

**THE PERCEIVED IMPACT OF TOURISM
INFRASTRUCTURE ON THE DEVELOPMENT OF A
HERITAGE SITE: THE CASE OF PETRA, JORDAN**

by

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LIST OF ABBREVIATION

	Page
WTO World Tourism World	1
JTB Jordanian Tourism Board	4
MOTA Ministry of Tourism and Antiquities	5
PAR Petra Authority Region	5
FIFA Federation of International Football Associations	33
GDP Gross Domestic Product	33
KSA Kingdom of Saudi Arabia	33
TTCI Travel and Infrastructure Competition's Index	45
CBJ Central Bank Jordan	94
ASEZ Aqaba Special Economic Zone	94

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- 2- AL-Amayreh, A. (2008). Religious Tourism Infrastructure in Jordan, Conference on religious Tourism in Jordan. 26-27 July 2008. Amman, Jordan.

**PERSEPSI TERHADAP KESAN PEMBANGUNAN
INFRASTRUKTUR PELANCONGAN TAPAK WARISAN: KES
PETRA, JORDAN**

ABSTRAK

Tujuan kajian ini dijalankan adalah untuk meneliti kesan infrastruktur pelancongan terhadap pembangunan tapak warisan bersejarah Petra di Jordan. Untuk membolehkan kajian ini mencapai matlamat yang ditetapkan, pelbagai teknik kajian digunakan. Kedua-dua kaedah kuantitatif dan kualitatif digunakan untuk pengumpulan data. Tiga peringkat telah digunakan untuk mengumpulkan data kajian. Pada peringkat pertama, kaedah kuantitatif (borang soal selidik) telah digunakan untuk mengumpulkan data. Sebanyak 350 borang soal selidik diedarkan secara rawak dalam kalangan penduduk tempatan di Petra. Namun hanya 287 responden telah memberikan kerjasama untuk menjawab borang soal selidik tersebut. Dalam peringkat kedua, temubual separa-struktur telah dijalankan bersama 6 orang pakar dalam bidang infrastruktur pelancongan. Pada peringkat ketiga, kaedah pengamatan telah digunakan oleh pengkaji sebagai kaedah untuk mengumpulkan data. Hasilnya, kedua-dua kaedah kuantitatif dan kualitatif tersebut menunjukkan pembangunan infrastruktur pelancongan yang positif di kawasan tersebut kepada pembangunan ekonomi, sosial dan persekitaran kawasan setempat. Secara tidak langsung, terdapat pertalian yang jelas kesan sosial dan persekitaran di antara infrastruktur pelancongan dan pembangunan kawasan warisan sejarah Petra. Berdasarkan penemuan ini, pengkaji mengesyorkan bahawa penambahbaikan infrastruktur dilakukan terhadap sistem jalan raya, papan tanda, bekalan air, tandas awam, klinik dan pengurusan sistem kumbahan. Kepentingan kajian ini juga boleh dijadikan rujukan kepada pengkaji pada masa hadapan.

THE PERCEIVED IMPACT OF TOURISM INFRASTRUCTURE ON THE DEVELOPMENT OF A HERITAGE SITE: THE CASE OF PETRA, JORDAN

ABSTRACT

The purpose of this study was to examine the impact of tourism infrastructure on the development of the heritage site of Petra in Jordan. In order to achieve this goal, a mixed method research was employed in the current research. Both quantitative and qualitative methods were employed to collect data. Three stages have been used in order to collect the research data. In the first stage, the quantitative method (questionnaire) was used as a technique of data collection, 350 questionnaires were distributed randomly to the local residents of Petra; nevertheless, only 287 participants have answered the questionnaire. In the second stage, semi-structured interviews were conducted with six experts in the field of tourism infrastructure. In the third stage, observational method was used by the researcher as a method of data collection. Results from both quantitative and qualitative data indicated that tourism infrastructure has positive economic, social and environmental effects on the development of Petra as well as a significant relationship between tourism infrastructure and the development of the heritage site of Petra. Based on the findings, it was recommended that the upgrading of the infrastructure in Petra is needed mainly in roads and transportation system, signboard system, water supply, public lavatories, clinics and management of waste. The importance of this study comes from being a reference for future studies.

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter attempts to present a discussion about tourism infrastructure in Jordan in general and Petra in particular. This includes the background of the study, statement of the problem, objectives, questions, hypotheses of the study, the significance of the research, methodology and other relevant issues.

1.2 Background of the Study

Tourism is the largest universal industry and its market is mounting. According to the World Tourism Organization (WTO, 2006) tourism contributes to the local economy largely by raising foreign exchange earnings, creating employment and investment opportunities, increasing government revenues, improving the country's good reputation, and supporting all sectors of the economy, as well as the economy of the local community.

The world has witnessed a huge increase of foreign tourism between 1960s and 1970s (the era that was described as the era of explosion of tourism and prosperity) since the international tourism increased from 120 million tourists at the beginning of the 1970s to more than 325 million in 1985. This number reached 864 million tourists in 2006 (WTO, 2007). However, this number has increased now as the flow of international tourists reached about 900 million tourists in 2007. The volume of revenues is about 764 billion dollars in 2006, as estimated by the International Tourism, and rose to about 800 billion dollars in 2007 (WTO, 2008).

Tourism is known to provide 260 million direct and indirect job opportunities, a figure that is approximately 10% of the total international labor force, distributed throughout various countries of the world. Tourism became the first main industry in the world, even in industrialized nations such as Britain, U.S.A., and Japan. The number of individuals working in tourism sector in these countries is more than those working in any other industries.

Studies show that the number of tourists worldwide is expected to reach up to 1.6 billion people by 2020; spending more than two trillion dollars a year. According to the World Tourism Organization, tourism will continue its growth at a rate of 4% annually. The world tourism movement at the present time is characterized by regional distribution. Tourism is being affected by the prevalence of tourism as the industry flourishes throughout the world. The World Tourism Organization has estimated that 80% of international tourism is moving within its geographical territory with Europe at the top of the classification.

In Asia, regional tourism constitutes only about 38% of the total tourism movement; and this percentage drops to 25% in Africa. The reason for this discrepancy in the amount of regional international tourism is due to varieties of factors. Among these are the type and nature of tourist services and facilities available, followed by the country's ability to catch up with tourism fashion. In addition, another factor is the development of the infrastructure and superstructure as well as the success of its marketing programs and the competitive policies (WTO, 2002).

Table 1.1 Numbers of Tourist arrival by Region

Territory	1995	2000	2010	Annual growth rate 1990 - 2010
Europe	337	397	525	3.1
Asia and the Pacific	84	122	229	7.6
South & North America	112	138	195	3.7
Africa	19	25	37	4.6
The Middle East	11	14	21	4.9
South Asia	4	6	11	6.7
Rest of the world	567	702	1018	4.1

Source: (WTO, 1995 – 2010)

Table 1.1 above reflects the magnitude of increase in tourist number in six regions of the world for the period of 1995-2000. In Europe for instance, the number of tourists rose from 337 million in 1995 to 397 million in 2000 and it is predicted to reach up to 525 million in 2010. Similar growth trends are seen in Asia, the Pacific, South and North America, Africa, South Asia and the Middle East. The highest percentage of growth is in Asia and the Pacific (7.6%), followed by South Asia (6.7%) and the Middle East third by (4.9%).

Scholars (such as Chew, 1987; Gunn, 1988; Inskeep, 1991; Martin & Witt, 1988, among others) argue that the infrastructure base of a country is a determinant of the attractiveness of a tourism destination, as in the next example: tourism in two countries: Yemen and Australia. Although the country of Yemen is rich in historical sites such as Ma'erb, its tourism industry is suffering greatly. One of the reasons for this tourism malady in Yemen is attributed to weak infrastructure.

Poor tourism facilities usually cause other aspects of tourism to suffer too: low level of investment, high unemployment rate, and eventually, very poor revenues are generated (Alkhawaree, 2007). On the other hand, Mistilis (1999) states

"The forecast growth for tourism in Australia is dependent on the maintenance of a number of items in the supply site of tourism; including public infrastructure, there has been growing government recognition of the critical need for adequate public infrastructures" (p40).

From these two cases we can see that tourism in the country of Yemen suffers due to poor infrastructure, while officials in Australia are working hard to improve tourism in their country by enhancing public infrastructure. Therefore, the growth of tourism in any given country depends crucially upon the availability of adequate infrastructure. The importance of the various sets of effects depends on the regional characteristics, such as the local infrastructure (Throat, 1980).

1.3 Tourism Infrastructure in Jordan

Tourism in Jordan is one of the largest foreign exchange sources, whereas the sector revenues account for 9% - 14% of the GNP. Many projects relevant to tourism are underway. For example, the government has recently borrowed around \$40 million from the World Bank for its second tourism development project. This project is to create proper accommodations, for an increase in sustainable eco-tourism in regions such as Petra and Wadi Rum. Moreover, tourism industry in Jordan has been heavily investing in hotels and other tourism activities, transportation and promotional efforts, (JTB, 2007). Furthermore, in the past two years, Jordan launched several projects in tourism infrastructure and recreational real-estate, concentrating mainly in the capital city of Amman, Aqaba, the Dead Sea and Petra (JTB, 2007).

Hence, these investments are diversified among a variety of housing projects serving different segments of tourists along with hotels and other relevant facilities (JTB, 2007). One of the most recent projects to be implemented is in the Abdali area in Amman. This commercial project includes 240 shopping stores, 200 luxurious apartments and 6 large hotel floors, restaurants and sport clubs. The project will also display a wide choice of cafes, restaurants and two Olympic size versatility yards. There is no doubt that this project will substantially contribute to tourism enhancement (MOTA, 2007).

1.4 Tourism in Petra

The red-rose rock city was forgotten for centuries until Swiss explorer Johann Ludwi Burchhardt, disguised as a Bedouin nomad, went into the area and rediscovered Petra in 1812. The ancient city was hidden behind impenetrable barrier of rugged mountains (Reid & Karz, 2006). Petra was the first Jordanian city to appear on the international tourist map. Tourism in this beautiful city began in 1921 in the form of small tourist groups. Nowadays, Petra is the first class Jordanian tourist site in terms of the number of visitors (MOTA, 2006). In 2005 the number of foreign tourists made up 80 percent of the overall number of tourists visiting Petra. In 2006 the number of foreign tourists increased by 10 percent compared with a year earlier, bringing the number of visitors to 337.2 thousand tourists, 90% of them foreigners (PAR, 2008).

A huge increase in the number of visitors occurred in 2007, in which 414000.5 tourists came to Petra, with an increase of 25 per cent from the previous

year. The reason behind this increase is that Petra became one of the Seven Wonders of the World (PAR, 2008). According to PAR (2008), its daily range of visitors to the ancient city of Petra is between 1,000 to 2,000 persons. The increase in the number of tourists visiting Petra requires continuous effort from the government to improve the tourism infrastructure for this unique city. However, the government should be cautious and try to avoid unpredictable negative impact resulting from the process of improving the tourism infrastructure.

1.5 The Important Role of Tourism

Tourism's economic benefits are touted by the industry for a variety of reasons. A claim of tourism's economic significance gives the industry a greater status among the business community, public officials, and the public in general. This often is translated into decisions or public policies that are favorable to the tourist community. Support is important to the tourism industry since it is an activity that affects the entire country. Tourism businesses depend extensively on each other as well as on other businesses, government agencies, and residents of local regions (Khan, Phang & Toh, 1995).

Economic benefits and costs of tourism reach virtually everyone in a region in one way or another. Economic Impact Analyses provide tangible estimates of the economic interdependencies and a better understanding of the role and importance of tourism in a region's economy (WTTC, 1996).

Tourism's economic impact is, therefore, an important consideration in state, regional, and community planning and economic development programs. Economic

impacts are also important factors in marketing and management decisions. Communities need to understand the relative importance of tourism to their region, including tourism's contribution to economic activity in the area as following:

- Economic and technological development of nations by stimulation of the enhancement of basic infrastructure (such as airports, seaports, roads, sewer systems and electrical power).
- Contribution to the growth of domestic industries that supply the tourism industry (e.g. transportation, agriculture, food processing, commercial fishing, lumbering, construction and so forth).
- Attracting foreign investment (especially in the hotel and hospitality sector).
- Facilitating the transfer of technology (Adrian, 1995).

Furthermore, tourism is an economic activity that provides countries with income, creates jobs, reduces unemployment, fosters entrepreneurship, stimulates production of food and local handicrafts, facilitates cultural exchanges and contributes to a better understanding of the country and the world at large. Certainly, the changing dimensions of this vast, expanding industry brings into focus concerns over cultural, ecological, environmental, social, and political consequences of tourism (Wu, 2001).

In most developing countries that are rich in tourist attractions, tourism has emerged as a new energy for economic growth given its ability to produce foreign exchange and employment. A brief analysis of the economic impact of tourism for a developing country is vital to direct the policy anticipated to develop tourism and

increase its benefit on the economy (Dwyer & Forsyth, 1993). Tourism affects the economy through tourists' expenditures on various goods and services (Hazari & Sgro, 1995). Thus, tourist spending may be regarded as an inflow of foreign currency that can affect the exchange rate. This reduces the domestic costs of exports, which acts as a deterrent to exporters. More generally, the economic impact of tourism can be examined by analyzing its impact on the development of production, use of the factors of production, or on the country's balance of expenses.

Tourism can rejuvenate a physical area by helping to develop infrastructure and to improve environmental quality as well as to accommodate leisure facilities for residents (Ooi, 2002). Furthermore, tourism employs substantial number of workers; thus, creating high tax revenues. Most importantly, tourism is an important revenue generator because of its strong multiplier effects. It is argued that cities that do not compete for tourist expenditure stand a good chance of losing out in the increasingly competitive global environment (Fainstein & Gladstone, 1999). Today, a city is seen as a major tourist destination, or at least as having the latent ability of becoming one. In order to attract tourists and their expense money, cities compete with each other regionally, nationally, and internationally.

New tourism destinations are continuously emerging and marketing themselves as exclusively attractive places to visit (Holcomb, 1999). As a result, today's tourists have an ever greater range of potential destinations to choose from. Thus, to be able to draw people, cities have to submit something apparently unique. According to Costa (2001), eventually, only a small number of well managed and developed tourism destinations will be able to compete and flourish.

Tourism has become a well-known human activity and an important part of our modern lives (Smith & Brent, 2001). The act of travel has been argued to be one of the most significant elements in shaping our perceptions of places (Norton, 1996). Tourism provides direct geographical and cultural experiences, presenting an opportunity for tourists to better understand countries, societies, and environments. Tourism growth has affected tourist-receiving destinations economically, socio-culturally, and environmentally, although, impacts differ by destination, the significance of studying tourism impacts on developing nations is obvious because income for tourism management and negative impact alleviation are more limited (Sasidharan, Sirakaya & Derstetter, 2002).

1.6 Definition of Tourist Infrastructure

Several researchers (e.g. Althaher, 2001; Dowling, 1993; Smith, 1998; Weijner & Bosgra, 1999) articulated different definitions of tourism infrastructure. Infrastructure is the resources required for an activity. It includes services, institutions, facilities, transportation systems, public utilities, law and so forth. Infrastructure is the basic framework or features of a system or organization, economy and community Althaher (2001). Reports that, the first and foremost functional specification of a physical infrastructure is that the system is able to match supply and demand of the utility product and/or services on a range of time scale. Thus, tourism infrastructure relates to public sector responsibilities: transportation, parking, signage, water, and health (Smith, 1998).

Mohamed and Omar (2005) define tourist infrastructure as the entire infrastructure built for the tourists such as hotels, tourism agencies, information

centers and also shared infrastructure by both tourists and locals such as road network, public transportation, and sewage system and so forth. Researchers have identified two parts of tourism infrastructure, the first part represents local's infrastructure, which consists of building more schools and rehabilitation of the existing ones, worship places such as mosques, churches and temples and finally the opening of more local parks. While the other major part of the figure consists of what is called the super infrastructure, which means accommodations and services facilities deal direct with tourists such as constructing more luxurious hotels, motels, tourist information services and travel agencies, car rental agencies and elements supportive to tourism such as camp sites. Figure 1.1 consists of two main parts and a mediatory part comes in between.

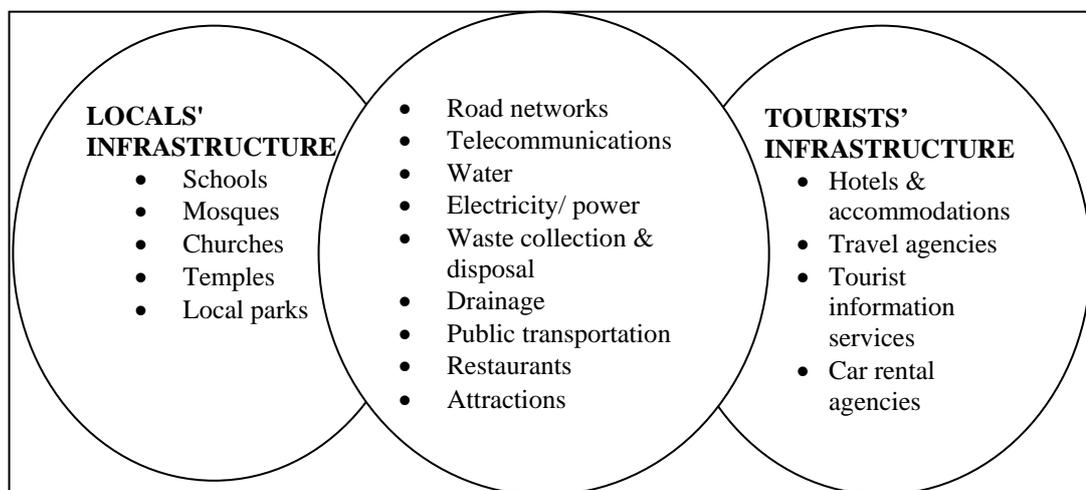


Figure 1.1: Facilities and Infrastructure Shared by Both Tourists and Local Population.

Source: Mohamed and Omar (2005).

Tourist infrastructure is also defined as services which enable tourists to enter and to move around the country with maximum of ease and minimum of obstacles, securing maximum enjoyment of their visit/vacation (Bhatia, 2002). The

infrastructure must be reflected in the sense of the present and the future by being able to contain the expansion and the increase in tourist activity over a long term (Lay, 1992). In summary, infrastructure includes the following:

- Water availability, in terms of quality and suitability for human use; as well as the availability of sewage disposal systems.
- Modes of transport and communications. This takes into account tourists knowing the means of communication and access roads, road network, distance among cities and tourist regions, the quality and the likelihood of development, such as water, land, and air transport (Khadaroo & Seetana, 2007).
- Telecommunications: This aspect consists of providing postal services, telegraph and mobile communication network. In addition, receiving and transmitting stations for radio and television must also be taken into account (Liaquat, 2000).

All international and domestic tourists are expected to use tourism infrastructure defined by WTO which includes:

- Accommodation,
- Transport (aircraft, buses, taxis, train stations),
- Roads and road signs,
- Water and sewage systems,
- Telecommunications,
- Conference facilities,
- Parks and public facilities, and

- Other elements, which secure tourist joy, a good visit and a safe, return to their home countries (Dowling, 1993).

1.7 Statement of the Problem

Infrastructure expansion and modernization are perhaps the single most important matter to travel and tourism in reaching its potential for wealth and employment opportunities. Many regions in the world are not in a position to reap the benefits of tourism simply because of the lack of infrastructure. In fact, if we look at the countries and regions within countries, the ones having adequate tourism infrastructure are those with the greatest benefits. The world's top 40 tourist generating and receiving countries have excellent tourism infrastructure.

Tourism is a vital sector in any country's economy. In many countries the income from tourism is an important source for their development. In order to make this sector more productive and more economically supported, it needs plenty of supports, building efforts and enhancement projects such as providing sufficient infrastructure and superstructure; otherwise, the tourist sites and attractions will stay without visitors (Hamami, 2003). The benefit from infrastructure investment, justified primarily for tourism may be shared by other sectors of economy (Bhatia, 2002).

Archaeologists classified Jordan as an open museum due to the fact Jordan has different and various remains, ruins and historical places. Jordan is well-known as the first place for mankind settlement and civilized stability on earth. There are several archaeological sites and signs to prove and to provide clear evidence that

Jordan was the first place for human settlement, such as Al Baydhaa near Petra city which was the first place for human stability and settlement which was established in 8 thousand years BC. Among the most important heritage sites in Jordan is Petra city (Rose City) which is a unique site and one of the Seven Wonders of the World (Reid & Karz, 2006).

Since Petra is considered the most important source of tourism and that tourism is primarily a service industry, improving and developing the tourism product are basically the main demand for developing the infrastructure of the heritage sites (PAR, 2006). One of the characteristics of underdevelopment is deficiency in basic tourism infrastructure, which lies as a root cause of a series of serious problems related to the development of tourism. Construction of primary infrastructure represents the foundation of any future economic growth even though the infrastructure itself is not functional. The tourist industry illustrates the elementary need for basic infrastructure. Today, it has the important benefit of being able to profit from existing infrastructure, and thus, to make a decisive contribution to the growth of the national economy. Moreover, the traffic of tourists arising from international and national tourism represents a reward for the capital invested, and can contribute to the financial efforts required for maintenance.

The satisfactory degree of development achieved in the specific sector permits major tourist progress, while giving further proof to the complementary character of tourism in relation to other sectors of the economy. Creation of basic infrastructure for tourist usage will also be of service to the other sectors of the

economy, such as industry and agriculture. The outcome can be better in equilibrium with the general economic growth (Gunn, 2002).

Identifying the importance of tourism infrastructure for developing the heritage sites is extremely useful for planners and decision-makers for drawing policies and specifying priorities for implementing projects and various programmers serving the tourism sites. Likewise, it helps the local residents in specifying the negative and positive effects in order to diminish the negative ones and to increase the positive ones.

To the best knowledge of the researcher, there has been no previous study conducted on the negative and positive impact of tourism infrastructure on developing the heritage sites in Jordan. This assumption was supported by Al-Quatmeen (2003) and Al-Taweel (2003) who reported that there is a lack of information regarding the impact of tourism infrastructure on developing the heritage sites in Jordan.

Since the local people are the best to know the positive and negative affects of the tourism infrastructure on the heritage site of Petra, it was very necessary to know their points of view as well as their attitudes towards the impact of tourism infrastructure on Petra. Thereby, the current study will hopefully help offer important findings based on the survey of the local residents' attitudes, and thus, the problem of this study existed to reveal the understanding of the impacts resulted from the development of the heritage site. It is also hoped that the findings of this study

will be as an official fruitful document, which could benefit interested officials in Jordan.

1.8 Research Objectives

The main objective of this research is to study the impacts of tourism infrastructure on the economic, environmental and social development of Petra, from the local perspectives. Specifically, this research focuses on the following sub-objectives:

- To examine the effect of positive and negative economic development of tourism infrastructure of Petra from local population perspective.
- To examine the effect of positive and negative environmental development of tourism infrastructure of Petra from local population perspective.
- To examine the effect of positive and negative social development of Petra tourism infrastructure from local population perspective.

1.9 Research Questions

The current research is designed to investigate the impact of tourism infrastructure on developing the heritage sites. four research questions were designed to achieve the research objectives. In one hand, the first four questions attempts to investigate the positive and negative (economic, environmental and social) impacts of tourism infrastructure on the development of Petra from the local residents' perspectives. On the other hand, the last research question was designed to investigate the differences in the local population opinions that can attribute to

demographic factors. Therefore, the study postulates seven main questions, as follows:

- What is the impact of positive and negative economic development of tourism infrastructure of Petra from local population perspectives?
- What is the impact of positive and negative social development of Petra tourism infrastructure from local population perspective?
- What is the impact of positive and negative environmental development of tourism infrastructure of Petra from local population perspective?
- Do the opinions of Petra local population concerning the positive and negative economical, environmental, and social impacts of the development of Petra tourism infrastructure vary by age, gender, level of education, and occupation groups?

1.10 Research Hypotheses

These hypotheses are articulated to analyze the variations in the opinions of local residents of Petra region that can be attributed to age, gender, educational level and occupation. In this context, there are four hypotheses concerning the differences among the respondents by age, gender, level of education, and occupation groups the positive (economic, environmental and social) impacts of the development of Petra and the negative (economic, environmental and social) impacts of the development of Petra. Four research hypotheses were formulated as follows:

H₀₁: There are no significant differences in the opinions of local population of Petra concerning the positive and negative economical, environmental, and social impacts of the development of Petra infrastructure that can be attributed to age.

Ho2: There are no significant differences in the opinions of local population of Petra concerning the positive and negative economical, environmental, and social impacts of the development of Petra infrastructure that can be attributed to gender.

Ho3: There are no significant differences in the opinions of local population of Petra concerning the positive and negative economical, environmental, and social impacts of the development of Petra infrastructure that can be attributed to educational level.

Ho4: There are no significant differences in the opinions of local population of Petra concerning the positive and negative economical, environmental, and social impacts of the development of Petra infrastructure that can be attributed to occupation.

1.11 Conceptual Framework

There various factors affect the development of the heritage sites. For example, Abu-Ayash, Alharamaey and Altai (2005) report that the development of the tourism infrastructure depends mainly on several elements and they summarized these factors as follows:

- Water supply system;
- Telecommunication net system;
- Electricity supply;
- Sewage water system;
- Transportation (cars, buses, aero planes, trains);

- Hotels;
- Restaurants, and;
- Medical care.

They also identified the economic, social and environmental (positive and negative) factors that impact the development of the heritage sites as follows:

- Positive economic impact
 - Provides employment opportunities;
 - Generates supply of foreign exchange;
 - Increases income and gross national products;
 - Improves tourism infrastructure, like Hotel, Transportation, and;
 - Attract foreign investment.

- Negative economic impact:
 - Causes inflation of land value;
 - Increases demand for local products, raising price on food and other products;
 - Diverts funds from other economic development projects;
 - Creates leakage through demand for imports;
 - Results in seasonal employment;
 - Displaces traditional patterns of labour, and;
 - Involves costs of providing the construction and maintenance of infrastructure.

- Positive social
 - Creates favourite image of the country;
 - Provides recreational facilities for residents as well as tourists;
 - Facilitates the process of modernization;
 - Provides opportunities for education;
 - Encourages pride in local arts, crafts, and cultural expressions, and;
 - Preserves cultural heritage.

- Social negative impact
 - Creates resentment and antagonism related to dramatic differences in wealth;
 - Causes overcrowding, congestion, traffic jams;
 - Invites moral degradation resulting in increased crime, prostitution, drug trafficking, and;
 - Causes conflicts in traditional societies and in values.

- Positive environmental impact
 - Justifies environmental protection (marine reserve) and improvement;
 - Protects wildlife, and;
 - Encourages education of value of natural based tourism.

- Negative environmental impact:
 - Destroys coral and coastal dune;

- Fosters water pollution, air pollution and solid waste, and;
- Tramples delicate soil and beaches.

The development of tourism infrastructure, the improvements and upgrades to existing tourism infrastructure are also of crucial importance. These improvements would also confer benefits upon the resident population by providing them with amenities, which they previously had not enjoyed. Furthermore, the provision of tourism infrastructure may provide the basis to serve as encouragement for greater economic diversification. Thus, identifying the positive and negative impacts of tourism infrastructure plays an important role in the development of the heritage sites. For the purpose of this research the following figure shows the proposed conceptual framework adopted from Abu-Ayash, Alharamaey and Altai (2005).

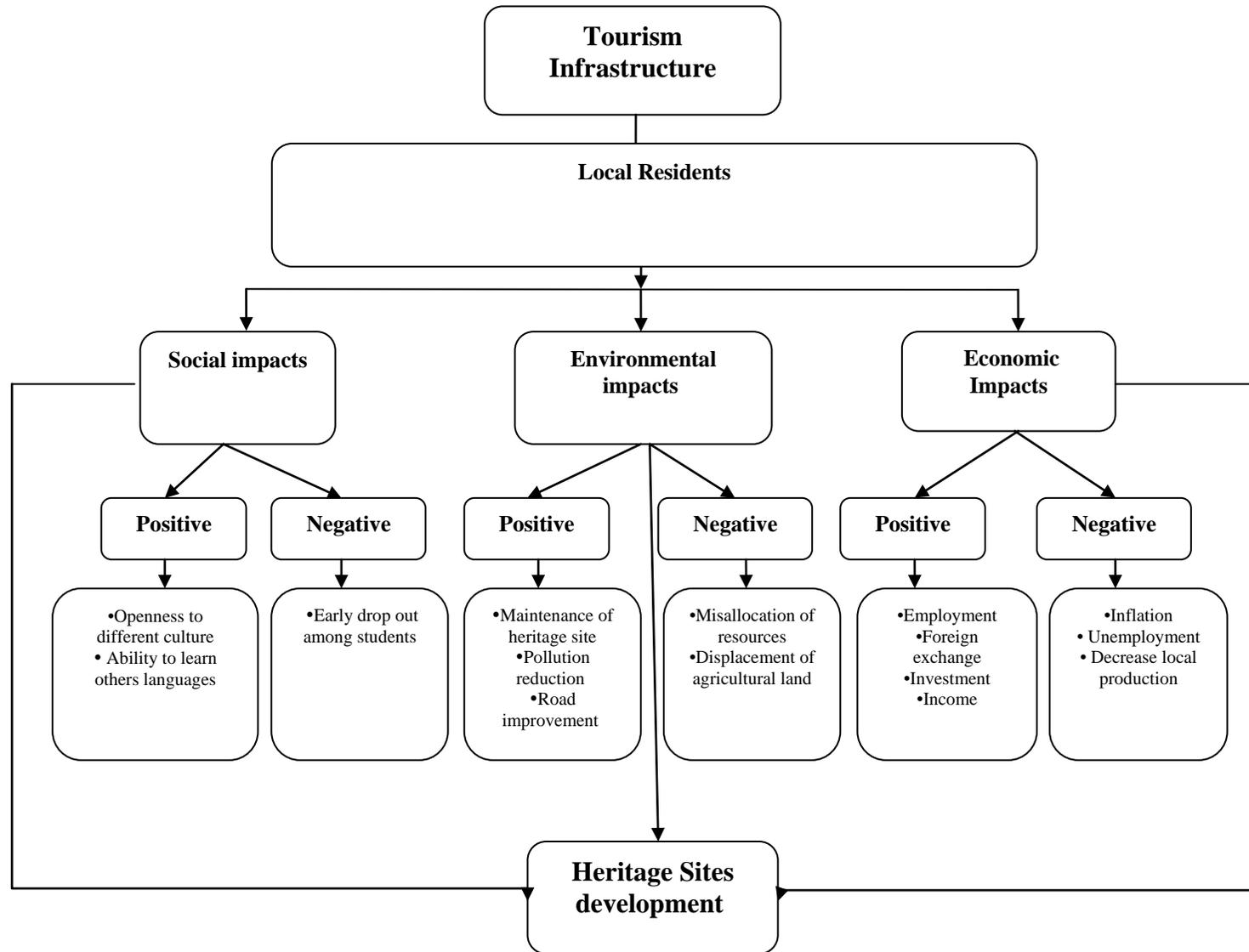


Figure 1.2 Proposed Conceptual Framework

Figure 1.2 shows that the tourism infrastructure evaluated from the local residents points of view, based on their age, gender, academic level of education and their occupations. As it can be seen in the above figure, local residents can determine the impact of tourism infrastructure on the development of the heritage site. The fact is the development of these components is highly dependent on three main factors, economical, social and environmental. The study framework shows that the economical, social and environmental factors have two impacts, positive and negative, which finally lead to the development of the heritage sites.

1.12 Significance of the Study

Petra is an area which can become one of the main Jordanian tourism attractions in the near future. In fact, it has been noticed that the area of the present study has not been covered by many previous research. This study will identify the impact of tourism infrastructure in developing the heritage sites from the local residents' points of view. The identification of the impact of tourism infrastructure in the development of the heritage sites can be a guide to policy makers and economic developers in terms of increasing the social, environmental and economic impacts.

Therefore, this research is considered as one of the most important studies in the field of tourism infrastructure in Jordan. The importance of this study comes from being a reference for future studies. It tackles a subject considered to be crucial in the tourism industry. It contains first hand data derived from local residents and tourists who benefit most from the development of infrastructure and ultimately from thriving tourism.

The significance of this study stems from the knowledge of the contributive factors in developing tourism infrastructure in Petra to attract tourists (foreign and local) to revisit Petra. Research results should demonstrate that investment in tourism infrastructure generates rewards for the tourism sector. The importance of this sector will promote economic development, particularly because Jordanian economy depends on the service sector.

1.13 Research Methodology

For the purpose of this research a mixed method design (qualitative and quantitative) was employed. The research data was collected by using a mixed method techniques, in fact three methods of data collection have been used in this study, questionnaire was answered by the local residents, interviews were used with the staff of the authority of Petra, and observation and field visits.

1.14 Limitations of the Study

There are some limitations that have emerged during the survey process; these limitations are:

- This study is limited to the area of Petra.
- Lack of confidence among the people of Petra in their representatives in government and in the authority of the Petra Territory; which somehow negatively affected the results of the survey.

1.15 Operational Definition of Terms

Economic Impact: This includes the monetary costs and benefits which result from the development and use of tourist facilities and services such as investment, employment, income, foreign exchange, and increased prices (Mak, 2004).

Environmental Impact: This includes changes to the natural environment, pollution (air, water, soil), vegetation and wildlife, congestion, burden of material in the built, restoration of historical building and infrastructure (Mieczkowski, 1995).

Social Impact: This is concerned with changes in the way of life of residents of destination area such as suffering of life, crime, alcoholism, drugs, prostitution, morality, cultural education and quality of life (Orbasli, 2000).

Heritage Sites: An archaeological site is defined by Willey and Phillips (1958) as the smallest unit of space that marks the location of a single unit of settlement and is usually covered with artifacts or components indicating former occupation.

Tourism: Murphy (1982) defined Tourism as "the temporary movement of people to destinations outside their normal places of work and residence, the activities undertaken during their stay in those destinations, and the facilities created to cater for their needs."

Tourism Infrastructure: Abu-Ayash, Alharamaey and Altai (2005) define tourism infrastructure as the restaurants, transportation, electricity, water supply, health care,