

Impact of Tourism Industry Performances on Tourist Receipts: Evidence from Sri Lanka after the Liberalization of the Economy

Gunarathne, G.S.P.^{1*} & Perera, P.D.M.V.²

¹Department of Social Sciences, Faculty of Social Sciences & Humanities, Rajarata University of Sri Lanka

²Department of Social Sciences, Faculty of Social Sciences & Humanities, Rajarata University of Sri Lanka

Sajaanpraveen7@gmail.com¹, Pmenushi@gmail.com²

Abstract - Most literature provides that tourism industry positively contributes to economic growth of developing countries. It is more important to identify the factors that effect for the growth of tourism industry performances; tourist receipts. The general objective of this study is to estimate the contribution of factors affecting for tourist receipts in Sri Lanka. Existing literature suggests that tourist arrivals, excursionist arrivals, tourist nights, accommodation capacity & annual occupancy rate etc. are affected on tourist receipts. Time series analysis by using secondary data from 1977 to 2016 employed to answer the research question. There is a long run relationship among all the variables. Among the factors, there is a significant positive impact of tourist arrivals & excursionist arrivals on tourist receipts in the short run although accommodation capacity, annual occupancy rate has a significant negative impact. In addition, tourist nights does not indicate any significant short-run impact on tourist receipts. Hence, it can be concluded that there is a positive impact of tourist arrivals & excursionist arrivals on tourist receipts in Sri Lankan context. Therefore, this study strongly suggested taking appropriate policy actions to increase the tourist arrivals in order to acquire the higher tourist receipts.

Keywords - Accommodation Capacity, Excursionist Arrivals, Tourist Arrivals, Tourist Receipts

I. INTRODUCTION & RESEARCH BACKGROUND

The direct economic impact of the tourism industry, including accommodation, transportation, entertainment, and attractions, was approximately 2.3 trillion U.S. dollars the year 2016 [1]. A number of countries are quickly emerging in order to reap the economic benefits of the industry. During the year 2015 up to November, Sri Lanka Tourism recorded 18.1% growth in arrivals with 1.5 million arrivals. The total tourism revenue generated was US\$2.2 billion [2]. When considering the past data, there is an increasing trend of tourist receipts of Sri Lanka recently. This positive trend is always caused to focus on tourism industry growth. This is because, the growth of tourism industry is impacted positively on changing the economic performances [3]. Mustafa and Santhirasegaram [4]; Srinivasan and Ganesh [5] showed that there is a positive

relationship between tourism receipts and economic growth in Sri Lanka & a unidirectional causality from tourism earnings helped the economic growth. Therefore, it is important to find out the contribution of factors affecting on tourism industry growth in Sri Lanka in order to get higher economic performances and higher economic growth in the country.

This study focuses on finding the level of contribution of pre-identified factors from a literature survey and this is raised as the general objective of this study. The specific objective is, (1) to identify the long-run relationship between factors of tourism growth in Sri Lanka, (2) to find out the short-run dynamic impact of factors on tourism growth.

II. MATERIALS AND METHODS

The data used for the study represents the annual time series for 1977 to 2016 (40 years) period, obtained from the annual reports of Central bank of Sri Lanka. In addition, six websites, which promote Sri Lankan tourism were investigated. Following econometric model was specified to achieve study objectives:

$$\begin{aligned} \ln Y_{ti} = & \beta_0 + \beta_1 \ln TA_{ti} + \beta_2 \ln EA_{ti} \\ & + \beta_3 \ln TN_{ti} + \beta_4 \ln AC_{ti} \\ & + \beta_5 \ln AOR_{ti} + u_i - (1) \end{aligned}$$

more days in the host country, EA is excursionist arrivals who visit only per day, TN is tourist nights, which the days spend in the country, AC is accommodation capacity that includes number of beds in tourist hotels & restaurants, AOR is annual room occupancy rate that indicated the percentage value of number of rooms that occupied in the year. All variables are in the logarithm form with the purpose of normalizing the data. At the beginning of analyzing data, Schwarz Information Criterion (SIC) helped to determine the number of lags to ensure that serial correlation in the time series is absent. When using time series data, it is more important to check the stationarity of data series. Prior to empirical analysis, the Augmented Dickey-Fuller (ADF) test was employed to test the presence of unit root in time series. Johansen Co-integration test helped to find out the long-run equilibrium relationship between variables. Using the Restricted Vector

Auto-Regressive (Restricted VAR) model, the relationship based on the integrations of the variable was identified.

III. RESULTS & DISCUSSIONS

Lag Value & Unit Root Test

According to lag length criteria, the optimal lag value that based on Schwarz Information Criterion (SIC) is three. Before moving, time series analysis used Augmented Dickey-Fuller(ADF) unit root test to find out the stationary of time series data. According to unit root test results, tourist receipts (TR), tourist arrivals (TA), tourist nights (TN), accommodation capacity (AC)& annual occupancy rate (AOR) become stationary at their first deference while excursionist arrivals (EA) become stationary at its second deference.

Johansen Test of Cointegration

The maximum-eigen statistic was used to identify the long-run relationship between TR, TA, EA, TN, AC& AOC. The data that used to run the co-integration testis in its initial form rather than the first or second deference forms. Table 1 provides the test results of Johansen cointegration test & the first column of the table indicates the number of theco-integrating equation, which implies the null hypotheses of theco-integration test.

Table 1: Cointegration Test Results

Number of cointegrating Equation	Maximum Eigenvalue Test		
	Statistics	Critical Value (5%)	Probability Value
None*	59.386	40.078	0.0001
At most 1*	47.668	33.877	0.0006
At most 2*	31.893	27.584	0.0131
At most 3*	27.877	21.132	0.0048
At most 4*	24.428	14.265	0.0009
At most 5	0.1180	3.8415	0.7312

Note: *denotes the rejection of thenull hypothesis

Source: Prepared by Researcher, 2018

Maximum-Eigen statistic indicates that the five null hypotheses; none, at most 1, at most 2, at most 3& at most 4 were rejected because they indicate higher statistics than the critical value. In addition, the probability values are less than 5%. Other null hypotheses; at most 5, shows lower trace statistics than the critical value and signifies a higher probability value than 5%. Therefore, five co-integrating equations or five error terms exists at 5% of asignificant level. Vector Error Correction Model (VECM)

The presence of cointegration equations or long run associations leads to run Vector Error Correction model rather than using Vector Auto-Regressive model to identify the short run dynamic impact of TA, EA, TN, AC&AOR on tourist receipts.

$$\begin{aligned} \Delta \ln TR_{ti} = & 0.229 - 1.637TR_{(-2)} \\ & + 1.524TA_{(-2)} \\ & + 0.589EA_{(-1)} \\ & + 0.521EA_{(-2)} \\ & + 0.225EA_{(-3)} \\ & - 0.217AC_{(-1)} \\ & - 0.192AC_{(-2)} \\ & - 0.139AC_{(-3)} \\ & - 1.538AOR_{(-1)} \\ & - 1.564AOR_{(-3)} \rightarrow (2) \end{aligned}$$

Based on the VECM, there is a significant negative impact of TR in two years of time lag; it denotes the past two years' tourist receipts is not positively affected on the present years' tourist receipts.

According to evidence from Sri Lanka, AC&AOR provide a negative impact on TR. This is because the number of tourist rooms & beds are sufficient to address the accommodation needs of tourists. Table 2 is representing the accommodation demand of tourists over the last five years. It clearly indicates theprevailing gap between accommodation capacity & tourist arrival per day. It can be further described by the annual room occupancy rate which is presented in figure one.

Table 2: Gap between AC & TA

Year	AC per Day	TA per Day	The gap between AC & TA
2012	30399	2755	27644
2013	32284	3492	28792
2014	35,976	4184	31792
2015	37,720	4927	32793
2016	45,509	5619	39890

Source: Prepared by Researcher, 2018

According to the figure 1, the annual room occupancy rate has fluctuated between 42% & 77%. However, it was below under 75% in many years. Thus, the existing accommodation capacity is very high when it compares with the demand.

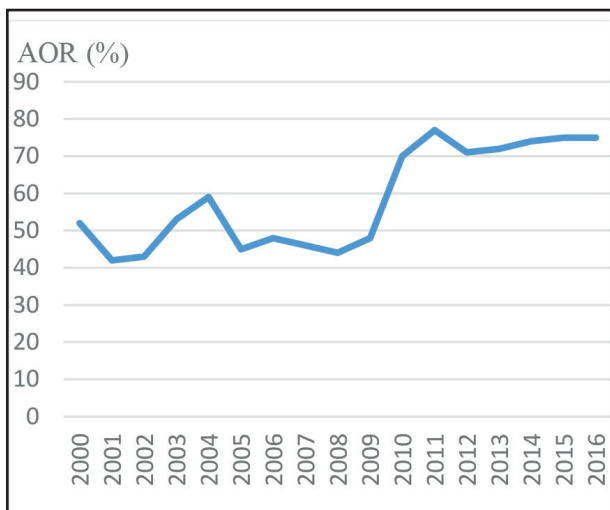


Figure 1: Annual Room Occupancy Rate

Source: Prepared by Researcher, 2018

Therefore, as the result of the econometric model, increasing the accommodation facilities leads to thenegative impact in the Sri Lankan context.

In addition, there is no any significant positive or negativeshort-run impact of TN on tourist receipts of Sri Lanka. It implies that the spending days is not considerably affected by tourist receipts in Sri Lanka. According to the past data, an averagenumber of days spending per tourist in Sri Lanka is 10 days. In this sense, 6 leading Sri Lankan tourist websites investigated to identify the journey plan & activities suggested by travel agencies in Sri Lanka. Most of their journey plan limited totaveling the cultural triangle as well as the beach tourism in the bottom of the island. However, the activities are limited to pilgrimage, spa & wellness centers, tourist shopping, dining, cycling etc. Therefore, it seems to be lack of opportunities to acquire more tourist earnings by activities & adventures, because they are at avery low level when it compared with the global level.

However, TA&EA shows a positive impact on tourist receipts in the short run. But, the actual impact of TA can be felt after a time lag of two years, also the impact of EA shows after a time lag of one, two or three years. It explains both kind of tourist arrivals, whether excursionist arrivals for one day or tourist arrivals for more days are caused to increase the tourist receipts.

The model has a better goodness of fit that indicates the highest R Squared value (0.926346). Furthermore, the F statistics (6.015097) is significant at the 5% significant level as the probability F statistics is equal to 0.001838. Hence, the model has a better overall significance.

To find whether the model, which the tourist receipt, is as the depended variable has any statistical errors or not, used three test that indicated in table three.

Table 3: Error Testing

Test	Statistics	Probability
Breusch-Godfrey Serial Correlation LM Test	7.72244*	0.0521***
Heteroskedasticity Test: Breusch-Pagan-Godfrey	20.1959*	0.6856***
Normality Test	0.6988**	0.7051***

Note: *Observed R-square Statistics, **Jarque-Bera Statistics, ***Significant at 5% level

Source: Prepared by Researcher, 2018

According to Breusch-Godfrey Serial Correlation LM Test, the probability value (0.0521) is higher than 5%, which denotes that this model is not suffering from a serial correlation problem. Considering the Heteroskedasticity Test, Breusch-Pagan-Godfrey indicates a higher probability value (0.6856) than 5%. Therefore, this model does not have heteroscedasticity problem. The normality test; Jarque-Bera Statistics probability value (0.7051), which is higher than 5% means that the residuals of this model are normally distributed. Therefore, this model has not suffered from statistical errors.

IV. CONCLUSION & RECOMMENDATIONS

There is a long run relationship amongtourist receipts, tourist arrivals, excursionist arrivals, tourist nights, accommodation capacity & annual room occupancy rate. Among the factors, there is a significant positive impact of tourist arrivals & excursionist arrivals on tourist receipts in the short run although accommodation capacity, annual occupancy rate has a significant negative impact. In addition, tourist nights does not indicate any significant short-run impact on tourist receipts. Hence, it can be concluded that there is a positive impact of tourist arrivals & excursionist arrivals on tourist receipts in Sri Lanka. Therefore, it is more appropriate to increase the tourist arrivals than promoting other factors. Hence, this study strongly suggested taking policy actions to increase the tourist arrivals in order to acquire the higher tourist receipts.

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