

Globalization and its Impact on the Efficiency of the Tourism Industry Selected Persian Gulf Countries (1998-2008)

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Abstract. In developing countries which are facing with difficulties such as high unemployment, limited Exchange resources and Single-product economy, tourism development is so important. Emphasize the importance of tourism to the Persian Gulf countries, It is because of these countries have potential tourist attractions like business, religious and entertainment attractions.

The aim of this study is estimating the technical Efficiency of tourism industry for 7 Persian Gulf countries between 1997- 2008, that has performed with Using a production function in the form of Cobb – Douglas. Through the method of the stochastic frontier analysis method based on panel data provided by Battese and Coelli(1995). This method uses an iterative maximum likelihood estimation to simultaneously estimate both the coefficients of production factors and coefficients of effective factors on technical inefficiency.

Results of the Estimations in the tourism industry production function for selected countries show that, respectively inputs Capital investment of tourism, Total number of employees in the tourism industry Government Travel and Tourism Expenditure and eventually the cost of Technical Advertising Tourism Industry can be influenced tourism function. Also all three considered factors on inefficiency, that is, the social globalization, political globalization, and the number of phone lines available have negative effect on the Tourism technical inefficiency; this means that with increasing numbers of each of these factors, technical efficiency of tourism will increase.

Keywords: Tourism, technical Efficiency, stochastic frontier analysis, Persian Gulf countries

1. Introduction

What today in definition of tourism term has been accepted by the majority is spread of this term. We can consider three important features for tourism, the first feature is that in most of the time, you cannot see or test this service before buying, meaning that the test is done after the purchase. Second feature is that, tourism services will be consumed on the purchase place and are not transferable and handling. And third, people and places of services are part of the service, so tourism is included in many sectors of society. These three features show, people who live and work in a specific place, just do not produce goods and services, however many of them are part of the goods and services produced.

International tourism is considered as a major source foreign exchange income in countries' export sector, So that Statistics released by the World Travel and Tourism Council indicate that the industry has been able to cover the main source of exports for 83% of developing countries that can be considered as a factor for domestic workforce hired and a source for economic growth. Also can say, The tourism industry in the world is the third high-income industry after oil and automotive industry . According to provided statistics, annually by 3.5 billion travel happen in the world, which 800 million of these travels are between countries, and two billion and 800 million are internal travel (World Travel and Tourism Council, 2006).

In various studies, many interpretations of efficiency have been provided, Peter Drucker, and Farrell (1957), have defined the efficiency of a firm respectively, as doing works correctly, and production an enough output, more than a given amount of inputs. But about the efficiency of the tourism industry, industry's success is considered in producing maximum service (and output) in order to attract tourists from

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specific factors (inputs). Few studies have been conducted in the tourism industry efficiency, which can be noted, the study of Peypoch and Solonandrasana (2006), Chen (2006), Cracolicia, Nijkamp, Rietveld (2006), Honma, Hu (2009), Chen, Hu, Jou Liao (2010).

In this study the selected case study's countries are: Bahrain, Iran, Kuwait, Oman, Qatar, Saudi Arabia and United Arabic Emirates, and Hypotheses are presented as follows;

- Capital investment of tourism on the selected countries is ineffective.
- Government Travel and Tourism Expenditure on selected countries' tourism production function is ineffective.
- Total number of employees in the tourism industry on selected countries' tourism production function is ineffective.
- The cost of Advertising Tourism Industry on selected countries' tourism production function is ineffective.
- Each of the selected countries do not have economic inefficiency in tourism industry

2. Model and Estimation Method

Stochastic frontier production function, is defined as a maximum possible output for a set of inputs, therefore this function defines a frontier, observed output deviations of this frontier depends on an error term with two components, that the first one is the disturbance a random process and the second is the technical inefficiency.

The superior of this estimation method than the other methods is that in estimate of the production function the Average points not be considered but only the part of the frontier points take into account. With regard to the linear logarithmic form Cobb – Douglas function, for tourism's stochastic frontier production function we will have;

$$\ln Y = \ln A + \alpha \ln(CI) + \beta \ln(GT) + \delta \ln(AD) + \gamma \ln(TE) - u + v \quad (1)$$

Where; Y is Travel and Tourism Demand in billion dollars, CI is defined as a Capital Investment in tourism industry in billion dollars, GT is Government Travel and Tourism Expenditure in billion dollars, AD is defined as The cost of Advertising Tourism Industry in billion dollars (Visitor Exports), and TE is Total number of employees in the tourism industry, including tourism- related industry workers, airline industry, travel agencies and so on in a year.

Finally u_{it} is unobservable non-negative error term defined as inefficiency effects which following Battese and Coelli (1999), the inefficiency effects u_{it} in the stochastic frontier are specified as $u_{it} = z_{it} \delta + w_{it}$ where, z_{it} is a vector of explanatory variable associated with plant inefficiency including SG Social globalization index, MC The number of phone lines available (communication components) in each year and PG Political globalization index, δ is a vector of parameters to be estimated, and w_{it} are random variables assumed to be independent and independently distributed as truncations of $N(0, \sigma^2)$ such that u_{it} is non-negative ($w_{it} \geq -z_{it}\delta$). Thus, the distribution of inefficiency effects u_{it} is defined by the truncation at zero of $N(z_{it}\delta, \sigma^2)$.

3. Data and Statistical Results

Required data this study has been collected of the statistics provided by the World Bank, World Development Indicators and World Travel and Tourism Council for the years and KOF swiss economic Institute 1997-2008 has been collected.

Maximize the amount of logarithm likelihood function for the production function Cobb - Douglas presented in linear form has performed with using Davidson-Fletcher-Powell Quasi Newton Algorithm DFP and by the Frontier 4.1 software. Accordingly, after estimating the model, results were obtained in Table 1. Based on Statistically significant of the Value estimated coefficients, Intercept ($\ln A = 1.6$) And coefficients ($\alpha = 0.35$), ($\beta = 0.14$), ($\delta = 0.049$) and ($\varphi = 0.35$), that All will have positive effects on the tourism demand. Also, Possible affective factors of tourism industry 's inefficiency and the obtained Coefficients, ($\delta_0 = 4.93$), ($\delta_1 = 0.27$), ($\delta_2 = 0.094$) and ($\delta_3 = 0.72$), Indicate that increase these factors will reduce the inefficiency in the tourism demand.

Table 1: Final results estimate the model considering the effects of efficiency

variable	intercept	$\ln CI$	$\ln GT$	$\ln AD$	$\ln TE$	$\ln B$	$\ln SG$	$\ln MC$	$\ln PG$	-	-	
coefficient	$\ln A$	α	β	δ	φ	δ_0	δ_1	δ_2	δ_3	-	-	Log likelihood
Coefficient value	1.6	0.35	0.144	0.04	0.35	4.93	-0.27	-0.09	-0.72	0.027	0.99	32.58
Standard deviation	0.18	0.03	0.52	0.03	0.03	0.69	0.1	0.02	0.18	0.003	0.35	LR
T statistic	8.74	11.73	2.74	1.83	9.87	7.05	-2.64	-4.18	-3.95	6.94	2.78	63.44

Source: research findings

Estimated results are presented in Table 1, indicates statistical significance of all coefficients in the level of error is 5% or less. According to the logarithmic nature of the model estimated model, results show that although the four factors considered in the production, means Capital investment of tourism CI , Government Travel and Tourism Expenditure GT , Total number of employees in the tourism industry TE and The cost of Advertising Tourism Industry AD , have positive effect on amount of output, but their influence is less elasticity in a way that suggests decreasing returns to the scale for this industry in studied countries. In the other hand the estimated coefficients of effective factor on inefficiency indicate that all of them have negative impact on the inefficiency, this means that with increase in each of them inefficiency will decrease or efficiency will increase in the tourism industry, Meanwhile political globalization show greatest impact on technical efficiency of the tourism industry.

To ensure correct application of this model, the Hypothesis of existence the effects of the inefficiency for each variable was examined according to approach Batlese and Coeli (1995) by using the likelihood ratio test that results has indicated in Table 2. Because the calculated χ statistic is larger than from the table, null hypothesis in all three tests which presented is rejected. So that not only can conclude that The tourism industry these group of countries in the period studied were faced with economic inefficiency But because of the significance of coefficients of affective variables on tourism technical's inefficiency, inefficiency can be considered as a linear combination of three factors above.

Table 2: the hypothesis existence test of the effects of inefficiency

Null hypothesis	Statistic t	Critical value (free degree $\chi_{0.99}$)	Test Results
$H_0 : \gamma = \mu_0 = \dots = \mu_3 = 0$	22.47	9.21	the null hypothesis is rejected
$H_0 : \gamma = 0$	18.11	4.23	the null hypothesis is rejected
$H_0 : \mu_1 = \dots = \mu_3 = 0$	12.52	4.11	the null hypothesis is rejected

Source: research findings

Calculated results of estimated technical efficiency, with percent of average efficiency in order to both of the period and the countries of studied has showed in Table 3. These results indicate a growing trend in efficiency of selected countries' tourism industry (excepted Bahrain) during the period of studied. So that Kuwait with average efficiency 0.67 has the first place, and United Arab Emirates and Saudi Arabia with an average efficiency 0.63, 0.58 respectively are the second and third. However, Iran with the average efficiency 0.40 has placed at the end.

Table 3: efficiency of selected countries in the tourism industry during the period of studied

year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average efficiency percentage	Rating
Bahrain	0.47	0.43	0.43	0.75	0.65	0.48	0.48	0.48	0.44	0.41	0.40	0.36	0.48	5
Iran	0.24	0.27	0.32	0.32	0.31	0.38	0.41	0.43	0.46	0.51	0.59	0.59	0.40	7
Kuwait	0.56	0.44	0.51	0.81	0.63	0.65	0.69	0.69	0.75	0.78	0.77	0.89	0.67	1
Oman	0.49	0.43	0.46	0.51	0.42	0.42	0.45	0.44	0.43	0.52	0.48	0.60	0.47	6
Qatar	0.35	0.35	0.41	0.47	0.45	0.44	0.48	0.51	0.63	0.76	0.91	0.92	0.55	4
Saudi. A	0.43	0.42	0.38	0.51	0.44	0.45	0.48	0.56	0.75	0.83	0.77	0.94	0.58	3
UAE	0.06	0.56	0.55	0.62	0.59	0.57	0.58	0.64	0.66	0.72	0.76	0.81	0.63	2

Source: research findings

4. Conclusion and Recommendations

The Results of estimating of data shows that although Each of the four production factors considered, Capital Investment, Total number of employees in the tourism industry, Government Travel and Tourism Expenditure and finally, The cost of Advertising Tourism Industry can be an important effective factor on the tourism industry 'production function, But returns to scale in the tourism industry is the type of decreasing . Also, factors such as social globalization, political globalization and the ease of global communication as another symbol of globalization, are effective factors on reduce of inefficiency. Recommend that pay attention to the increase in workers' skills, efficiency, security And employment benefit which can make a lot of Motivations for activity in this sector and improve the tourism industry.

Also tourism industry' policy makers with policies to increase security and reduce political tensions can help to reduce the technical inefficiency in this sector.

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