



Research Article

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Evaluation of Visitor Management and its Impact on Visitor Experience and Satisfaction at Archaeological Sites in Jordan (Case Study: Jerash)

Ranea Mohammed Qaddhat^{1*}

Hanaa Abedlkader Fayed²

Ghada Mohamed Wafik²

¹Department of Tourism Management,
Faculty of Tourism and Hospitality,
University of Jordan/Aqaba, Jordan

²Department of Tourism Studies,
Faculty of Tourism and Hotels management,

Fayoum University, Egypt
*Corresponding Author

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Abstract

This study aims to assess visitor management at the Jerash archaeological site in Jordan. It also sheds light on their approaches in guiding and managing visitors at the site, and to discover the effectiveness of adopting indirect approaches (soft strategies) by comparison to using direct approaches (hard strategies). This study examines the effects of visitor management practices on the level of experience quality for visitors, as well as on their satisfaction. The primary data has been obtained from various tools, mainly a survey questionnaire. The study has used descriptive analysis and linear regression. Moreover, the researcher has used site observation to assist in supporting, or refuting, the findings. The study has revealed an effect of visitor management on the visitor quality of experience and visitor satisfaction. The study has come up with many recommendations that will improve the effectiveness of visitor management at the Jerash site.

Keywords: Visitor, Management, Experience, satisfaction, Jerash, Jordan

1. Introduction

Today, tourism is one of the most important economic sectors in the world, and its importance has grown as an industry and as a craft that contributes to economic and social development. The global travel & tourism sector accounted for 10.4% of global GDP and 313 million jobs, or 9.9% total employment, and contributed the US \$7.6 trillion to the global economy in 2017 as shown in the, and this grew in 2018 at 3.9 percent to contribute an \$8.8 trillion, including 319 million jobs to the world economy as shown in the. By 2028 this is expected to rise to 413 million jobs (WTTC, 2018). So, countries, especially developing countries, must focus on the tourism industry and managing

themselves as a distinct tourist destination through managing the basic elements at tourism destinations to provide a high-quality tourism product (Carter & Fabricius, 2007).

Tourism needs appropriate management to achieve its intended goals. Many tools may be used to manage natural and cultural resources. Traditional heritage management mainly focused on cultural and natural resources without giving more attention to tourists who spend time and money at the site. In the latest few decades, the traditional views have changed and managers have been giving attention to managing visitor resources, also visitor impacts and their experience at the same time (Timothy and Boyd, 2003). Therefore visitor management can be considered as a tool for tourism sustainability, i.e. it can be considered as a technique for protecting fragile and weak environments of cultural or natural value (Candrea and Lspas, 2009; Kuo, 2003).

This study aims to analyze the current visitor management situation at Jerash concerning the social conditions (avoid over-crowding) impact, visitor behavior impact (wear and tear), and visitor activities impact. Also, examine the effects of visitor management practices on the level of experience, quality for visitors, revealing at the same time whether there are additional effects of visitor experience on their satisfaction. This study focused on visitor management at Jerash site because of the importance of this site which is considered to be among the important heritage sites in Jordan that rank in the second level after the site of Petra (one of the Seven Wonders of the World). Jerash is also counted among the most important Decapolis cities during the Hellenistic period (Augé, 2013).

2. Conceptual Framework

2.1 Visitor Management

It is worth defining visitor management. It is an ongoing process that is employed to reconcile the following: place, host communities, and visitor's needs. Also, it considers the most effective ways of minimizing tourism negative impacts while also maximizing the benefits of tourism as a positive and effective force (El-Barmelgy, 2013; Manning, 2002; Myra, 2006). Besides these purposes, visitor management is also considered by itself as a technique for protecting a vulnerable and fragile environment as well as a tool for tourism sustainability (Candrea & Ispas, 2009; Kuo, 2003). Achieving the best site management depends on effective visitor management (Mc Arthure, 1994). The importance of a visitor management plan as a tool lies in minimizing the negative effects resulting from visitor activities and maximizing the positive effects. This tool has an effective role in visitor management whether in historical or natural sites to prevent the destruction of geological features and buildings. Moreover, it has been commonly used in archaeological, heritage, and cultural sites (El-Barmelgy, 2013; Myra, 2006).

2.1.1 The Successful Plan for Visitor Management

Crabolu and other researchers emphasized that the successful visitor management Plan (VMP) shall be fully integrative and should include the basic pillars for maintaining the sustainability of the cultural-historical heritage site. Furthermore, a new VMP might be created or an administrative framework that existed previously might be executed (Crabolu, 2015; Leask, 2010; Myra, 2006). The successful management plan consists of three phases: a preparatory phase that defines the current heritage problems and enables the stakeholders to plan for achieving a common aim and vision as well as making a list of stakeholders who will work together to develop this plan (El-Barmelgy, 2013). After that, the development plan phase that formulates the approved VMP carries out many research projects and makes a survey that is related to natural and historical landscapes as well as cultural aspects of the site (Leask, 2010; El-Barmelgy, 2013). Next, comes the operational phase and strategic marketing phase (Kamata et al., 2010).

2.1.2 Visitor Management Frameworks (VMFs)

In fact, for tackling the problems that result from tourism and recreational uses of a site, many VMFs have emerged, such as Limits of Acceptable Change (LAC), Visitor Impact Management Planning (VIMP), Visitor Experience Resource Protection (VERP), Recreation Opportunity Spectrum (ROS), Tourism Opportunity Spectrum (TOS), Carrying Capacity Assessment Process (CCAP), and the Ecotourism Opportunity Spectrum (ECOS) (Crabolu, 2015; Gaspel et al., 2003; Farrell & Marion, 2002; Leung, 2008; Manning et al., 2005; Rae, 2007).

2.1.3 Approaches and Tools of Visitor Management

Myra (2006) has described a group of the most common impacts that result from the increased number of visitors and the negative behaviors in archeological and heritage sites. The issues of over-crowding, visitor behavior (wear and tear), and visitor activities and other issues can all be addressed by adopting 'soft and hard approach (Kuo, 2002; Mason, 2008; Mason, 2006).

2.1.3.1 Hard Approaches

Here the aim is to regulate visitor activities as well as behaviors and the number of visitors. There are several parts to the hard approach to site management.

Physical Strategy: fencing to prevent the visitor from entering sensitive areas, building a viewing platform for visitors in protected areas for animal safety, and reducing the number of visitors by determining the number of cars in the parking areas. These are examples of managing visitors and resources by using physical interventions (Petric & Mandić, 2014).

Organizational Management Strategy: achieved through developing laws and regulations concerning either permission or prohibition for ensuring visitor safety at the site, developing regulations and instructions to protect the site from negative behaviors, and establishing guard barriers and monitoring around the site (Myra, 2006).

Economical Management Strategy: charges high fees for both entering the sites and using the parking to reduce the number of visitors who can pay, imposing fines on some behaviors like throwing garbage, or doing the opposite to reward the visitors who come to the site (Kuo, 2002).

2.1.3.2 Soft approaches

Soft approaches educate and instruct the visitor, providing explanatory information behavioral information, and educational information to reduce economic, social, and ecological recreational impacts on the national parks, the protected natural and cultural areas, as well as heritage sites (Ham et al., 2008; Kuo, 2002; Mason, 2006; Mason, 2008; Mason, 2015; Reigner, 2008; Qaddhat et al., 2019; Wong et al., 2016). Petric & Mandić (2014) have provided a list of examples of these soft management tools: reservation techniques, information management, identifying targeted markets, planner training, and teaching the residents of the host community.

Some researchers have indicated the hard strategy (Direct strategy) and soft strategies (Indirect strategy) for managing inappropriate visitor behavior (Pedersen, 2002; Yoon et al., 2010).

2.2 Visitor Experience

The experiential quality points to the psychological results that come from visitor participation by other visitors in tourism activities (Chen & Chen, 2010). Thus, tourism experiences are characterized by psychological factors, social experience, and interaction among individuals (Castellanos-Verdugo et al., 2016). The experience is different from person to person. So, the experience cannot be standardized (Shackley, 2001). Also, the experience depends on the process of acquiring knowledge and feelings for

an individual about the experience, whether visiting within a tour group, family, alone, or with friends. (Castellanos-Verdugo et al., 2016; Qaddhat et al., 2019). Goulding confirms that we should understand the visitor's experience and expectations to can manage their satisfaction (Goulding, 2000).

Brakus, et al. (2010) mentioned many dimensions to scale the experience as intellectual, behavioral, sensory, and affective dimensions. Many researchers indicate that the quality standard and development of the visitor experience depends on four factors; namely, that entertainment provided for enjoyment and excitement (Chen, 2010). But also, there should be a feeling of peace of mind in recognizing the need for safety, as well as feelings of immersion, which is about the visitor participation in the experience that causes them to forget the time feelings of surprise that makes the experience part of the present moment, specialization or uncommon experiences, and the participation and interaction among the visitors and the tourist service or product. Above all, there should be a joy that comes from visitor happiness and enjoyment gained (Chen & Chen, 2010; Kao et al., 2008).

2.3 Visitor satisfaction

Visitor satisfaction is considered to be necessary for the tourism industry to engage and maintain a long-term relationship with visitors (Hong Tan, 2017). It can be defined as the degree to which the individual feels positive individual feelings (Oliver & Rust, 1994). Yoon and other researchers added that the satisfaction or the experience quality is seen as a psychological result or a sign of the person's psychological status from the site visit (Tonge et al., 2011; Yoon et al., 2010) also many studies have confirmed that visitor satisfaction plays a major and vital role in the marketing process of the site or destination (Hsieh, 2010).

Visitor satisfaction differs from expectations and perceived performance quality. When the experience of the performance does not match the expectations, the results will be dissatisfaction. Moreover, satisfaction impacts visitor loyalty (Chen & Chen, 2010). Others indicate that satisfaction comes out of the process of evaluating either quality or characteristics of the product or the destination through the distinctions between the obtained services and the paid costs (Hsieh, 2010).

There are large numbers of variables that play a primary role in impacting the visitor experience. It can be said that services and facilities, such as transportation, hotels, rest areas, also, the existence of other factors that are related to the external environment (Fuchs & Weiermair, 2003), the visitor interactions with the tourist site and with the local community are all responsible for visitor experience, which is in turn responsible for visitor satisfaction (Ko-Ko & Supinit, 2016). Naidoo and some other researchers (2011) add that the satisfaction in nature-based tourism attractions is measured along several dimensions; namely, responsiveness, programming, sympathy, capability, confirmation, and reliability. Some researchers have employed the above-mentioned dimensions in addition to similar ones like pricing, responsibility, and perceived value. Besides, Spiers (2012) has summarized the subjects that impact visitor satisfaction, such as resource settings, management settings, social settings, and the visitor self-assessments that vary according to their standards, preferences, and attitudes which may cause a problem in measuring the satisfaction of the experience quality.

2.4 Jerash (Case Study)

Jerash is in the north of Jordan, it is located about 48 km from Amman, the capital of the Hashemite Kingdom of Jordan as shown in figure 1 (Qaddhat et al., 2019). Garshu, the ancient Arabic name of Jerash, 2,000 years ago, was later changed to Gerasa under Roman rule (Bohm et al., 2002). Gerasa, as mentioned was part of a confederation of ten cities of the Roman Empire called the Decapolis (Augé, 2013).

2.4.2 Jerash Values and Significance

A site management plan should be based on the values of the site. Jerash has aesthetic, scientific, social, economic, and spiritual values protected by the Jordanian Law of Antiquities. The significance of Jerash is determined by the totality of the Jerash site values and its importance concerning other similar sites (Myers et al., 2010 ;Qaddhat et al., 2019).

2.4.3 Jerash Visitor Numbers and Tourism Receipts

The tourism statistics show that the number of visitors at Jerash was 214,550 and the tourism receipts (JD Million) reached 1021.6 in 2005, while the number of visitors in 2010 was 412,649 and the tourism receipts reached 2423,300. After that, the visitor movement at Jerash has dropped as well as in all the heritage sites in Jordan after the Syrian crisis. After several disappointing years, the visitor movement has started to recover until the number of visitors in 2017 was 254,818 and the tourism receipts were JD3293.6. The relative change in the number of visitors is observed in the period between 2005 and 2018. The number of visitors considerably increased by the third-quarter of 2018 to 235,354 and the financial revenues reached JD2885.1 as shown in figure 3. (Ministry of Tourism and Antiquities, accessed 2019).

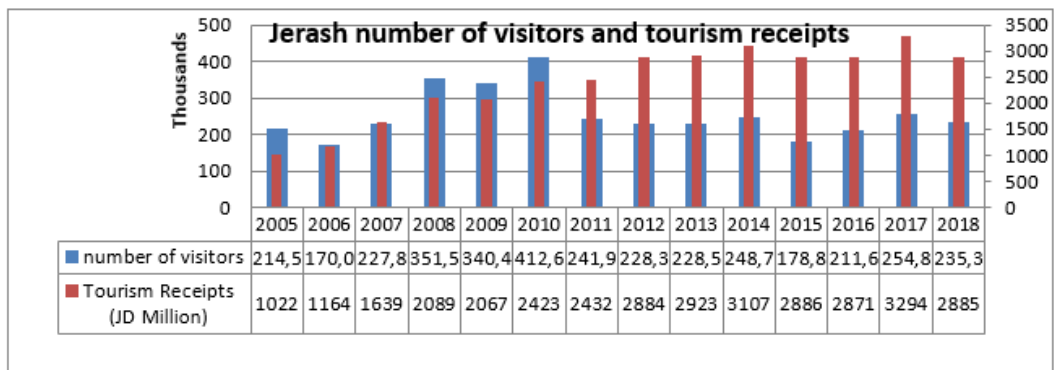


Figure 3: Number of Visitors and Tourism Receipts for the Jerash Site 2005 – Third Quarter of 2018
Source: Researcher, 2019

3. Methodology

3.1 Data Collection

In this thesis, the following methods have been used to collect data in both primary and secondary forms as:

3.1.1 Literature Review:

Literature that forms the theoretical framework (secondary data) related to the site management, visitor experiences, and satisfaction, were collected from Arabic and foreign secondary sources related to the research subject. In addition to the collection of all items associated with the variables which were used in the questionnaire from the relevant literature.

3.1.2 Field Study

This study was conducted at Jerash archaeological site in the north of Jordan as a figure 1. Primary data was collected through the following instruments:

3.1.2.1 Questionnaire

Using a questionnaire to gather primary data from visitors, the questionnaire was developed basically from the salient issues identified in the literature review. It was presented to some professors in the field of tourism to check its clarity and accuracy; it was revised again to make sure of its readiness before distribution to the sample of this study. The questionnaires were distributed among a sample of Arab and foreign (who did not speak Arabic) visitors at Jeresh archaeological site.

A variable concerning visitor management prepared to find out the visitor's opinions about visitor management strategies that administrators used to address the following issues: Site social conditions (over-crowding) and impact, visitor behaviors impact (wear and tear), and visitor activities impact as a figure 4. This variable and visitor experience was measured using a five-point Likert scale (1= strongly disagree and 5= strongly agree).

Visitor satisfaction formed the fourth variable and includes 21 items, to discover the visitor's satisfaction about issues like services, facilities, site interpretation, and presentation, and staff (adequacy of the employee's knowledge and experience). This variable was measured using a five-point Likert scale (1= very dissatisfied and 5= very satisfied).

The field study was conducted over three weeks between 19 October and 14 November 2018, daily from 8.00 am to 5.30 pm. For this study, a total of 418 questionnaires were distributed among a sample of Arab and foreign visitors. Of these 418 questionnaires, only 360 questionnaires were used in the final analysis (240 were filled by foreign visitors, and 120 were filled by Arab visitors) and were analyzed by SPSS -V- 22. 58 questionnaires were excluded (16 from the Arab respondents and 42 from the foreign respondents), due to some items not having been answered fully and clearly.



Figure 4: Visitor Management Issues

Source: Researcher, 2018

3.1.2.2 Direct personal observation

The researcher visited the site for two days, observed and recorded by using a digital camera and notes taken by hand to monitor the behavior of visitors, the visitor management approach that was being used on the site, in addition to observing the services and facilities available at the site, which included the presentation of information and interpretation, the qualifications of employees on the site, which plays a big role in dealing with visitors and welcoming them.

These observations were reviewed to support or refute the respondents' answers and to contribute to assessing the current situation of visitor management and the 2018 visitor satisfaction with the services and facilities provided at the site.

3.2 Community and Sample of Study

The Community of Study involves all Jerash site visitors both Arabs and foreigners during the year 2018/2019. As for the sample of the study, this research depends on a random sample for data collection, the sample size is 360 Arab and foreign Jerash visitors (120 were filled by Arab visitors, and 240 were filled by foreign visitors), that were age 18 and over, and who visited Jerash between October and November 2018.

The number of Jerash visitors for 2017 was 254.818. According to the calculation for the study sample size, the minimum number of survey respondents is 159. Thus, the actual sample size of 360 questionnaires was sufficient and representative for the Community of Study.

3.3 Data Analysis

The questionnaires were analyzed by SPSS - V- 22. All Collected data were later analyzed using a descriptive analysis approach that reviews the current situation of visitor management. Also, the hypotheses were examined using linear regression analyses to identify significant influences of the independent variables on the dependent variables

3.4 Hypotheses of the Study

- H1: Visitor management significantly influences visitor experience.
- H2: Visitor management significantly influences visitor satisfaction.
- H3: Visitor experience significantly influences visitor satisfaction

4. Results and Discussion

4.1 Reliability Analysis

The reliability coefficients are Cronbach's Alpha, the stability coefficient, and the coefficient of equivalence. The ranges of reliability coefficients are (0 - 1), and if the coefficient is closer to 1, that means there is more reliability coefficient (Abu-Bader, 2006). Reliability analysis was used for the questionnaire responses. The value of Cronbach's Alpha = 0.955 > 0.70, which indicates that the questionnaire items are highly related to each other and that the items have relatively high internal consistency. It is known that a reliability coefficient of .70 or higher is considered "acceptable" in most social science research situations Furthermore, this result is considered an overall index of the repeatability and internal consistency of the questionnaire as a whole that indicates that the results may be trusted.

4.2 Descriptive Analysis

4.2.1 Results and Discussion for Indicators of Visitor Management

Table (1): Descriptive Analysis for Indicators of Visitor Management

Item	Frequencies					Mean		Std. Deviation	Variance
	S. Disagree	Dis agree	Neutral	Agree	S. Agree	Statistic	Std. Error		
Visitor Management: (Social Condition) Over-crowding impact									
The number of visitors to the site is reasonable.	1 0.3	9 2.5	45 12.5	204 56.7	101 28.1	4.10	0.038	0.723	0.523
There is no crowding at the site.	4 1.1	10 2.8	54 15.0	182 50.6	110 30.6	4.07	0.043	0.815	0.664
The size of the groups encountered is acceptable.	4 1.1	10 2.8	70 19.4	193 53.6	83 23.1	3.95	0.042	0.797	0.635

Item	Frequencies					Mean		Std. Deviation	Variance
	S. Disagree	Dis agree	Neutral	Agree	S. Agree	Statistic	Std. Error		
There is no traffic congestion.	2 0.6	17 4.7	93 25.8	163 45.3	85 23.6	3.87	0.045	0.847	0.718
The number of visitors at the site doesn't affect negatively their psychological state.	2 0.6	22 6.1	69 19.2	167 46.4	100 27.8	3.95	0.046	0.874	0.763
The number of visitors at the site doesn't affect negatively their enjoyment and experience.	2 0.6	25 6.9	53 14.7	176 48.9	104 28.9	3.99	0.046	0.875	0.766
The magnitude of environmental and psychological visitor impact is acceptable.	3 0.8	19 5.3	76 21.1	170 47.2	92 25.6	3.91	0.046	0.865	0.747
There is control over the number of visitors at the site.	10 2.8	26 7.2	115 31.9	136 37.8	73 20.3	3.66	0.051	0.972	0.945
The number of visitors at Jerash is regulated.	7 1.9	32 8.9	139 38.6	108 30.0	74 20.6	3.58	0.051	0.975	0.951
Total						3.89	0.050	0.804	0.745
Visitor Management: (Social Condition) Over-crowding impact									
There are written regulations and rules to prevent unbridled behaviors.	11 3.1	40 11.1	120 33.3	118 32.8	71 19.7	3.55	0.054	1.025	1.050
Written regulations are clarifying the penalty of the theft or deliberate damage at the site.	15 4.2	67 18.6	121 33.6	95 26.4	62 17.2	3.34	0.058	1.093	1.194
There is use restriction in the site (e.g. cordoning off areas).	11 3.1	50 13.9	114 31.7	121 33.6	64 17.8	3.49	0.058	1.093	1.194
There are wardens at the site.	8 2.2	27 7.5	103 28.6	144 40.0	78 21.7	3.71	0.051	0.961	0.923
Signs are indicating the unacceptable behaviors at the site smoking, drinking alcohol... etc.).	15 4.2	75 20.8	110 30.6	89 24.7	71 19.7	3.35	0.060	1.137	1.292
Inform visitors about how to minimize the impact as little as possible.	16 4.4	69 19.2	101 28.1	105 29.2	69 19.2	3.39	0.060	1.129	1.276
Inform visitors about the significance of the site.	4 1.1	33 9.2	94 26.1	144 40.0	85 23.6	3.76	0.050	0.953	0.908
There is an education program for visitors about ecology and how to protect the environment at the site.	17 4.7	69 19.2	108 30.0	106 29.4	60 16.7	3.34	0.058	1.108	1.228
There are awareness programs for visitors at the site.	9 2.5	61 16.9	110 30.6	99 27.5	81 22.5	3.51	0.058	1.092	1.192
Inform visitors to guide themselves in sensitive areas.	12 3.3	50 13.9	114 31.7	114 31.7	70 19.4	3.51	0.055	1.051	1.105
Law enforcement is applied at the site.	9 2.5	32 8.9	136 37.8	103 28.6	80 22.2	3.59	0.053	1.008	1.017
There is behavior modification through praise of the positive visitors' behaviors.	15 4.2	37 10.3	150 41.7	94 26.1	64 17.8	3.43	0.054	1.029	1.059
There is behavior modification through punishments.	15 4.2	49 13.6	148 41.1	73 20.3	75 20.8	3.40	0.057	1.087	1.182
There is behavior modification by providing advice.	11 3.1	44 12.2	145 40.3	101 28.1	59 16.4	3.42	0.053	1.001	1.003
Total						3.47	0.052	1.052	1.115
Visitor Management: visitor activities impact									
There are instructional signs for certain activities.	21 5.8	37 10.3	129 35.8	100 27.8	73 20.3	3.46	0.058	1.101	1.213
There is the monitoring of all activities at the site.	17 4.7	49 13.6	122 33.9	102 28.3	70 19.4	3.44	0.058	1.093	1.194
All visits to the site conducted by knowledgeable and professional guides.	17 4.7	45 12.5	94 26.1	114 31.7	90 25.0	3.60	0.060	1.130	1.277
All the visitors' activities at the site are supervised.	12 3.3	58 16.1	125 34.7	101 28.1	64 17.8	3.41	0.056	1.059	1.122
There are regulations for certain active cities in certain areas.	4 1.1	32 8.9	110 30.6	128 35.6	86 23.9	3.72	0.051	0.962	0.925
Total						3.52	0.056	1.069	1.146

Table 1 shows that the average of a mean for all items of visitor management “over-crowding” variable about 3.89 tends to confirm that there is no crowding at Jerash site. The average of Std. Error of Mean is about 0.050 which is much less than 1.0. This result signifies that there is an agreement between the sample mean and the community mean. Based on these findings, it is clear that there is good management of over-crowding at the site of Jerash. This is confirmed by the observation process carried out by the researcher as described in appendix 2.

As for the visitor behavior impact (wear and tear) management, the average of mean for all items was 3.47 for variables and 0.052 for the average of Standard Error of Mean. Since the figure of 0.052 is less than 1.0, it means that there is an agreement between the sample mean and the community mean.

On the other hand, the results of the average of standard deviation (1.052) and the average of the variance (1.115) are more than 1.0 which means there is dispersion in the respondents' answers. These data indicate that the respondents are not sure of their answers; whether to the subject is regulations or restrictions at the site, or the signs indicating unacceptable behaviors, or the education program for visitors about ecology and how to protect the environment at the site, as well as visitor behavior modification through praise of their positive behaviors. One reason for visitor's lack of certainty about these subjects may be because it is unclear, or maybe it is because the visitors expect that all of these practices exist, but that they did not observe the site management practices. Based on these findings, it is clear that the management of visitor behavior impact is acceptable but it is unclear for the visitor as shown in appendix 2.

As the average of the mean for all impact management variables for visitor activities is about 3.52, located between "neutral" and "agree." The average for Standard Error of Mean is about 0.056, which is less than 1.0. On the other hand, the result for the average standard deviation is 1.069, and the average for the variance is 1.146. Both figures are more than 1.0 which means there is dispersion. Based on these findings, it appears that the visitor activities impact management is good but there are some problems in the management mechanisms at the site in this regard.

The total result which represents the average of the mean for all items of the visitor management variables (over-crowding impact, visitor behaviors impact (wear and tear), and visitor activities impact) is about 3.45, a number that falls between "neutral" and "agree." The average for Standard Error of Mean is about 0.058 which is less than 1.0. On the other hand, the results for the average of standard deviation is 1.095, and the average of variance is about 1.201. Both numbers are more than 1.0 which means there is dispersion. Based on these findings, it is clear that the management mechanisms at the site are acceptable, but it is imperfect and needs to be developed further to pay more attention to the ways to improve visitor satisfaction and loyalty. This result is confirmed by the director of the Jerash site, and consistent with the researcher observations, that confirm the absence of such instructions, regulations, programs, or the behavior modification practiced by providing advice or through punishments. This result is compatible with what is mentioned by Mustafa and Balaawi (2012), also Ababneh et al. (2014) where they pointed to some problems that reflect inefficient visitor management at the site. So, visitor management should be improved at the Jerash site; for example, signage must be available to prevent the negative behaviors and the signs should state the consequences of negative activities and behaviors at the site.

This result is confirmed by consistent with the researcher observations, that confirm the absence of such instructions, regulations, programs, or the behavior modification practiced by providing advice or through punishments as described in appendix 2. The weakness in management with specific regard to visitor behavior and activities exists in many archaeological sites around Jordan, such as documented by Ababneh et al. (2014) in their study that evaluated the visitor management at Umm Qais. Also, this study is compatible with what is mentioned by Mustafa and Balaawi (2013), where they pointed to several problems that reflect inefficient visitor management at the site of Petra.

4.2.2 Results and Discussion about Indicators of Visitor Experience.

Table (2): Descriptive Analysis for Indicators of Visitor Experience

Item	Frequencies					Mean		Std. Deviation	Variance
	S. Disagree	Disagree	Neutral	Agree	S. Agree	Statistic	Std. Error		
It was a great experience.	3 0.8	9 2.5	53 14.7	133 36.9	162 45.0	4.23	0.045	0.850	0.722
I felt I should have visited Jerash before.	9 2.5	16 4.4	100 27.8	117 32.5	118 32.8	3.89	0.053	0.999	0.998
I felt an emotional connection with the things I saw.	7 1.9	14 3.9	99 27.5	126 35.0	114 31.7	3.91	0.050	0.957	0.916
I am happy about my decision to visit Jerash.	6 1.7	7 1.9	45 12.5	119 33.1	183 50.8	4.29	0.046	0.881	0.777
I felt scenes of wonder or awe.	5	9	67	119	160	4.17	0.048	0.911	0.830

Item	Frequencies					Mean		Std. Deviation	Variance
	S. Disagree	Disagree	Neutral	Agree	S. Agree	Statistic	Std. Error		
	1.4	2.5	18.6	33.1	44.4				
I had an enjoyable experience.	6 1.7	8 2.2	49 13.6	124 34.4	173 48.1	4.25	0.047	0.892	0.795
I received a good knowledge of the site.	4 1.1	10 2.8	59 16.4	142 39.4	145 40.3	4.15	0.046	0.870	0.757
The experience was engaging.	3 0.8	7 1.9	46 12.8	150 41.7	154 42.8	4.33	0.090	1.707	2.915
The visit achieved my perceptions and expectations.	6 1.7	10 2.8	39 10.8	160 44.4	145 40.3	4.19	0.045	0.859	0.739
I got value for the money spent.	4 1.1	9 2.5	54 15.0	154 42.8	139 38.6	4.16	0.045	0.850	0.722
I discovered some new information.	3 0.8	10 2.8	40 11.1	140 38.9	167 46.4	4.28	0.044	0.834	0.696
Total						4.168	0.055	0.964	0.987

Table 2 shows that the average of the mean for all items for the visitor experience variable is about 4.16 which is between "agree" and "strongly agree.". The average of Standard Error of Mean is about 0.055. On the other hand, the results of the average of standard deviation 0.964 and the average of the variance 0.987 are less than 1.0. Based on these findings altogether, it is clear that there is a positive visitor experience at the Jerash site.

In summary, we can say that the visitor experience is great and enjoyable. The visitors received good knowledge about the site; their impressions were good and their expectations were met; they got value for money spent and many visitors felt an emotional connection with the things they saw. Responses show that they wished that they would have visited Jerash before. But this experience has not reached the level that makes the visit intensely engaging. This appears to be caused by the level of services and facilities not being high enough. The available activities at the site are limited, which did not add to the enjoyment of their experience. Besides, the behavior of both of the employees and the visitors have played a major role in affecting the quality of the visitor experience, which requires effective management of the behaviors that diminish the pleasure of visiting Jerash.

4.2.3 Results and Discussion concerning Indicators of Visitor Satisfaction

Table (3): Descriptive Analysis for Indicators of Visitor Satisfaction

Item	Frequencies					Mean		Std. Deviation	Variance
	Very Dissatisfied	Dissatisfied	Neutral	satisfied	Very satisfied	Statistic	Std. Error		
Visitor Satisfaction: Services									
Benches availability at the site	11 3.1	32 8.9	97 26.9	142 39.4	78 21.7	3.68	0.053	1.008	1.016
Garbage cans availability at the site.	15 4.2	41 11.4	84 23.3	138 38.3	82 22.8	3.64	0.057	1.080	1.167
Garbage cans distribution at the site	11 3.1	47 13.1	109 30.3	122 33.9	71 19.7	3.54	0.055	1.044	1.090
Location and number of public toilets.	26 7.2	68 18.9	112 31.1	98 27.2	56 15.6	3.25	0.060	1.146	1.313
Cleanliness of the toilets.	39 10.8	66 18.3	114 31.7	101 28.1	40 11.1	3.10	0.061	1.155	1.335
Toilets condition.	31 8.5	67 18.6	122 33.9	96 26.7	44 12.2	3.15	0.059	1.125	1.266
Restaurant availability at the site.	11 3.1	19 5.3	97 26.9	173 48.1	60 16.7	3.70	0.048	0.914	0.835
Cleanliness of the Restaurants.	11 3.1	10 2.8	101 28.1	169 46.9	69 19.2	3.76	0.047	0.897	0.805
Restaurants services.	10 2.8	14 3.9	86 23.9	166 46.1	84 23.3	3.83	0.049	0.923	0.852
Total						3.15	0.054	1.032	1.075
Visitor Satisfaction: Facilities									
Price of the admission tickets.	12 3.4	17 4.7	74 20.6	166 46.1	91 25.3	3.86	0.050	0.953	0.908
Parking facilities.	13 3.6	14 3.9	65 18.1	173 48.1	95 26.4	3.90	0.050	0.958	0.917

Item	Frequencies					Mean		Std. Deviation	Variance
	Very Dissatisfied	Dissatisfied	Neutral	satisfied	Very satisfied	Statistic	Std. Error		
Safety and security at the site.	2 0.6	10 2.8	53 14.7	150 41.7	144 40.0	4.18	0.044	0.824	0.679
Presence of tourist police at the site.	10 2.8	7 1.9	72 20.0	147 40.8	124 34.4	4.02	0.049	0.935	0.874
Walking routes availability.	5 1.4	12 3.3	61 16.9	162 45.0	120 33.3	4.06	0.046	0.872	0.760
Ease of access (e.g. transport).	14 3.9	14 3.9	64 17.8	166 46.1	102 28.3	3.91	0.052	0.980	0.961
Availability of special facilities and services for children and seniors.	15 4.2	35 9.7	140 38.9	97 26.9	73 20.3	3.49	0.055	1.050	1.103
Zoning application (tourism zones such as visitor center, souvenirs shops, etc.).	9 2.5	23 6.4	105 29.2	145 40.3	78 21.7	3.72	0.050	0.956	0.914
Availability of souvenir shops at the site.	13 3.6	16 4.4	81 22.5	162 45.0	88 24.4	3.82	0.051	0.971	0.943
Total						3.82	0.050	0.958	0.926
Visitor Satisfaction: Interpretation and Presentation									
Tourist information center services.	15 4.2	20 5.6	98 27.2	155 43.1	72 20.0	3.69	0.052	0.988	0.977
58- Videos and presentation about the site.	16 4.4	28 7.8	150 41.7	108 30.0	57 15.8	3.45	0.053	0.996	0.991
Availability of maps that define routes and features within the site.	20 5.6	35 9.7	101 28.1	120 33.3	84 23.3	3.59	0.059	1.113	1.239
Availability brochures, leaflets, explanation banners, and posters about the site.	11 3.1	31 8.6	113 31.4	131 36.4	74 20.6	3.63	0.053	1.002	1.003
Availability of interpretive signs	8 2.2	28 7.8	97 26.9	148 41.1	79 21.9	3.73	0.051	0.964	0.928
Availability of directions signs	16 4.4	24 6.7	84 23.3	150 41.7	86 23.9	3.74	0.055	1.036	1.074
Total						3.63	0.053	1.019	1.040
Visitor Satisfaction: Staff (Employee)									
Sufficiency of the employees' knowledge and experience	14 3.9	25 6.9	95 26.4	147 40.8	79 21.9	3.70	0.053	1.012	1.024
Interaction and communication between employees and visitors	9 2.5	15 4.2	95 26.4	143 39.7	98 27.2	3.85	0.050	0.953	0.908
Availability of local tour guides in different languages	9 2.5	11 3.1	85 23.6	138 38.3	117 32.5	3.95	0.050	0.953	0.909
Friendliness of employees and willingness to help a visitor	8 2.2	11 3.1	53 14.7	150 41.7	138 38.3	4.11	0.048	0.918	0.843
Total						3.94	0.037	0.948	0.904

Table 3 shows that the average of the mean for all items of visitor satisfaction variables is 3.63. The majority of respondents locate close to "satisfied". The average of Std. Error of Mean is about 0.048. This result assures that there is agree between the sample mean and the community mean. Also, the results of the average of standard deviation and variance are 0.989. These findings indicate that there is general satisfaction among visitors about what is presented at the Jerash site, especially concerning facilities, employees' communication, and friendliness and their welcoming spirit. On the other hand, this study has identified many problems related to visitor satisfaction with the services, especially concerning the cleanliness of the site and the toilets, and also the availability of special facilities and services for children and seniors. Also, the presentation and interpretation approach such as maps that define routes, the brochures and leaflets, the explanation banners, the direction signs, and warning signs. Also, attention should be given to increase the employees' knowledge about the site as in figure 5, also leave some visitors unsatisfied. This study is consistent with what is described by Ababneh et al. (2014), and Balaawi (2012), and Mustafa (2005).



Figure 5: Maintenance at the Temple of Zeus without Posting a Warning Sign

Source: Researcher, 2018

4.3 Regression Analysis

Regression analysis is used to examine the effect of the independent variables (predictor) on the dependent variables (criterion) (Abu-Bader, 2006).

Table (4): Hypotheses Analysis (Regression)

Hypothesis	R	R ²	B	p-value
H1: Visitor management significantly influences visitor experience.	0.543	0.295	0.346	0.00
H2: Visitor management significantly influences visitor satisfaction.	0.522	0.273	0.219	0.00
H3: Visitor experience significantly influences visitor satisfaction	0.286	0.082	0.286	0.00

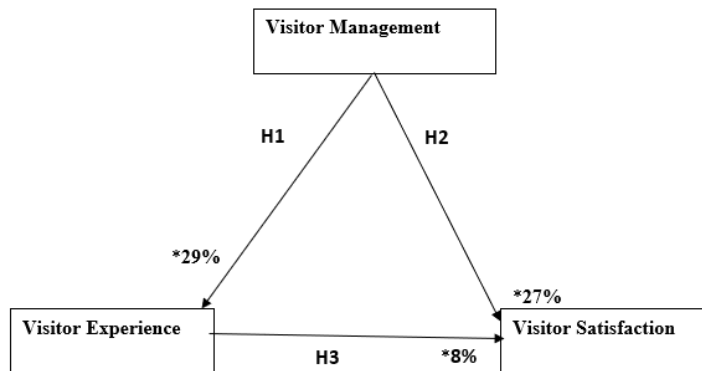
Note: r = Coefficient of Correlation; r² = Coefficient of Determination; B = Unstandardized Regression Coefficient). r₂ ≥.64: Strong positive correlation; .25 < r₂ <.64: Moderate positive correlation; r₂ ≤.25: Weak positive correlation (Abu-Bader, 2006).

Hypothesis (H1): Table 4 shows that the path coefficient from visitor management to visitor experience is **B = 0.346**, **R = 0.543**, and P-value is 0.00 < 0.05, and H2 is supported. Based on these findings, it is clear that there is a significant causal (moderate and positive) relationship between visitor management and visitor experience. It is found that the change in visitor management explains 29% (R square=.29) of the variance in visitor experience as shown in (Research Model) figure 6, so the rest of the impact on visitor experience is due to factors other than visitor management. Accordingly, we accept the alternative hypothesis that says: *Visitor management significantly influences visitor experience*. We reject the null hypothesis. This study is compatible with what is described by Chin et al. (2000), Ababneh et al. (2014), Laws (1998), and Lynn et al. (2003).

Hypothesis (H2): Table 4 shows that the path coefficient from visitor management to visitor satisfaction is **B = 0.219**, **R = 0.522**, P-value is 0.00 < 0.05 and H1 is supported. Based upon these findings, it is clear that there is a significant causal (moderate and positive) relationship between visitor management and visitor satisfaction. It is found that the change in visitor management explains 27% (R square= .27) of the variance in visitor satisfaction as shown in figure 6, so the rest of the impact on visitor satisfaction is due to factors other than visitor management. Accordingly, we accept the alternative hypothesis that says: *Visitor management significantly influences visitor satisfaction*. We reject the null hypothesis. This study is compatible with what is described by Ababneh et al. (2014),

Laws (1998), several also are in line with other published research findings Tonge and Moore (2007) and Weaver (2010).

Hypothesis (H₃): Table 4 shows that the path coefficient from visitor experience to visitor satisfaction is $B = 0.286$, $R = 0.286$, and P-value is $0.00 < 0.05$, and H₃ is supported. Based on these findings, it is clear that there is a significant causal (weak and positive) relationship between visitor experience and visitor satisfaction. It is found that the change in visitor experience explains 8% ($R^2 = .08$) of the variance in visitor satisfaction as shown in figure 6, so the rest of the impact on visitor satisfaction is due to factors other than visitor experience. Based on this result we accept the alternative hypothesis that says: *Visitor experience significantly influences visitor satisfaction*. We reject the null hypothesis. This study is compatible with what is reported by Chen et al. (2009), Jin et al. (2015), and Song et al. (2015).



Note: * = R²

Figure 6: Research Model

5. Conclusion

Based on descriptive analysis, this research examined the mechanisms of visitor management, visitor satisfaction about the services and facilities, and the interpretation means which were used at the site. Also, it examined the visitors' experience and the extent of their loyalty to Jerash.

The study has revealed some findings, including good management of overcrowding at the site. It has also revealed some negative behaviors such as graffiti, climbing, and touching the archaeological monuments at the Jerash site. Finally, the overall satisfaction among visitors regarding facilities and the employees' method for dealing with visitors is documented. However, some problems and remains with some of the services, particularly concerning grounds cleaning and public facilities like the explanation and presentation services at the site.

The study has also revealed that visitors have good experiences and satisfaction at Jerash and that they feel loyalty to the site, but that it requires needs more attention to upgrade the visitor management to improve the visitor experience and satisfaction. The effect of independent variables on dependent variables was examined through using the regression analysis, the results were as follows in table 5.

Table 5: Results of the Study Hypotheses

Hypotheses	Results
H1: Visitor management significantly influences visitor satisfaction.	Accepted
H2: Visitor management significantly influences the Visitor experience.	Accepted
H3: Visitor experience significantly influences visitor satisfaction	Accepted

6. Impediments of the Study

Firstly, the process did not go easily for convincing the tourist guides about distributing questionnaires to foreign visitors who were following the tourist guide. However, this challenge was overcome by convincing the owners of restaurants and cafes around the site to allow the distribution of questionnaires to visitors who stop to take a break. But since researchers cannot be in more than one place, there is a chance of missing some visitors who do not stop there.

Secondly, there were logistical challenges due to the long-distance between the researcher's workplace and the study site. Jerash in northern Jordan is about 350 kilometers away. This fact added some difficulty for the researcher moving between the workplace and field site.

7. Recommendations

The current study has focused on evaluating the current situation of visitor management in the Jerash archaeological site in Jordan. Based on the information obtained in the study of literature and according to the findings of the field study, many recommendations can be suggested which would increase the quality of visitor management, and enhance the site services and essential facilities that play a primary role in enriching visitor experience. These changes would in turn enhance the level of visitor satisfaction as well as magnify and strengthen visitor loyalty to the Jerash site. These recommendations are as follows:

- 1- The Ministry of Tourism and Antiquities (MoTA) should increase promotional and media campaigns that are related to Jerash as well as managing such marketing work properly and emphasize the internet and social media to achieve the desired goal.
- 2- The MoTA has to train the tour guides in a way that enables them to contribute to presenting prestigious images of the site. These images are an effective tool in site marketing, based on the findings of this study which have revealed that most visitors learn about the site directly from the tour guides.
- 3- The MoTA has to train and inform the tourist guides about the appropriate methods for guiding tourist groups at the site for the guides to be an effective tool to improve environmental awareness.
- 4- The MoTA and Department of Antiquities (DoA) should enhance the level of employees efficiency at the site through preparing appropriate practical courses that raise their awareness of the importance of Jerash as well as to retrain them to take responsibility in protecting the site, to have a deeper understanding of visitors' interests, and to welcome the visitors to guarantee the sustainability of high-quality visitor experiences.
- 5- The MoTA and DOA should improve the infrastructure and the accessibility to reach the site. These details are considered among the primary factors that attract tourists.
- 6- The MoTA and DoA and Site managers of the site have to improve the services and provide satisfactory facilities at the site. The grounds cleaning of the site, toilets, and public utilities, increasing the number of trash bins and distributing them properly in the site, interesting rest areas locations, and adequate parking, increasing the number of wardens to protect the archeological landmarks at the site, and providing internet service are examples of things to improve.
- 7- The MoTA and DoA and the site managers should take into consideration the particular needs of children and elderly visitors. Besides providing appropriate services for them, the managers should take into account the interest of people with special needs by allocating special paths for them and providing them with services and appropriate facilities in general and wheelchair access in particular.
- 8- The DoA and the managers of the site have to improve the services and provide satisfactory facilities at the site. The grounds cleaning of the site, toilets, and public utilities, increasing the number of trash bins and distributing them properly in the site, interesting rest areas

- locations, and adequate parking, increasing the number of wardens to protect the archeological landmarks at the site, and providing internet service are examples of things to improve.
- 9- The Site managers should improve all categories of signage as well as to increase their number around the site, whether the signs show directions, explanation, guidance, or warnings. The wording and illustrations should be interesting, clear, and of high quality at all locations where the signs are distributed.
 - 10- The Site managers should not fail to provide signs that are related to visitor safety since all the signage is regarded as an important tool in visitor management and guidance in the site.
 - 11- The Site managers should also take interest in visitor management through applying indirect approaches to manage visitor behaviors by using educational and awareness-raising programs at the visitor center to inform the visitors about guiding themselves in the sensitive areas, and ways to minimize the impact that results from their negative behaviors. Besides, managers should guide to direct the visitors to the paths around the site, in addition to providing historical information and guidance about appropriate behaviors. Furthermore, there should be behavior information displayed, for example guiding principles, codes of visitor conduct, educational information like plans, guidebooks, and about the tour guides' qualifications.
 - 12- Visitor behaviors should be managed by expressing positive behaviors or by correcting when visitor behavior is undesirable.
 - 13- The managers should not neglect the written regulations and rules, and it should be properly distributed at the site to prevent some of the uncontrolled behaviors such as smoking, drinking alcohol, touching the sensitive monuments, climbing on the monuments, writing on the monuments, and so on.

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