Estimating the Economic Impact of Tourism in the North of Jordan through the I-O Approach

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Abstract:

The potential economic benefits derived from tourism are tremendous and provide an attractive form of economic development. The tourism sector ranked as one of the most important foreign exchange sources for the Jordan economy with about seven US billion Dollars in 2017.

This study aims to estimate the economic impact of tourism in the north of Jordan; a survey has been conducted in Jordan in 2017 to estimate revenue generation from fees, lodging, food and other activities

The Input -Output approach has been used; results revealed that estimated total output of tourism activities in the study area is about seventy million UD Dollars.

Keywords: *Economic impact, tourism input-output approach.*

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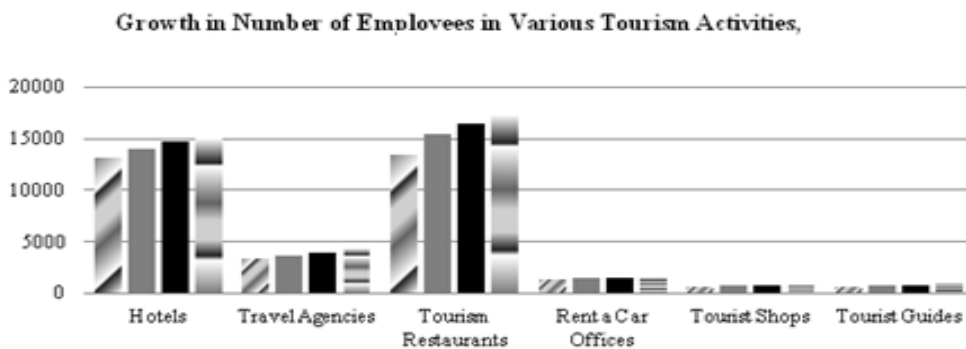*[3]Lecturer, School of Archaeology and Tourism, the University of Jordan, lubhijawi@hotmail.com*

1. Introduction

Tourism is a growing industry all over the world and is largely known for its sustainable approach to the interactions between tourists and the local destination. Jordan is one of the most widely recognized historical and natural sites in the world. Because Jordan is a destination for both outdoor enthusiasts and culturists interested in the Middle East, tourism has the potential to be a main economic driving point, especially among the local community because of their close interaction with the surrounding environment of the touristic sites.

Jordan's sustainable tourism industry is able to exemplify Jordan's rich heritage to both domestic and international travelers. Tourist activity is a major contributor to the Jordan national economy, accounting for 18.7% of GDP. Tourism ranked as one of the most important foreign exchange sources for the Jordan economy with USD 7,633 billion in 2017 (WTTC, 2018) .

Figure 1. *Growth in Number of Employees in Various Tourism Activities*

Many sectors benefit from tourism activities, including airlines, hotels, restaurants, ground transportation, and local communities. According to the WTO, tourism in the Middle East is expected to increase 50% between 2010 and 2020 (UNWTO, 2017). Jordan has a unique tourism market compared to other parts of the region; it is home to several attractions, and can accommodate different touristic preferences and needs.

This study aims to estimate economic impacts on the local economy based on the 2017 data, and analyze the factors effecting visitors' decision to visit the north of Jordan. The purpose of the research was devoted to estimate the contribution of tourists' expenditure to local economy for the study area in the north part of Jordan (Om Qais, Jerash, and Ajloun).

2. Literature Review

Tourism can play a major role in reducing poverty rates among local communities (Glaesser, Keste, Paulose, Alizadeh, & Valentin, 2017; Cárdenas-García, Sánchez-Riv, & Pulido, 2013). This type of businesses uses simple technology and locally available resources. For example, handicraft production requires a small amount of capital investment compared to industrial products, and new producers face few barriers to entry (Durham and Littrell, 2000).

Cultural and heritage resources have the potential to generate a wide range of economic benefits for local communities. Communities can utilize heritage and cultural assets by sharing it with tourists (Murzyn-Kupisz, 2012; Daldanise, 2016). For example it has the potential to greatly impact neighborhood and property values, (Caton and Santos, 2007). These economic benefits come from rehabilitation and adaptive reuse of heritage buildings and cultural characteristics embodied in the place (Anglin, 2011; Bertacchini and Segre, 2015).

Tourism for a country like Jordan, with scarce natural resources such as water, is often a critical sector of the economy. Jordan experienced a total contribution of Travel & Tourism to GDP of 18.7% in GDP in 2017, and is forecasted to rise to 23.5% of GDP in 2028. The tourism sector ranked as one of the most important foreign exchange sources for the Jordan economy with USD 7,633mn in 2017. Jordan's National Tourism Strategy for 2028 goals include increasing tourism earnings to USD 13,564 mn by 2028, and to rise jobs to 332,000 in 2028 through a partnership with the private sector ("WTTC," 2018). According to the Jordan National Tourism Strategy cultural heritage tourism is the top priority to be developed in order to achieve these goals.

Economically, tourism brings in a new type of businesses to the local community, creating new jobs and new forms of income for them. But, there is some probability for the local community to become reliant on foreign forms of income, which is not sustainable if not employed well, and it also takes away from traditional forms of revenue (Song, Witt and Li, 2008).

Tourism provides an opportunity for cross-cultural dialogue and allows people from both socially sides to learn about one another (Getz, Andersson and Carlsen, 2010). The negative social impact of tourism could outweigh the positives, where there is a loss of culture and tradition within the community. This includes a movement from traditional type of economic activities "agriculture" to new types of businesses (Almeida García, Balbuena Vázquez and Cortés Macías, 2015; Yolal, Gursoy, Uysal, Kim and Karacaoğlu, 2016).

Environmentally, despite that tourism has negative impacts it helps to sustain the ecosystem as well as to provide a platform for education about the environment. But, the increase in tourism has the potential to have amplified environmental degradation (Abuamoud, Alrousan, Aziz, Malek and Bader, 2015). The importance of cultural heritage tourism was growing rapidly over the last decade; it has

promoted the economy in many countries around the world (Pratt *et al.,* 2015). These countries used cultural and heritage resources as a tool for community economic development. The better the cultural heritage product the greater the chance that tourist will spend more money within a region or country (Disegna and Osti, 2016).

In addition to the importance of cultural tourism in Jordan festivals, events, beautiful scenic heritage, sites, architecture, and arts are attributes of significance of the region. Other studies get concerned about why some people are motive to travel, found that education level and income are among the factors that motivate people to travel to discover cultural and historical areas, some other people travel where cultural and historical factors is a motive beside other factors such as business or visit relatives (Bieger & Laesser, 2002; Abuamoud, Libbin, Green, & Rousan, 2014).
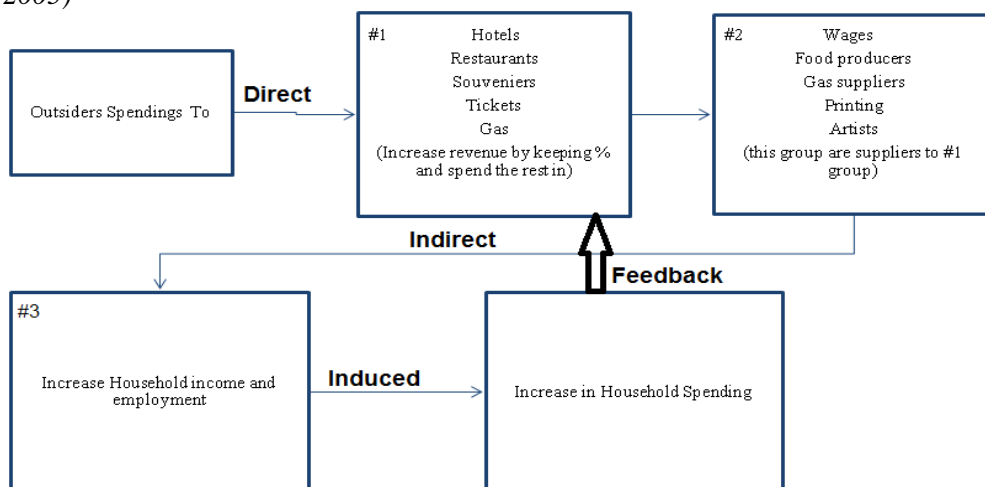
However, estimating the economic impact of tourism is not an easy process due to its linkage to many other economic, social, and political situation (Dwyer, Forsyth, & Spurr, 2004). Previous studies approached economic impact of tourism through several methodologies to measure the impact of tourism on the economy. Choosing a theoretical model to study the impact of tourism on the economy depends on the reason of the study and the availability of information. The Tourism Satellite Account (TSA), Computable General Equilibrium (CGE) models, Social Accounting Matrix, and Input-Output Analyses (I-O) were heavily used in this type of studies (Brida, Pereyra, & Such 2007; Kweka, 2004).

The rapid increase in tourism over the last three decades or so has not created a primary tourism sector in the study area. For almost all of the male youth living in the study area, tourism is not the best option for employment, as it is not fairly stable and feasible, almost all male residents of the region between 15 and 45 years of age work in another governmental or private sector, while few people work in tourism at least part of their time.

To estimate the economic impact of tourism in the northern part of Jordan, the study used the information for the number of tourists and expenses that published by the Ministry of Tourism, in addition to the primary data through the questionnaire. The process generating the total economic impact is illustrated in Figure 2 which includes the direct, indirect and induces impact. To explain how to get the total economic impact (direct + indirect + induced), we consider that the new arrivals from outside the study area raise the demand on some goods and services through spending money (direct impact). To meet this new demand, suppliers will purchase or produce more goods and services from other firms in the region (and out of the region which called leakage), who will in turn purchase more goods and services from other firms to meet new demand (indirect impact).

The demand on new goods and services will require companies to hire new people or increase current working hours per employee to increase production which means higher incomes, households as a result will purchase more goods and services which leading to further expansion of the economy (induced impact).

Figure 2. *Direct, indirect and induced economic impact. Modified from (Groves, 2005)*

2.1 Study area

The total area of the study is about 2400 squared km, with a population more than 1.5 million; it includes three governorates Ajloun, Jerash and Irbid. Ajloun and Jerash are famous for lush vegetation, thick green forests, and sites of antiquity that rank among the best in the Middle East (RMW, 2013). They are about an hour's drive to the north of Amman, the area also boasts much biblical history (Siyaha, 2013). Visitors can reach Ajloun from the capital of Amman. Umm-Qais as a part of Irbid Governorate is situated to the north west of Jordan the Governorate is surrounded by Yarmouk and Jordan Rivers to the north and west, the area is famous for historical, cultural, ecotourism, and sightseeing.
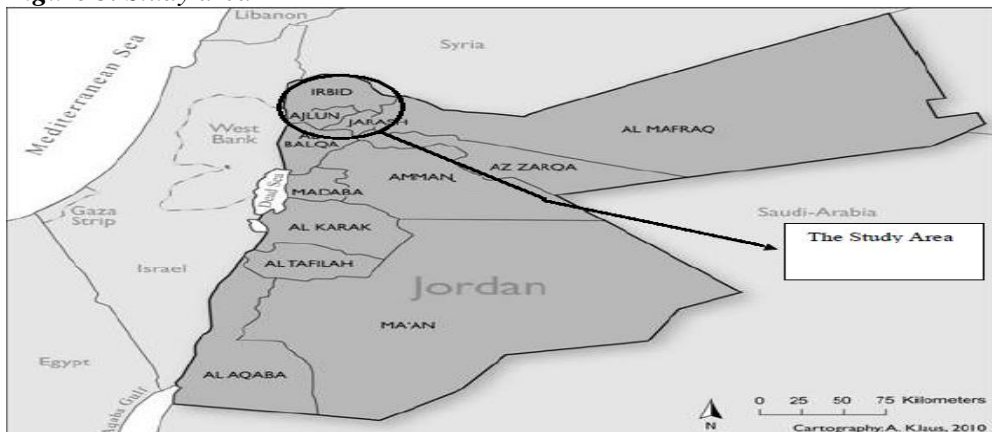
2.2 Data and Methods

This study focuses on the Northern governorates of Jordan (Om Qais in Irbid, Ajloun, and Jerash, Figure 3). Primary data was collected through a questionnaire developed as a means to collect data. The content of the questionnaire was based on the 2017 survey which was conducted by the researchers. The surveys were conducted on-site (that is, three sites Om Qais, Ajloun, and Jerash) between April 6 and July 7, 2017, with domestic and international tourists as respondents, using a convenient sampling method. Five trained college students were interviewed tourists

while they were on their way out of the sites or during they were at the site. A total of 622 usable surveys were collected.

There are several models commonly used by economists to estimate the economic impact of tourism in specific area. Because of the difficulty of measuring effects, all of the models have limitations; still, economists generally agree that the models can provide an approximate measure of the indirect and induced spending, total jobs, and personal income generated by a given amount of direct spending in a particular geographic area. In conducting this analysis of tourism economic impact in the study area, the study applied the Input-Output, I-O model and we limit the estimates of direct spending to those expenditures that could be identified as having occurred.

For example, the spending associated with a catered event on the region is counted as direct spending in the location of the vendor providing the catering. On the other hand, the estimates of direct spending do not include spending that cannot be attributed to the location where the actual purchase or expenditure occurred. For example, the estimate of direct tourism spending for the City of Ajloun does not include payment for purchasing goods from Amman, since the purchase itself does not reflect the actual location where the supermarket store took place. There is another important note about the assumptions regarding the geography of impacts; jobs are counted in the location of the employer, while payroll is assumed to reflect the home address of the employee. For example, some of restaurant's employee will be from cities other than Ajloun.

Figure 3. *Study area*

2.3 The study model

There is considerable interest in evaluating the economic impacts of tourism as an important source of income for various regions. Choosing a theoretical model to

estimate the direct or indirect impact of tourism on the economy depends on the reason of the study.

For the purpose of this study the Input-Output Model I-O has been applied to estimate the economic impact of spending. Input-output model is one of the most applicable and common tools to assess the impact of tourism in the economy. Input-output analysis was originally developed in the 1930s by the economist Wassily W. Leontief. The I-O Model considered the most accurate and complicated among the methods for estimating economic impacts of activities (Abuamoud, Libbinb, Greenc, & AlRousan, 2014). I-O analysis was initially used as a tool to help analyze national economies. The model provides more sectoral detail in the multipliers, and gives users control over model assumptions, and calculation methods.

Some criticism for the I-O models that they are inadequate for estimating economic impact since they ignore important parts of the economy has been made by Clark, Dent and Watts (2004). However, input-output models are more applicable with studies designed to investigate the role of tourism in generating employment and income in the economy. Additionally, economists generally agree that these models can provide an approximate measure of the indirect and induced spending, total jobs, and personal income generated by a given amount of direct spending in a particular geographic area.

Economic impacts could be estimated in terms of employment, spending, sales, tax revenues income, or value added. Acquiring the data to estimate economic impact of tourism can be made through surveys and various visitor counting methods. Average spending of tourists on trips has been used in this study, by sampling 622 usable questionnaires at destination areas. Because spending varies widely across the respondents, we used a segmented approach. To estimate the direct impact of visitation to the study area we applied the following model:

Total value added impact = $\sum$(JOD spent $\times$ total value added ratio)　　*(equation 1)*
*Economic impact = Number of Visitors * Average spending per visitor * Regional Multipliers*　　　　　　　　　　　　　　　　*(equation 2)*

3. Results and Discussion

This study focused primarily on conducting an estimation of economic impact analysis of the tourism activities in the study area. The current study surveyed 646 tourists visited the northern sites in 2017, where 24 questionnaires excluded from the analyses because respondents did not answer some questions. To identify arrivals from in and out of the study are, the nationality question was used. About 39% of the responses were from out of Jordan, another 61% are Jordanian tourists and about 92% of the 61% are from the north region of Jordan and the rest were from another governorates (Tables 1 and 2).

The questionnaire asked respondents about number of adults and children coming as a group. It has been found that adults (above 18 years old) among the study sample consists of 62% while 38% were children, which indicated that 380,733 adults was among the total of 614,085 visitors to the study area (Table 1). The survey collected expenses information per individual in major five categories (tickets, hotel, food, transportation, and souvenirs expenses) all expenses information collected through the survey are beneficial for the analyses. As shown in Table 3, a total expense in the five categories was $269,407. Most of the expenses were spent for food and transportation with 43% and 24% respectively.

Table 1. *Number of Visitors by Nationality, 2017**

Area	Foreign	Jordanian	Total	Percent	adults 62%	kids 38%
Jerash	165,559	89,259	254,818	**68%**	**157987**	**96831**
Ajloun	57,989	143,645	201,634	**24%**	**125013**	**76621**
Om Qais	21,412	136,221	157,633	**9%**	**97732**	**59901**
Total	**244,960**	**369,125**	**614,085**	**100%**	**380733**	**233352**

Table 2. *Visitors information*

Source	Sample	%	Total
Total visitors- OUT[1]	240	39%	244,960
Total visitors -IN[1]	382	61%	369,125
Total	622	100%	614,085

Table 1 shows the demographic profiles of the respondents. The majority of them were females (62.5%), married (55.6%), over 35 years of age (60.7%), had a high level of education (58.3% of respondents had attended college or had a bachelor's degree or higher), were from the northern governorates or the surrounding communities (59.0%). Of those that were not from the northern governorates or the surrounding communities, around 4% resided within a 20 to 50 km radius of northern governorates, while 2% were from areas within 51 to 100 km of northern governorates. Very few percent (1.22%) lived further than 100 km from the location.

Table 3. *Demographic characteristic of respondents*

Item	Percentage
Gender Male Female	 37.5% 62.5%
Age 18-24	 22.5%

25-34	16.9%
35-44	17.5%
45-54	17.5%
55-64	13.7%
Over 65	12.0%
Marital status	
Single	40.8%
Married	55.6%
Other	3.6%
Education	
High school or GED	15.0%
Associate degree	14.7%
Bachelor's degree	20.3%
Graduate degree	23.3%
northern governorates or the surrounding area	59.0%
First-time to the area	
Yes	30.6%
No	69.4%
Number of visit	
2	21.5%
3	13.7%
4	10.9%
5	6.5%
More than 5	47.4%

This domestic type of tourism is considered as social event and caters to families and friends because many respondents (90.9%) came in a group of two or more. Half of the respondents (50.3%) came in a group of 5; the average group size 5.42 persons. For those who brought children, the average number of children in a group was around four.

The source of information that respondents used to find out about the region showed that "word-of-mouth" was the most-often used source of information (66.0%) for the visit. This was followed by previous experience (18.8%), and social media (15.2%). Respondents were asked to write the amount that they spent during the visit on food & drink, transportation, souvenirs, gifts/arts and crafts, and "Other. The results revealed that on average respondents reported spending $85 during this visit. Of respondents, the average amount spent on food / drink and transportation was $37 for each, while the average spent on Tickets was $6 on average.

No doubt that source of expenses received by local cultural activities is an important issue to consider when interpreting any regional economic impact analyses. In general, regional impact models provide better assessments when the vast majority of money flows into the economy from outside the study area. Because attracting people from outside the geographic area we are studying will bring new money to

the region versus redistributing existing money in the same region across different local sectors.

Table 4. *Expenses information*

Area of Expenses	Tickets	Hotel	Food	Trans	Souv	Total
Total spent (study sample)	$3,701	$1,586	$21,148	$21,148	$1,586	**$49,169**
Percent of the total	8%	3%	43%	43%	3%	**100%**
Average expenses per person	$6	$3	$37	$37	$3	**$85**
Estimated total economic impact for 12months	$3,930,144	$1,682,593	$22,444,807	$22,444,807	$1,682,593	$52,184,943

Survey results contributed to estimate the economic impact using IMPLAN to estimate the direct, indirect and induced impact in other local economic sectors such employment, income, and taxes. And report the multiplier used to describe the response of the economy to a change in demand.

Table 5 shows the total impact (direct, indirect and induced) for the festival, is about 33 employment opportunities were opened and $17,221,031of total impact. Total tourists to the study area reached 614,085 tourists. All visitors spent $52,184,943. Hereof about $16,657,434 was a form of taxes, about 24,986,151 as form of value added, and 27,762,390 total output Visitor expenditures generated 34 full time jobs.

Table 5. *Summary of economic Impact*

Impact Type	Employment	Labor Income	Value Added	Output	Total Impact
Direct Effect	12	$12,524,386	$18,786,579	$20,873,977	$52,184,943
Indirect Effect	10	$1,628,170	$2,442,255	$2,713,617	$6,784,043
Induced Effect	12	$2,504,877	$3,757,316	$4,174,795	$10,436,989
Total Effect	34	$16,657,434	$24,986,151	$27,762,390	$69,405,974

4. Conclusion

The results revealed the majority of attendees were females, between18-34 years old, had a high level of education, repeat customers, regional residents, and, most typically came in groups of two or more. Word-of-mouth was respondents' best source of information, the majority of their spending was on food/drink, and transportation. Most respondents reported being satisfied with the overall experience of the event, friendliness of employees, and location, in descending order. They were less satisfied with transportation/parking. This type of visitation enjoys very strong customer loyalty as the majority of respondents stated that they would likely repeat this experience again as well as recommend it to a friend or relative. The economic impact on local communities was important and generates jobs and new income.

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