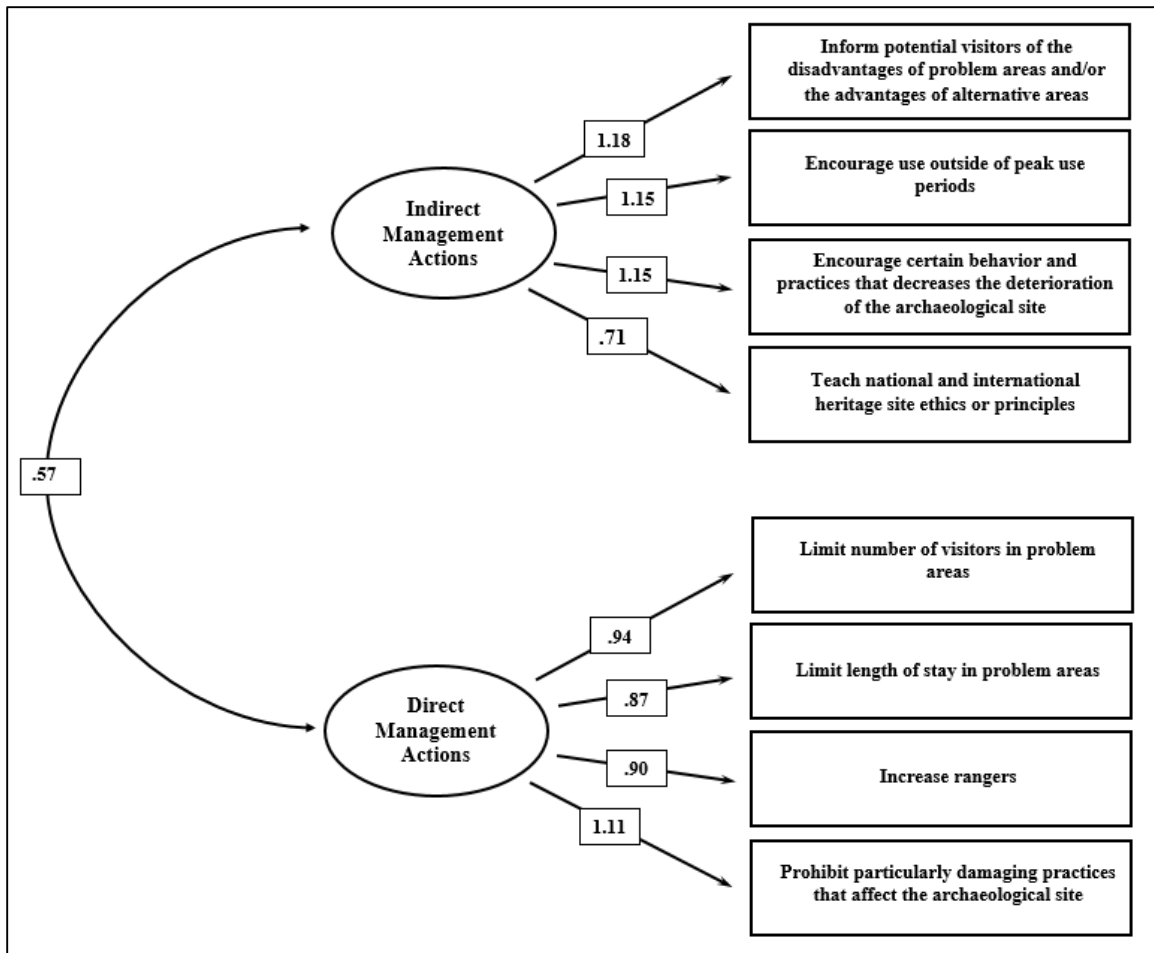


Figure 4.3 *Final CFA model with associated factor loadings for management actions preferences scale*

Four of McKercher's heritage tourists types were analyzed using a one-way ANOVA to determine whether they have similar or different value orientations toward Petra, and whether their preferences for management actions vary (The serendipitous heritage tourist was dropped from the analysis because of its very low sample size of 1). The results (Table 4.5) show overall significant differences in mean scores of preservation value ($F_{(df=3,296)}=75.02, p < .001$) and direct management actions ($F_{(df=3,296)}=22.95, p < .001$),

and no significant difference between tourists types with regard to use values and indirect management actions. Fischer's LSD post hoc test at the .05 level was used to determine where significant differences exist. In terms of preservation values, the results show that purposeful and sightseeing heritage tourists reported significantly high level of preservation value orientation than casual and incidental heritage tourists. Likewise, the results show that these types of tourists significantly support direct management actions more than indirect actions.

The effects of value orientations on the management actions preferences were investigated by using multiple regression analysis. Respondent scores on the heritage preservation and use values were used as independent variables, and respondent scores on the management actions preferences were used as dependent variables (Tables 4.6 and 4.7). In general, the results revealed that there is a significant positive relationship between preservation value orientation and tourists' management actions preferences (for indirect management actions $F=8.84; p < .05$ and for direct management actions $F=13.35; p < .001$). With a beta of .29 ($p < .05$), preservation value orientation affects preferences toward direct actions more than indirect actions. This finding means that whenever the preservation (non-use) value orientation increased, tourists supported both direct and indirect management, but they prefer direct actions more. The results also showed that there is no significant relationship between use value orientations and management action preferences. In addition, no significant relationship was found between value orientations and management action preferences when the tourists types were considered.

Table 4.5. A comparison of value orientations and management action preferences between McKercher's types of heritage tourists

	Mean (SD)				ANOVA	
	Purposeful heritage tourists (N=54)	Sightseeing heritage tourists (N=214)	Casual heritage tourists (N=19)	Incidental heritage tourists (N=13)	F	p
Heritage values*						
Preservation values	6.85 (.36) ^a	6.70 (.54) ^a	5.21 (1.13) ^b	4.77 (1.30) ^b	75.02	.000
Use values	4.14 (1.12)	4.86 (1.05)	4.84 (.96)	4.62 (.77)	1.33	.264
Management actions**						
Direct management actions	6.02 (.92) ^a	5.92 (.86) ^a	4.26 (.87) ^b	5.31 (1.11) ^b	22.95	.000
Indirect management actions	3.17 (1.04)	3.21 (.79)	2.84 (.76)	2.77 (.73)	2.11	.099

*Heritage values were measured by using a 7-point scale range from 1 (support disagree) to 7 (strongly agree)

**Management actions were measured by using a 7-point scale range from -3 (prefer direct management actions) to +3 (prefer indirect management actions).

Means in the same row that do not share at least one superscript differ at $p < .05$. Groups mean differences were determined by Fischer's LSD post hoc test.

Table 4.6. Results of multiple regression analysis (Effect of value orientations on indirect management action preferences)

DV IVs	Indirect management actions						R ²	F
	Preservation values			Use values				
	B (SE)	β	t	B (SE)	β	t		
Purposeful heritage tourists (N=54)	.60 (.28)	.27	1.66	-.41 (.15)	-.34	-1.73	.22	1.12
Sightseeing heritage tourists (N=214)	.29 (.07)	.28	1.37	-.07 (.05)	-.08	-1.22	.08	2.21
Casual heritage tourists (N=19)	-.15 (.24)	-.22	-.62	.04 (.32)	.04	.12	.04	.30
Incidental heritage tourists (N=13)	-.05 (.37)	-.05	-.13	.19 (.41)	.18	.46	.02	.12
General model (N=301)	.22 (.06)	.22	3.75*	-.12 (.05)	-.16	-1.46	.05	8.84*

* $p < .05$

Table 4.7. Results of multiple regression analysis (Effect of value orientations on direct management action preferences)

DV IVs	Direct management actions						R ²	F
	Preservation values			Use values				
	B (SE)	β	t	B (SE)	β	t		
Purposeful heritage tourists (N=54)	.65 (.28)	.29	1.35	-.47 (.15)	-.38	-1.12	.24	1.41
Sightseeing heritage tourists (N=214)	.35 (.07)	.33	1.93	-.15 (.06)	-.17	-1.61	.11	2.73
Casual heritage tourists (N=19)	1.3 (.20)	.22	.64	.03 (.26)	.04	.125	.07	.55
Incidental heritage tourists (N=13)	.46 (.34)	.46	1.33	-.01 (.37)	-.01	-.03	.21	1.32
General model (N=301)	.34 (.07)	.29	5.15*	-.08 (.05)	-.09	-1.55	.08	13.35**

* $p < .05$, ** $p < .001$

Discussion and Conclusion

In the context of value orientations of the tourists, results revealed that most tourists at Petra are preservation value oriented, that they consider preservation of archaeological resources at Petra to be a high priority. The results also showed the types of heritage tourists suggested by McKercher (2002) are not homogeneous in their preservation value orientation. Specifically, their preservation value orientations differ based on the importance level of heritage tourism in trip motivations. Purposeful and sightseeing tourists, whose main reason for travel is to visit heritage sites, placed emphasis on preservation values more than casual and incidental heritage tourists. These results parallel other recent research that found a significant relationship between value orientation and tourists' motivations (Li & Cai, 2011; Woosnam et al., 2009).

Likewise, the importance level of heritage tourism in tourists' trip motivation had significant effect on preferences toward management actions. The results showed significant differences between the four types of heritage tourists regarding their preferences for direct management actions. Petra tourists whose main reason for their travel is heritage tourism prefer direct management actions rather than tourists whose heritage tourism does not play an important role in their trip motivations. Consequently, whenever the importance level of heritage tourism increases in tourists' trip motivation, the preference toward direct management actions increases. This parallels the study by Hall, Seekamp and Cole (2010) that found that people who are highly motivated to visit wilderness areas are more supportive of use restriction regulations than people with less motivation. Also, these findings confirmed the study by Borrie, Freimund, Davenport and

Manning (2001) that found there is strong relationship between visitor motivation and support for proposed management actions.

The literature generally indicates that indirect management actions are typically more supported because they have less impacts on tourists' experiences and freedom and they are more cost effective than direct actions (McCool & Christensen, 1996). However, Anderson and Manfredo (1986) found that visitors might support both direct and indirect management actions, but they prefer direct actions when overuse is considered as a problem. Findings of our study supplement the literature by showing that tourists tend to support direct actions more. The notable support for direct actions by those tourists with a tendency towards preservation values indicate that tourists recognize the importance and uniqueness of the heritage resources at Petra. They understand the priority of resource protection, and that overuse of the site may lead to further degradation. Therefore, they are relatively willing to make personal trade-offs with their experience and freedoms to protect Petra. They are inclined to support restrictive management actions. This is unlike the study results by Borrie, Freimund, Davenport and Manning (2001) who found that visitors to Yellowstone National Park do not support restrictive actions when they reduce the quality of their experience, despite, those visitors support for preservation of wildlife. Petra tourists who support both preservation and direct management actions can be likened to the visitor of primitive settings who prefer direct management actions to improve and preserve the resource conditions (Anderson & Manfredo, 1986; Lawson & Manning, 2002).

Traditionally, heritage managers have avoided dealing with the tourists and they have not wanted to recognize them. Therefore, many managers adopted a "leave us alone"

view that “considered tourists in their role as a necessary evil” (Timothy & Boyd, 2003, pp. 156–157). But, our findings indicate that heritage tourists understand the importance of heritage resources and the priority of preserving them. Therefore, heritage managers who view tourists as the main source of impacts should change their perspective, and try to understand their tourists to enhance their awareness toward heritage resources, and involve them in the decision making process.

The results confirmed the literature (Borrie et al., 2002) in showing that tourists’ preservation value orientation could be an important predictor of tourists’ support for or opposition to management actions. However, it was found that preservation value orientation emerged a stronger predictor for direct management actions more than indirect management actions. Also, it was found that being a certain type of heritage tourists does not affect that relationship between value orientation and management action preferences. In other words, whether tourists have a deep or shallow experience and whether heritage tourism plays an important role or not in their trip motivation, it will not change the relationship between their value orientations and management action preferences.

From a management implications perspective, the results discussed above provide Petra managers with information for the appropriate management actions that could be implemented in the park. For instance, managers might be heartened to know that use of the necessary type of management action, whether it is direct or indirect, would be supported by tourists. In other words, managers should feel comfortable to apply some relatively tight restrictions on use, especially at fragile areas because the majority of tourists prefer direct management actions.

The present study was limited to explore the relationship between value orientations and management action preferences among the tourists, more research is needed on how value orientations might affect tourists' behavior, and the relationship between value orientations, motivation and tourists behavior. Also, this article was limited to a study of use and preservation values; extended research is needed in future that include different values for heritage sites.

The importance of values for heritage and heritage tourism management is uncontested. Nevertheless, scant empirical research has been conducted to understand how the values tourists assign to heritage sites affect their management action preferences. Thus, this article sought to understand the value orientations of tourists at Petra, and to explore how value affect their preferences toward management actions. In addition, the article examined the heterogeneity of heritage tourists by studying the difference between four heritage tourists types suggested by McKercher (2002). It was found that the majority of tourists at Petra have preservation value orientations more than use values, and they prefer direct management actions rather than indirect actions. This reflects their awareness of the importance of Petra's archaeological resources, and their understanding of the fragility and non-renewability of these resources. The study also found that there are differences between the four types of heritage tourists regarding their value orientations and management actions preferences. The greater the importance of heritage tourism in a tourist's trip motivation, the greater the tourist's preservation value orientation and support for direct management actions.

Involving different stakeholders (e.g., tourists) in decision-making processes by understanding the values they assign to heritage resources is important to achieving sustainability in heritage tourism because values provide the foundation for how stakeholders relate to resources. Most literature in heritage tourism and heritage management has focused on understanding and involving stakeholders other than tourists, who have been mostly ignored in managing heritage attractions. This study extended the body of knowledge on heritage tourism management by understanding tourists' value orientations at a heritage site and the effect of these orientations on preferences toward management actions.

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CHAPTER FIVE

DISSERTATION CONCLUSION

Although sustainability of heritage tourism has become a major concern from the perspectives of both academics and practitioners, the majority of research and studies have tended to understand the cultural and educational issues of heritage tourism rather than focusing on the application of sustainability in a practical context (Fyall & Garrod, 1998; Millar, 1989). To achieve sustainability of heritage tourism, heritage sites should be managed effectively in a way that ensures preservation in heritage resources and provides quality experiences to the tourists (Glasson et al., 1995; McArthur & Hall, 1993, 1996).

Traditionally, heritage tourism planning and management relied on a top-down, professional-led approach that ignores the interests of different stakeholders (e.g., heritage tourists) in heritage attractions (C. M. Hall & McArthur, 1993, 1996; Timothy & Boyd, 2003). Furthermore, strategies for heritage tourism management have conventionally focused on the supply side (i.e., the resource) and ignored the demand side (i.e., the tourists) (Timothy & Boyd, 2003). Recently, it was recognized that involving tourists in the management process is a key element to achieve sustainability; therefore, the global trends in heritage tourism are now moving forward from a product-led approach that underlies exhibits and education, to a more tourist-oriented approach that focuses on consumer preferences and quality of personal experiences (Apostolakis & Jaffry, 2005). Indeed, sustainability in heritage tourism cannot be achieved without involving heritage tourists and understanding their experiences at heritage attractions. Both highly satisfied tourists

and involved stakeholders are a key to the long-term public support for the protection of heritage sites in general and the funding of these sites as a social priority.

It was suggested by Manning and his colleagues (2011) that sustainability can be applied through development and implementation of contemporary indicators and standards-based frameworks such as Limits of Acceptable Change (LAC) (Stankey et al., 1985), Visitor Impact Management (VIM) (Kuss et al., 1995), and Visitor Experience and Resource Protection (VERP) (National Park Service, 1997). The major purpose behind all of these frameworks is to balance between the protection of resources and providing quality experiences to the visitors. In addition, all of these frameworks depend on three main elements shown in Figure 5.1. First, management objectives and associated indicators and standards are formulated. Second, indicators are monitored to ensure that standards are maintained. Finally, management actions are implemented to maintain indicators within the designated standards. These frameworks have been developed and widely applied to nature-based parks, rather than heritage sites.

Generally, the main objective of this dissertation was to understand tourists and their experiences at Petra Archaeological Park (Petra). The series of articles included in this dissertation were intended to address the three main elements of these management frameworks. Specifically, this research presented studies intended to help formulate empirical, science-based, tourists-informed indicators and crowding-related standards for the tourism experience at Petra, and monitor these standards. Also, tourists' support for alternative management strategies was addressed.

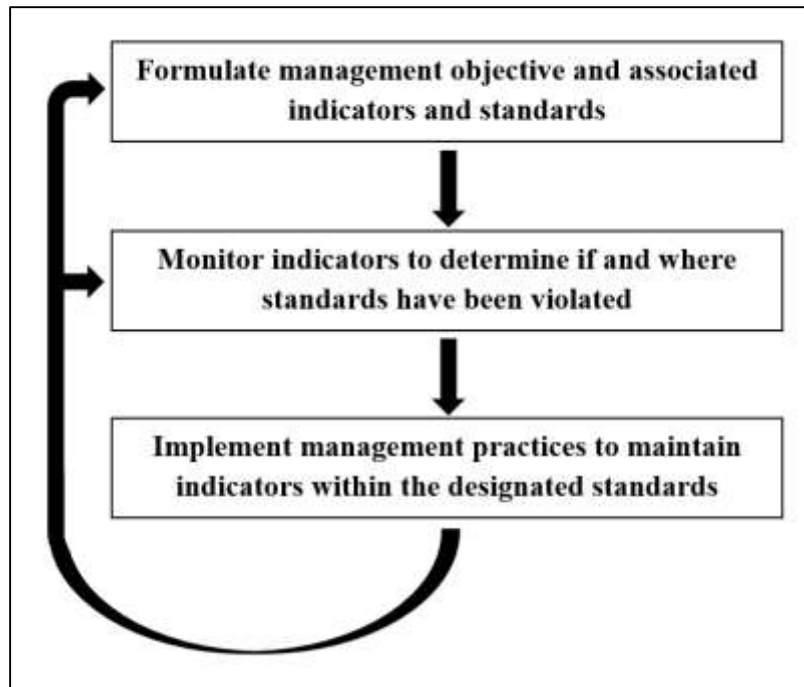


Figure 5.1. *Main elements of indicators and standards-based frameworks (adapted from Manning, 2014)*

Summary of the Major Findings

The first article in this dissertation aimed to apply the concept of indicators to Petra. It tried to understand the tourists and their experience at Petra and how that experience might be managed to promote the sustainability of heritage tourism. Findings from this article suggested that cultural and natural scenic value, crowding, attraction accessibility, vendor persistence, and odor of animals waste are potential indicators for the tourism experience at Petra. Variables that are manageable, measurable, reliable, related and sensitive to tourist use, and significant in defining the quality of tourism experience often make the best indicators (Manning, 2007, 2011; National Park Service, 1997). Although the findings of this article suggested important indicators for the tourists experience at

Petra, it remained uncertain what were the range of the minimum acceptable conditions for each indicator. Thus, indicators found in this article provided an empirical basis for the second article of this dissertation.

The second article focused on a crowding indicator and applied normative theory to gather information to formulate empirical, tourists-based standards for crowding at Al-Siq and Al-Khaznah (The Treasury) in Petra. However, because of the heterogeneity of heritage tourists, this article employed McKercher's (2002) model to segment heritage tourists at Petra and examined and compared crowding standards for four types of heritage tourists suggested by the model. In general, results showed that tourists' acceptability levels go down with an increasing number of tourists. The maximum acceptable number of tourists was 48 tourists at one time at Al-Siq, and 135 tourists at one time at Al-Khaznah (The Treasury). However, tourists crowding standards are not violated at both locations because all evaluative dimensions (except the preference dimension) were below the number of tourists typically seen. Results indicated that tourists who are highly motivated to visit heritage sites (i.e., purposeful and sightseeing heritage tourists) had the most restrictive acceptable number of tourists at the park. The normative standards formulated in this article provided guidance to help manage crowding at Petra. However, it remained uncertain what management actions would be supported by tourists if these standards are violated. Therefore, this step was addressed in the third article.

Generally, the third article aimed to explore tourists' preferences toward management actions at Petra. However, given that heritage tourists are not homogeneous, and tourists' values might affect their support for or opposition of management actions,

this article examined values that tourists assign to Petra and how these values influence their preferences toward management actions. Results revealed that most tourists at Petra were preservation value oriented, and they consider preservation of the archaeological resources to be a high priority. Also, they support direct management actions more than indirect actions. Furthermore, it was found that tourists whose main reason for travel is to visit heritage sites (i.e., purposeful and sightseeing heritage tourists) placed emphasize on preservation values and supported direct management actions rather than indirect actions.

Management Implications

The main management implication of this study lies on providing Petra managers information that can help in applying one of indicators and standards-based frameworks. The potential indicators suggested for the tourism experience at Petra were cultural and natural scenic value, crowding, attraction accessibility, vendor persistence, and odor of animals waste. These variables show the key elements in the park to be focused on in the management process to ensure high quality experience for tourists. Managers at Petra can use these variables as starting points to select the final list of indicators that are integrative, reliable, measurable, and significant to managers, tourists, and other stakeholders (Manning, 2007, 2011; National Park Service, 1997). Positive indicators such as cultural and natural scenic value of the park can be used in the marketing process to attract more tourists to visit the park. It was recognized from the findings of this research that Petra provides the tourists a different experience that consist of a unique combination between cultural and natural heritage features. Therefore, the park management should consider this kind of combination in marketing strategies when promoting the site.

Given that crowding was an important factor in the tourist experience in Petra, this research has provided the acceptable limits of tourists numbers that managers should allow at Al-Siq and Al-Khaznah (The Treasury). Therefore, these standards can be used to apply the concept of carrying capacity at the park by applying one of management frameworks described earlier. These frameworks require that number of tourists be monitored. If monitoring reveals that tourist numbers violate the acceptable limits, then carrying capacity has been exceeded and management action should be implemented.

Understanding the different types of heritage tourists who visit Petra, their trip motivations, depth of experience that they seek, and their normative standards can help tourism managers and planners to better address the needs of their customers. For instance, this research revealed that the majority of tourists at Petra were sightseeing heritage tourist whose main reason for their trip was to visit Petra but they seek a shallow entertainment-based experience. These tourists has lower acceptance of tourists numbers than purposeful heritage tourists whose main reason of their trip was to also visit Petra, but they were seeking to develop a deep understanding about Petra and its heritage. In effect, there is no one solution suitable for everyone, but by understanding these differences, managers can maximize the opportunities and provide quality experience to match different types of tourists. One approach for that could be time zoning (Jaakson, 1985; Lime & Stankey, 1971) where a time schedule is applied to define how many tourists might enter the park in a certain area at a specific time. Informing tourist of these schedules will allow them to match their desired conditions, thereby increasing the possibility to be satisfied.

Applying indicators and standards-based frameworks require involving different stakeholders, including tourists themselves, in determining the appropriate management actions to take (National Park Service, 1997). This research revealed that tourists at Petra were supportive of both direct and indirect management actions, and they tend to support direct actions more. This provides a broad choice of management strategies for managers, and it gives them the green light to implement some restrictions on use, especially at fragile and overused areas. However, because of the majority of tourists at Petra were preservation value oriented and they understand the fragility of the resources, managers should focus more on the impacts caused other factors such as local vendors who break rock from the monuments and sell them to the tourists as souvenirs.

This research has provided Petra managers with additional variables and techniques that can be considered in managing visitors at the park. Formulating tourists-based indicators and standards offer a quantitative measurable tool of the experiential conditions that should be maintained for current and future generations. Furthermore, involving tourists in the decision-making process and maintaining their normative standards helps ensure their support for preserving the resources for the future generations, and achieving sustainability.

Theoretical Implications

Normative theory has been widely used in nature-based outdoor recreation areas to formulate indicators and standards to manage visitor experiences. Generally, the present research can be considered one of the few projects that apply social norm and concepts of indicators and standards to heritage sites. Furthermore, it addressed some issues that have

received limited empirical attention. First, given that tourists and their experiences are important in achieving sustainability in heritage tourism, this research tried to extend the body of knowledge on heritage tourism management by understanding tourists' experiences and values, and involving tourists in planning and decision making processes. Second, this research applied the normative approach to a heritage tourism attraction by formulating indicators and standards. Finally, it measured the norms of various types of heritage tourists. Even at the local level, this research was the first research in Jordan that consider the tourists and their experience in managing Petra Archaeological Park. Most of the studies that have been done regarding visitors management at Petra ignored the tourists dimension, and followed the traditional approach of heritage management.

The research described in this dissertation is one the few studies that explore the relationship between tourists' trip motivation, their depth of experience, and their normative crowding standards. This research has merged McKrecher's model of heritage tourists which was developed in the tourism field, with the normative indicators and standards concepts which were developed in the field of environmental management and outdoor recreation.

Personal Reflections

While reflecting on the experience of writing this dissertation, I came to realize that I really enjoyed this process. I am the type of person who loves to learn and always seek to obtain more knowledge in and out of the classroom. The dissertation process was like a journey in which I have developed my independent learning. I could simply say that every aspect of the study has taken me into different but challenging experiences. Part of these

experiences had been easygoing and exciting, others I have gone through with much difficulties.

The first challenge I started with was the coming up with a researchable topic. Because my bachelor and master degrees were in conservation and management of cultural resources, I was eager to find a topic that combine preservation of cultural resources and tourism. The contradictory nature of the two fields made things difficult for me. After reading a lot of resources about tourism management and planning I recognized that studying visitor management is the best way to link and balance between the two fields. During the Tourism Planning course, which is offered by the department, I wrote a literature review as class final paper about the concept of carrying capacity and its history, and how it was developed through the years. Writing this paper and reading Michael C. Hall and Simon McArthur's book *Heritage Management in Australia and New Zealand: The Human Dimension*, gave me the first hint as to what to think and what to look for. The main aim of this book is to highlight the importance of tourists' experience in managing heritage sites.

During the same year, the UNESCO World Heritage Committee published a management evaluation report for the Petra World Heritage Site. One of the Committee recommendations was to develop a visitor management system for the park. From that time, I decided to do my research on visitor management at Petra. My aim was to help my country, and present some potential solutions to Petra management that might help to manage visitors at the park.

Indeed, I began researching and reading more and more to overcome the second challenge in my study, which was identifying the research problem and developing an appropriate research methodology, and then writing up my research proposal. In this phase, I met Dr. Jeffrey Hallo in the Research Method course. Dr. Hallo guided me to read about Visitor Experience and Resource Protection (VERP) framework, which is used to manage visitors in the National Park Services. So, I wrote my first research idea which was aiming to apply VERP by applying its nine elements on Petra. Later, I recognized that idea is very broad and shallow, and I need to go more deep in the literature to get a better idea. When I read Robert Manning's book *Parks and Carrying Capacity* I found that the main elements of VERP are formulating indicators and standards of quality. So I had chosen to do my research on indicators and standards of quality. With guidance and help from Dr. Hallo, I prepared by research proposal with the research instrument, and then start the data collection phase.

The data collection phase was very interesting and challenging. I must admit that I acquired valuable primary research experience during conducting this phase. It was a unique experience, where I have been engaged in a research of such a scale that involved primary data collection and analysis in an individual manner. I have learned the most popular qualitative and quantitative research methods and I had a practical experience of conducting a general survey through administering questionnaires.

The analysis and writing process was the most interesting phase in my research. I learned a lot of data analysis skills during this phase. Transcribing the interviews was very boring, but I like it. I learned how to analyze the data and code it. The quantitative data

analysis was also interesting. I learned how to apply what I learned from my statistics classes.

Finally, I must admit that without my adviser, Dr. Jeffrey Hallo, I would not finish this dissertation. I really appreciate his guidance, patience, and endless support and help.

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APPENDICES

Appendix A

Qualitative Interview Questions



CLEMSON UNIVERSITY
DEPARTMENT OF PARKS, RECREATION
AND TOURISM MANAGEMEN

Petra Archaeological Park: Experiential Indicators for Sustainable Heritage Tourism

Guiding Questions for Semi-Structured Interviews of Petra Archaeological Park Tourists

2014

Date: _____

Interview No.: _____

Time: _____

Interviewer Script (italicized text):

Hi, my name is Mohammad Alazaizeh. I'm from the Clemson University in the USA. We're helping the Petra Archaeological Park gather information to manage visitors in the park. Could I ask you a few questions about your experience while in the park? Participation is voluntary and your name will not be asked.

If No: OK. Thank you for your time. Have a good day.

If Yes: It should take about 20 minutes, and I would like to tape record our conversation so I can remember it later on. Is this OK with you? The tape recordings will not be used for anything else other than this study.

Type and subtype of Petra Archaeological Park Visitors:

- Same-day domestic visitor.
- Overnight domestic visitor.
- Same-day non-Jordanian visitor (Nationality: _____).
- Overnight non-Jordanian visitor (Nationality: _____).

- Guided Individual.
- Non-Guided Individual.
- Guided Group.
- Non-Guided Group.

1. How long did you spend in Petra Archaeological Park today?
2. Is this your first time in the park?
 - a. If first time visitor:
 - What did you expect your trip in Petra Archaeological Park to be like?
 - How did you know what to expect?
 - Was your trip better or worse than you expect?
 - b. If repeat visitor:
 - How many times have you been in Petra Archaeological Park?
 - When was your first trip in the park?
 - How has your experience in Petra Archaeological Park changed over the years?
3. How far into the park did you go today? How did you decide on how far into the park you would go?
4. What are the three things you enjoyed most about your time in Petra Archaeological Park today?
5. What are the three things you enjoyed least about your time in Petra Archaeological Park today?
6. What is the most important thing in affecting the quality of your experience today?
7. Did you move through the Siq (The entrance of the archaeological site) walking, riding a horse, or by carriage? Why did you choose that? How did that affect the quality of your experience in the park?
8. Was the quality of your experience affected by the number of people around you? If so, how?
9. Did you feel hurried at any point during your visit? If so, why?
10. Do you think having a limit on the number of visitor is a good idea for Petra Archaeological Park?
11. What do you think of the overall way Petra Archaeological Park is managed?
12. Was there anything about the management of Petra Archaeological that added to or detracted from your visit?
13. Based on your observations, do you think that the type or number of visitors in Petra Archaeological Park is having negative effects on the archaeological resources in the park?
14. Based on your observations, do you think that the type or number of visitors in Petra Archaeological Park is having any negative effects on the quality of the visitor experience?
15. Is there anything else you would like to tell me about your experience in or around the park?

Appendix B

Quantitative Research Instrument



CLEMSON UNIVERSITY
DEPARTMENT OF PARKS, RECREATION
AND TOURISM MANAGEMENT

Tourists Crowding at Petra Archaeological Park

Questionnaire for Petra Archaeological Park Tourists

2014

Day and Date:

Temperature:

My name is Mohammad Alazaizeh. I am a doctoral student from Clemson University, USA. I am conducting a survey as a part of my doctoral research on tourism at Petra Archaeological Park. I would highly appreciate if you could take a few minutes to fill in this questionnaire.

Your response will be very valuable to our understanding of tourism at the park. This survey takes about 10 minutes to complete.

Thank you.

SECTION A: YOUR VISIT TO PETRA ARCHAEOLOGICAL PARK

1. Have you been in Petra Archaeological Park before?

- No, this is the first time.
- Yes, this is the _____ time.

2. How many days will you visit Petra Archaeological Park on this trip? _____.

3. Which of the following best describes you: (Please choose one answer)

- Guided Individual.
- Non-Guided Individual.
- Guided Group, how many people with you _____?
- Non-Guided Group, how many people with you _____?

4. How satisfied or dissatisfied were you with the following things in Petra?

	Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied
Your visit or experience	-2	-1	0	1	2
Overall management of the park	-2	-1	0	1	2
Protection of archeological sites	-2	-1	0	1	2

5. Which method of travel did you use in Petra? (Please choose one answer)

- Ride (e.g., horse, donkey, carriage).
- Hike.
- Both.

6. How did you get to Petra region? _____

7. Which category best describes your experience in Petra? (Please choose one answer)

- Mostly sightseeing/photography or seeing interesting and famous monuments.
- A chance to learn a little about Petra archaeological heritage.
- A chance to learn a lot about Petra archaeological heritage.
- A chance to develop a deep understanding of Petra archaeological heritage.

8. How important were the following factors in your decision to travel to Petra?

	Unimportant/ Did not influence	Somewhat unimportant	Neither important nor unimportant	Somewhat important	Important/ Main reason
To learn something about Petra's heritage or culture	1	2	3	4	5

9. Please indicate your level of agreement with the following statements

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
Heritage resources are valuable to keep for future generations of humans	1	2	3	4	5	6	7
Heritage resources must be protected because I might want to use them for recreation and tourism in the future	1	2	3	4	5	6	7
We have to protect the heritage for humans in the future, even if it means reducing our standard of living today	1	2	3	4	5	6	7
Heritage sites are important as economic resources	1	2	3	4	5	6	7
Even if I don't go to heritage sites, I can enjoy them by looking at books or seeing films	1	2	3	4	5	6	7
Heritage sites are valuable to me for my leisure	1	2	3	4	5	6	7
Heritage sites are important for the use and enjoyment of the people	1	2	3	4	5	6	7
I'm seeing heritage resources the next generations of children may not see, and that concerns me	1	2	3	4	5	6	7
Heritage resources are important to me because I use them for recreation and tourism	1	2	3	4	5	6	7
I need to know that untouched, heritage sites exist	1	2	3	4	5	6	7
There are plenty of heritage sites that are not very nice to visit but I'm glad they exist	1	2	3	4	5	6	7

10. Please indicate the extent to which you think the following issues are problems at Petra. (Please circle one number for each issue)

	Not a Problem	Small Problem	Big Problem	Do Not Know
Waiting time to buy a ticket	1	2	3	DK
Orientation, information, and interpretive services	1	2	3	DK
Number and type of visitor facilities	1	2	3	DK
Crowding	1	2	3	DK
Visitor numbers	1	2	3	DK
Group sizes	1	2	3	DK
Visitor behavior and activities	1	2	3	DK
Impacts to historical and natural resources	1	2	3	DK
Park management activities	1	2	3	DK
Quality and condition of archaeological resources	1	2	3	DK
Presence of litter	1	2	3	DK
Walking time from parking area to attraction site	1	2	3	DK
Vandalism	1	2	3	DK
Presence of graffiti	1	2	3	DK
Visitor-caused noise	1	2	3	DK
Parking availability	1	2	3	DK
Animal waste	1	2	3	DK

SECTION B: CROWDING AT Petra Archaeological Park

11. Do you feel that Petra is currently being used beyond its capacity? (Please choose one answer)

- No.
- Yes, in limited areas.
- Yes, in most areas.
- Yes, throughout the park.

12. How did the number of people you saw during your visit to the park compare with what you expected to see? (Please choose one answer)

- A lot less than you expected.
- A little less than you expected.
- About what you expected.
- A little more than you expected.
- A lot more than you expected.
- You did not have any expectation.

13. We would like to know how many people you think could use the the Sig at Petra without you feeling too crowded. To help judge this, we have a series of photographs that show different numbers of people in the Sig. Please look at the photographs on Poster 1 – The Sig.

13.a. Please rate each photograph on Poster 1 – The Sig by indicating how acceptable you think it is based on the number of people shown. A rating of -4 means the number of people is “very unacceptable”, and a rating of +4 means the number of people is “very acceptable”. (Circle one number for each photograph)

Next Page

	Very Unacceptable					Very Acceptable			
	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 1	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 2	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 3	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 4	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 5	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 6	-4	-3	-2	-1	0	+1	+2	+3	+4

13.b. Which photograph shows the level of use you would prefer to see?

Photo Number: _____

13.c. Which photograph shows the highest level of use that the management at Petra should allow? In other words, at what point should people be restricted from entering the Siq? (If use should not be restricted at any point represented by the photographs, or not restricted at all, you may indicate that.)

Photo Number: _____

OR

None of the photographs show a high enough level of use to restrict people from entering the Siq.

OR

Use should not be restricted in the Siq.

13.d. Which photograph looks most like the number of people you typically saw in the Siq today?

Photo Number: _____

14. We would like to know how many people you think could use the Al-Khaznah Plaza (the Treasury) at Petra without you feeling too crowded. To help judge this, we have a series of photographs that show different numbers of people in the Al-Khaznah Plaza (the Treasury). Please look at the photographs on Poster 2 – Al-Khaznah Plaza.

14.a. Please rate each photograph on Poster 2 – Al-Khaznah Plaza by indicating how acceptable you think it is based on the number of people shown. A rating of -4 means the number of people is “very unacceptable”, and a rating of +4 means the number of people is “very acceptable”. (Circle one number for each photograph)

	Very Unacceptable					Very Acceptable			
	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 1	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 2	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 3	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 4	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 5	-4	-3	-2	-1	0	+1	+2	+3	+4
Photo 6	-4	-3	-2	-1	0	+1	+2	+3	+4

14.b. Which photograph shows the level of use you would prefer to see?

Photo number: _____

14.c. Which photograph shows the highest level of use that the management at Petra should allow? In other words, at what point should people be restricted from visiting Al-Khaznah Plaza? (If visit should not be restricted at any point represented by the photographs, or not restricted at all, you may indicate that.)

Photo Number: _____

OR

None of the photographs show a high enough level of use to restrict people from visiting Al-Khaznah Plaza.

OR

Visiting should not be restricted in Al-Khaznah Plaza.

14.d. Which photograph looks most like the number of people you typically saw at Al-Khaznah Plaza today?

Photo Number: _____

14.e. Which photograph shows the level of use that is so unacceptable that you would no longer visit Al-Khaznah Plaza (If none of the photos represent this condition, you may indicate that).

Photo number: _____

OR

None of the photographs are so unacceptable that I would no longer visit Al-Khaznah Plaza.

15. How crowded did you feel at the following areas (Please refer to the map if needed):

	Not at All Crowded		Slightly Crowded		Moderately Crowded			Extremely Crowded		Do Not Know
Visitor Center	1	2	3	4	5	6	7	8	9	DK
The <u>Siq</u>	1	2	3	4	5	6	7	8	9	DK
The <u>Al Khazna</u> (Treasury)	1	2	3	4	5	6	7	8	9	DK
The Theatre	1	2	3	4	5	6	7	8	9	DK
Royal Tombs	1	2	3	4	5	6	7	8	9	DK
The <u>Nymphaeum</u>	1	2	3	4	5	6	7	8	9	DK
The Byzantine Church	1	2	3	4	5	6	7	8	9	DK
Colonnaded Street	1	2	3	4	5	6	7	8	9	DK
Great Temple	1	2	3	4	5	6	7	8	9	DK
<u>Qasr Al Bint</u>	1	2	3	4	5	6	7	8	9	DK
The Monastery	1	2	3	4	5	6	7	8	9	DK

16. Please indicate how much you support or oppose the following visitor management strategies.

	Strongly oppose	Oppose	Somewhat oppose	Neither oppose or support	Somewhat support	Support	Strongly support
Impose fines	1	2	3	4	5	6	7
Inform potential visitors of the disadvantages of problem areas and/or advantages of alternative areas	1	2	3	4	5	6	7
Prohibit use of areas that have problems	1	2	3	4	5	6	7
Limit number of visitors in problem areas	1	2	3	4	5	6	7
Limit length of stay in problem areas	1	2	3	4	5	6	7
Make access to problem areas more difficult and/or improve access to alternative areas	1	2	3	4	5	6	7
Eliminate facilities or attractions in problem areas and/or improve facilities or attractions in alternative areas	1	2	3	4	5	6	7
Charge higher fees to reduce the amount of use	1	2	3	4	5	6	7
Limit group size							
Encourage use outside of peak use periods	1	2	3	4	5	6	7
Charge higher fees during periods of high use and/or high-impact potential	1	2	3	4	5	6	7
Increase rangers	1	2	3	4	5	6	7
Prohibit particularly damage practices that affect the archaeological site	1	2	3	4	5	6	7
Encourage certain behavior and practices that decrease the deterioration of the archaeological site	1	2	3	4	5	6	7
Teach national and international heritage site ethics or principles	1	2	3	4	5	6	7
Seasonally close the areas that have problems	1	2	3	4	5	6	7
Require reservations	1	2	3	4	5	6	7
Charge international visitors higher fees	1	2	3	4	5	6	7

SECTION C: GENERAL INFORMATION







What is your Nationality? _____ In what year were you born? _____

Please indicate your sex below

Male Female







Appendix C

Al-Siq Poster

AL SIQ		السيق	
	Photo (1): 0 Persons		Photo (2): 17 Persons
	Photo (3): 34 Persons		Photo (4): 51 Persons
	Photo (5): 68 Persons		Photo (6): 85 Persons

Appendix D

Al-Khaznah (The Treasury) Poster

AL KHAZNAH (TREASURY)		الخبزنة	
	Photo (1): 0 Persons		Photo (2): 56 Persons
	Photo (3): 112 Persons		Photo (4): 168 Persons
	Photo (5): 224 Persons		Photo (6): 280 Persons