

Asian Development Policy Review

ISSN(e): 2313-8343

ISSN(p): 2518-2544

DOI: 10.18488/journal.107.2019.74.253.260

Vol. 7, No. 4, 253-260.


© 2019 AESS Publications. All Rights Reserved.

URL: www.aessweb.com



DOES INBOUND TOURISM ENCOURAGE TRADE DEFICIT IN SRI LANKA?



 **Thangamani Bhavan**

Department of Economics, Faculty of Commerce and Management, Eastern University, Sri Lanka.
Email: bhavant@esn.ac.lk



ABSTRACT

Article History

Received: 27 June 2019

Revised: 29 July 2019

Accepted: 3 September 2019

Published: 16 October 2019

Keywords

Inbound tourism

Trade deficit

Imports

Sri Lanka

Cointegration

Granger causality.

JEL Classification:

F01; F14; Z32; Q01.

The purpose of this paper is to investigate whether tourism encourages imports and subsequently leading to a trade deficit, as the nexus between trade and tourism has been controversial. Annual time-series data, running from 1970 to 2017, are employed for the empirical analysis. The Augmented Dickey-Fuller (ADF) unit root analysis is used to test the stationary properties of the time series variables. The time series properties of the variables allowed employing the Johansen's maximum likelihood estimator of the parameters of a cointegrating Vector Error Correction Model (VECM) analysis to inspect the long-run and the short-run dynamic relationship. The bilateral causality relationships between variables are tested by using the Granger Causality analysis. The results suggest the existence of a long-run relationship between tourism-related variables. Further, the results also confirm the causality running from inbound tourism to imports of goods and services, but not from import to tourism. However, there is no short-run dynamic relationship found to have between the variables.

Contribution/ Originality: This study is one of very few studies which have investigated whether inbound tourism progression encourages imports of goods and services and then contributes to trade deficit as the relationship between trade and tourism become debatable. This study found that inbound tourism causes imports of goods and services in case of Sri Lanka.

1. INTRODUCTION

The tourism industry is, directly and indirectly, providing a wide range of economic opportunities for progressing of developing countries in such a way improving foreign exchange earnings, increasing production and income and employment generation (Durberry, 2004; Massidda and Mattana, 2013). Notably, tourism is progressively becoming an unavoidable influencing tied element in determining the pattern of international trade flows between the economies. There is a theoretical argument that trade and tourism can induce each other possessing endogenous characteristics. In that line, some findings have firmly disclosed bilateral causalities running from compositions of the trade and inbound tourism or the existence of the long-run and short-run relationship between tourism and trade. Massidda and Mattana (2013) studied causality between tourism, real GDP and Trade in case of Italy and found that there is a long-run relationship between tourism and real GDP in one side and trade and tourism on the other case, and emphasized that there is bidirectional causality between trade and tourism. According to Chaisumpunsakul and Pholphirul (2018) the international trade ratio consists of export-and import

ratios have a positive association with the number of tourists from Australia whereas these associations are least in case of the Middle East. The authors also found that the international trade and aligned import values between Thailand and its trading partners was found to have a significant positive effect on a rise in the number of tourist inbound, but found no export impact on the number of international tourist inbound. Keum (2011) Noted that goods and people are the primary tangible objects that are exchanged across the borders and analyzed the causal relationship, applying multilevel causality analysis technique using panel data, between the transnational exchanges of goods and tourism between Korea and its 21 Trading partners, and found that the causal direction runs from tourism flow to trade flow means that travel flow causes trade flows of goods. Fry *et al.* (2010) investigated the relationship between trade and inbound tourism in South Africa and found that there is a long-run relationship between tourist arrivals and trade. Using panel data, Santana-Gallego *et al.* (2011a) examine the empirical relationship between tourism and trade of OECD countries. The results suggest the existing long-term bidirectional relationship indicates a complementary association between trade and tourism in these countries. Santana-Gallego *et al.* (2011b) had another study investigating the association between trade and tourism considering the case of small Islands, also found the existence of long-run relationship between trade and tourism.

Though the economic performance of these two endogenous factors are blessed by each other and contributing positively to the economic growth of the countries, the nexus between tourism and the external sector of the countries like Sri Lanka has become controversial. On one hand, tourism can contribute to economic development and on the other hand, development in the tourism industry increases imports to fulfill the tourists' needs. Hernández-Martín (2007) argue that countries specialized in tourism are generally experiencing trade deficit because tourism demand usually causes a high level of imports especially in the small and low level of economies if they are not with enough capacity to produce import substitute. Further, Islam *et al.* (2012) noted that though imports are seen as a leakage and also encourage financial outflow, and may hinder economic growth, imports are not always problematic because imports stimulate economic growth if the imports consist of intermediate inputs, superior capital types of machinery, and know-how help economic growth through technology transfer and knowledge spillover. However, a significant rate of imports consisting of many consumable items is never entertained by the policymakers as this structure may not encourage a productive way of trade. In addition, if economic growth is already import driven, encouraging further imports will develop expansion between import and export, and the trade deficit would remain unrecovered.

Some studies have anchored the fact that inbound tourism encourages import demand and possibly leading to a trade deficit. These empirical studies have investigated stressing on whether tourism encourages a trade deficit by encouraging imports more and more in some countries like Sri Lanka where export is weak. Kulendran and Wilson (2000) analyzed whether there is a significant association between international trade and international travel flows between Australia and its trading partners, the USA, UK, New Zealand and Japan by hypothesizing one of the Marco Polo's propositions that 'business travel leads to import purchases'. The study found there is no long-run relationship between real imports and travel flows in the case of the USA, NZ and Japan, but has a long-run relationship in the case of the UK. Fischer and Gil-Alana (2009) dealt with international trade and tourism focusing on the effect that German tourism flow towards Spain has effect on German imports of Spanish wine. The results have shown that tourism stimulate wine imports and further suggest that tourism constructs an effect on future import demand. Belisle (1984) discussed the interrelationship among tourist food demand, food imports, and local food production in Jamaica, and found tourism can stimulate imports though the tourism can develop economic growth and also stressed the import substitution strategies to reap in the economic growth of tourism. Khan *et al.* (2005) using Singapore data, investigated the cointegration and causal relationship between trade and tourist arrivals and found there is a strong link between business visits and imports because of visits of business people to host country. Nowak *et al.* (2007) examined the relationship between trade and tourism by applying TKIG (Tourism-capital goods imports -growth) tourism leads to capital imports and then leading to growth in the case of

Spanish economy, and appeared to have very significant relationship. Shan and Wilson (2001) tested the nature of the causality between international trade and international travel in case of China and has emphasized that the rise import demand for foreign goods and service in a particular host country is unavoidably aligned with the development in the tourism industry. Therefore, the relationship between tourism expansion and import demand becomes a central of the argument in the case of Sri Lanka as it is the country that has already been identified as an import-dependent and having import driven economic growth and trade deficit, and experiencing in cultivating very good tourism performance. As far as the performance of the external sector of Sri Lanka is concerned, Sri Lanka has been experiencing a trade deficit since 1950 with trade surplus only in 1977. There is higher growth in imports alongside a marginal growth in export causing expansion of the trade deficit of the country. According to the Central Bank of Sri Lanka, export expanded in 2017 by reaching to US\$ 11.4 billion, whereas imports reached US\$ 21 billion leading to an expanded trade deficit amounted US\$ 9.6 billion. The critical fact is that the import dependency of Sri Lanka falls in all categories of imports such as capital, intermediate and consumable, and all items exported also contain imported items. When looking at the performance of tourism, Sri Lanka is one of the Islands having potentialities to develop the tourism industry. Tourism expansion and its socio-economic benefits were felt after 30 years of civil war and are believed to have a significant impact on the economic performances of the country (Wickremasinghe and Ihalanayake, 2006; Ranasinghe and Deyshappriya, 2010; Srinivasan *et al.*, 2012). According to the Sri Lanka Tourism Development Authority, 2017, tourist arrivals have grown by 7%, surpassing the growth of 4% in 2010 and the industry is now becoming third largest foreign exchange earner for the country. The official tourist receipts and per capita tourist receipts for 2017 has grown by 16.7% and 1.1% respectively compared to the previous year. The following diagrams show, by key indicators, the growth of tourism in Sri Lanka.

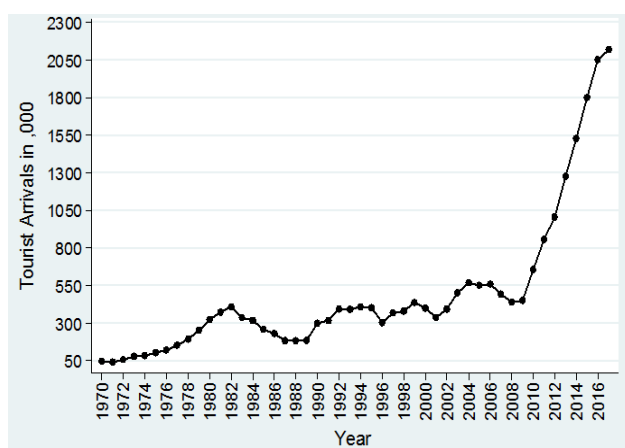


Figure-1. Tourist arrivals during the period from 1970-2017.

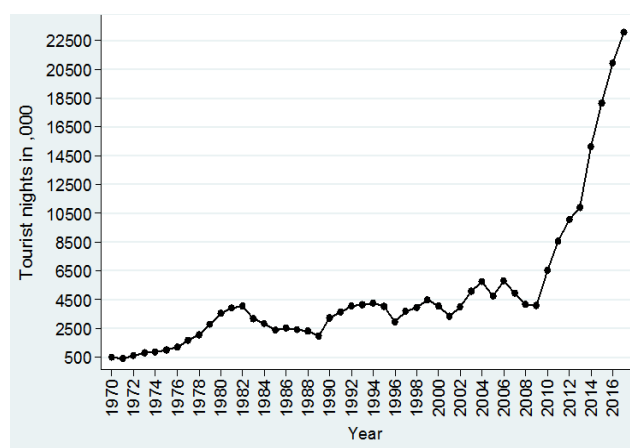


Figure-2. Tourist nights during the period from 1970-2017.

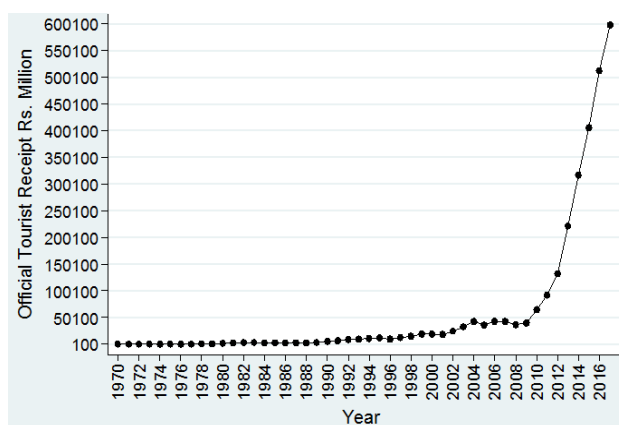


Figure-3. Official tourist receipts during the period from 1970-2017.

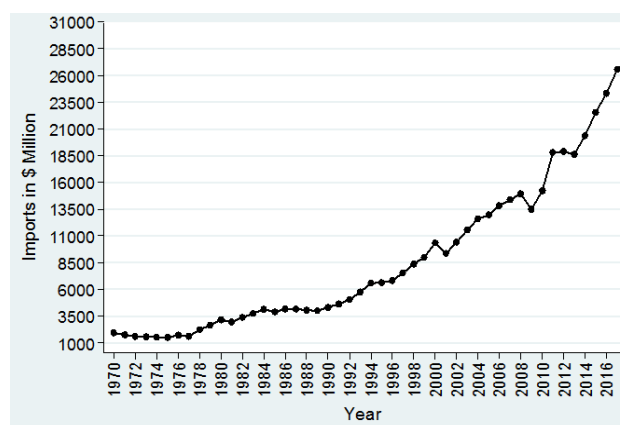


Figure-4. Imports of goods and services period from 1970-2017.

Source: Development indicators database of the world bank and annual statistical reports of tourism authority, Sri Lanka.

The Figures 1-3 show the tendency of tourism by indicators such as tourist arrivals, tourist nights and official tourist receipts during the period between 1970 and 2017. All indicators are having progression until 2008 and have a significant evolution thereafter due to the silence of the civil war ended in 2009. Meantime the tendency of imports of goods and services, shown in Figure 4, clearly indicates the progression in imports which has a significant influence on the expansion in the trade deficit. Therefore, unavoidably the Sri Lankan economy is immersed in an import driven economic structure and the government dependency on income is also from imports. Since, the performance, trend, and composition of imports in Sri Lanka conceivably develop an unhealthy economic condition such as currency depreciation, inflation and so on, there is a need to undergo a study whether tourism, besides other influencing factors that likely stimulate imports also serves as an encouraging factor of imports in Sri Lanka. At this juncture, this study analyses whether inbound tourism possibly serve as one of the factors that encourage the marginal propensity of imports, and leading to experience a trade deficit, and reciprocally impact on the economy.

Therefore, the argument articulated here is that whether tourism development in the economies that are identified as import-dependent and import driven economic growth really reap the benefits by the tourism sector. Therefore, this study investigates the bilateral relationship between trade, especially focusing on import, and inbound tourism because Sri Lanka's economy is recognized as import-dependent and having import driven economic growth.

Table-1. Summary statistics.

Variables	Obs.	Mean	Std.Dev.	Minimum	Maximum
Year	48	-	-	1970	2017
Imports of goods and services (in \$Million)	48	8535.396	6834.022	1523	26569
Tourist arrivals in ,000	48	491.334	486.198	39.654	2116.407
Tourist Night in ,000	48	4971.083	4953.259	395	23068
Official tourist receipt in Rs.Million	48	58731.04	131506.3	20.3	598356

Source: Development indicators database of the world bank and annual statistical reports of tourism authority, Sri Lanka.

2. METHODOLOGY AND FINDINGS

2.1. Data and Variables

This study has extracted annual time series data running from 1970 to 2017. The data on tourism indicators such as tourist arrival, number of tourist nights and tourism receipts were extracted from the Annual Statistical Reports of Tourism Authority, Sri Lanka. The data on imports of goods and services from the rest of the World were extracted from the Development Indicators Database of the World Bank. All variables employed in this study are transformed into natural logarithm. The Table 1 shows the summary statistics of the variables.

2.2. Unit Root Analysis

As this study sets out annual time series data, as the first step, the Augmented Dickey-Fuller (ADF) analysis is carried out to test time-series properties of the variables to avoid the unreliable outcome. Therefore, the stationary properties at their level and order of integration are tested by employing the analysis. The Table 2 shows the results of ADF analysis. The results suggest that the null hypothesis that all variables to be non-stationary at level cannot be rejected leading to conclude that all variables consist of unit root characteristics and become stationary at first difference denoted as integrated order, $I(1)$. The results further suggest to employing the Johansen's cointegration analysis.

Table-2. Results of unit root analysis.

Variables	Test statistic at level	Test statistic at first difference	Lag	Deterministic term	Critical values			Order of integration
<i>Intarriv</i>	-0.957	-4.741	0	Trend	-3.600	-2.938	-2.604	I(1)***
<i>Intnight</i>	-0.861	-5.607	0	Trend	-3.600	-2.938	-2.604	I(1)***
<i>Intreceipt</i>	-1.932	-4.389	0	Trend	-3.600	-2.938	-2.604	I(1)***
<i>lnimsgs</i>	-0.085	-4.346	02	Trend	-3.614	-2.944	-2.606	I(1)***

*** indicate the level of significance at 1% level.

As all variables are non-stationary and become stationary at first difference, the maximum likelihood estimator of the parameters of a cointegrating vector error correction model (VECM) is employed to estimate the long-run and short-run relationship among the tourism vector variables and import variable. Thus, the model specification for general VECM is denoted as follows:

$$\Delta y_t = \alpha \beta' y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta y_{t-i} + \epsilon_t \quad (1)$$

Where, y denotes a $(K \times 1)$ vector of $I(1)$ variables. The α and β are the $(K \times r)$ parameter matrices with rank $r < K$. The $\Gamma_1, \dots, \Gamma_{p-1}$ reflects $(K \times K)$ matrices of parameters and ϵ_t indicates a $(K \times 1)$ vector of normally distributed errors. The Schwartz Criterion (SBIC) method assisted to select the optimum lag length. The Table 3 shows the results of cointegration analysis. Taking three tourism indicators into consideration, three cointegration tests are performed which are illustrated as model 1, 2 and 3. Investigating the long-run relationship between imports of goods and services and tourism arrivals in model 1, the trace statistics found in the results of Johansen test for cointegration, at $r = 0$ of 17.3827 exceeds the critical value of 15.41, but $r = 1$ indicates that there is a long-run relationship between the variables. The trace statistics found in the second model, at $r = 0$ of 17.5788 exceeds the critical value of 15.41, but $r = 1$ denotes that there is a long-run relationship between imports of goods and services and tourist night. In the third model also the trace statistics, at $r = 0$ of 27.6645 exceeds the critical value of 15.41, but $r = 1$ expresses that there is a long-run relationship between imports of goods and services and tourism receipts.

Table-3. Results of normalized cointegration coefficient.

Variables	Coefficients	Standard error	t-value	p-value
Model 1				
<i>lnimsgs</i>	1	-	-	-
<i>Intarriv</i>	-1.2466***	0.1304	-9.56	0.000
Constant	-6.6518	-	-	-
Model 2				
<i>lnimsgs</i>	1	-	-	-
<i>Intnight</i>	-1.2943***	0.1700	-7.61	0.000
Constant	-12.0452	-	-	-
Model 3				
<i>lnimsgs</i>	1	-	-	-
<i>Intreceipt</i>	-0.3997***	0.0189	-21.08	0.000
Constant	-18.7068	-	-	-

*** indicate the level of significance at 1% level.

Upon transferring coefficient values to the empirical linear model in order to reveal long-run elasticity relationship between the variable, a model is specified as follows:

$$Z_t = \beta_0 + \beta_1 T_i + \epsilon_t \quad (2)$$

where, Z denotes trade indicator that is the logarithm of imports of goods and services, $lnimp$ and T represents the vector of tourism i indicators which includes the logarithm of tourist arrivals, $Intarriv$, the logarithm of tourist night stay, $Intnight$, and the logarithm of tourism receipts, $Intreceipt$ and ε indicate time and error term.

The results of the Equation 2 are shown in Table 4. All coefficients are found to be statistically significant at 1% level. By reversing the signs of the coefficients when it is transferred to the linear model, all coefficients for tourism indicators are positively associated with the imports of goods and services. These results reveal that imports of goods and services are encouraged by the growth of tourism in Sri Lanka. The results of model 1 explain that everyone per cent growth in tourism arrivals positively influences on the rise in imports by 1.25 per cent level. The results of model 2 reveal that everyone per cent growth in tourist night positively influences on the rise in imports by 1.29 per cent level. Model 3 expresses that everyone per cent growth in the tourism receipt is positively associated with the rise in imports by 0.4 per cent level.

Table-4. Results of Johansen tests for cointegration.

Maximum rank(r)	Parms.	Lag	LL	Eigenvalue	Trace statistic	5% Critical value
Model 1						
0	2	01	65.1875	.	17.3827	15.41
1	5		73.7537	0.3054	0.2502*	3.76
2	6		73.8789	0.00531	-	-
Model 2						
0	2	01	60.8277	.	17.5788	15.41
1	5		69.5644	0.3105	0.1054*	3.76
2	6		69.6171	0.0022	-	-
Model 3						
0	2	01	49.5884	.	27.6645	15.41
1	5		62.1344	0.4137	2.5724*	3.76
2	6		63.4206	0.0533	-	-

Source: Author's calculation.

Table-5. Results of vector error correction model.

Model 1	Coefficient	Z -value	P-value
Adjustment parameter			
D_lnimg(-1)	-0.0885	-2.51	0.012
D_lnimg (-2)	-0.1891	-1.24	0.215
D_lnimg (-2)	-0.0264	-0.17	0.865
D_Intarriv (-1)	0.1192	1.51	0.131
D_Intarriv(-2)	-0.0516	-0.63	0.528
Constant	0.0667	3.65	0.000
Model 2			
Adjustment parameter			
D_lnimg (-1)	-0.0831	-2.40	0.016
D_lnimg (-2)	-0.2011	-1.28	0.200
D_lnimg (-2)	-0.0238	-0.15	0.881
D_Intnight(-1)	0.0952	1.36	0.175
D_Intnight(-2)	-0.0429	-0.61	0.541
Constant	0.0629	3.57	0.000
Model 3			
Adjustment parameter			
D_lnimg(-1)	-0.1969	-4.37	0.000
D_lnimg(-1)	-0.2491	-1.84	0.065
D_Intreceipt(-1)	0.9716	2.15	0.032
Constant	0.1089	5.04	0.000

Source: Author's calculation.

Upon having a long-run relationship between the variables, and then based on the VECM Table 5 presents the values for error correction term also noted as a speed of adjustment parameters towards equilibrium. The negative sign and significant level of the coefficients of the adjustment parameters in all three models further confirm that the long-run relationship between the variables. However, the test of a short-run relationship tested with post estimation test of the linear hypothesis having a null hypothesis confirmed that there is no short-run relationship

between the variables in all three models. Lagrange-Multiplier test and Jarque-Bera tests, respectively, confirmed the absence of the autocorrelation and normal distribution of residuals.

2.3. Granger Causality Analysis

The Granger Causality analysis is performed to have further investigation on the bilateral causal relationship between the inbound tourism and import variables. Time series data are differenced to make them as stationary because the Granger Causality requires variables to be stationary (Granger, 1988). According to the bilateral VAR framework, the results of Granger Causality Wald tests are presented in Table 6. The results show the direction of causality is running from tourism variables to imports, but not from imports to tourism variables means that all tourism variables Granger cause imports of goods and services.

Table-6. Granger causality analysis.

Direction of causality	Chi-square	Prob. > Chi-square	Causality
Model 1			
Intarriv \longrightarrow lnimp	13.859	0.000	Yes
lnimp \longrightarrow Intarriv	0.11287	0.737	No
Model 2			
Intnight \longrightarrow lnimp	12.972	0.000	Yes
lnimp \longrightarrow Intnight	0.22853	0.633	No
Model 3			
Intreceipt \longrightarrow lnimp	22.25	0.000	Yes
lnimp \longrightarrow Intreceipt	0.00252	0.960	No

Source: Author's calculation.

3. CONCLUSION

The purpose of this paper was to investigate whether inbound tourism encourages imports of goods and services in Sri Lanka during the period 1970-2017. First, Augmented Dickey-Fuller analysis was performed in order to test the stationary properties of the time series variables. Secondly, the existence of the long-run and short-run dynamic relationship between the variables was examined by employing the maximum likelihood estimator of the parameters of a cointegration Vector Error Correction Model (VECM). Finally, the Granger Causality analysis was performed to test the bilateral causal relationship between the variables. The results derived from the study allow concluding that there is a positive long-run association between tourism and imports of goods and services. Short-run association test confirms that there is no short-run relationship between the variables. Upon the analysis of Granger Causality, the results suggest that there is a one-way causality running from inbound tourism to import of goods and services, but no causality directed from trade to tourism.

Funding: This study received no specific financial support.

Competing Interests: The author declares that there are no conflicts of interests regarding the publication of this paper.

REFERENCES

- Belisle, F.J., 1984. Tourism and food imports: The case of Jamaica. *Economic Development and Cultural Change*, 32(4): 819-842. Available at: <https://doi.org/10.1086/451428>.
- Chaisumpunsakul, W. and P. Pholphirul, 2018. Does international trade promote international tourism demand? Evidence from Thailand's trading partners. *Kasetsart Journal of Social Sciences*, 39(3): 393-400. Available at: <https://doi.org/10.1016/j.kjss.2017.06.007>.
- Durbarry, R., 2004. Tourism and economic growth: The case of Mauritius. *Tourism Economics*, 10(4): 389-401. Available at: <https://doi.org/10.5367/0000000042430962>.

- Fischer, C. and L.A. Gil-Alana, 2009. The nature of the relationship between international tourism and international trade: The case of German imports of Spanish wine. *Applied Economics*, 41(11): 1345-1359. Available at: <https://doi.org/10.1080/00036840601019349>.
- Fry, D., A. Saayman and M. Saayman, 2010. The relationship between tourism and trade in South Africa. *South African Journal of Economics*, 78(3): 287-306. Available at: <https://doi.org/10.1111/j.1813-6982.2010.01245.x>.
- Granger, C.W., 1988. Some recent development in a concept of causality. *Journal of Econometrics*, 39(1-2): 199-211. Available at: [https://doi.org/10.1016/0304-4076\(88\)90045-0](https://doi.org/10.1016/0304-4076(88)90045-0).
- Hernández-Martín, R., 2007. Tourism events: Impact on imports. *International Journal of Event Management Research*, 3(1): 15-28.
- Islam, F., Q. Muhammad Adnan Hye and M. Shahbaz, 2012. Import-economic growth nexus: ARDL approach to cointegration. *Journal of Chinese Economic and Foreign Trade Studies*, 5(3): 194-214. Available at: <https://doi.org/10.1108/17544401211263964>.
- Keum, K., 2011. International tourism and trade flows: A causality analysis using panel data. *Tourism Economics*, 17(5): 949-962. Available at: <https://doi.org/10.5367/te.2011.0054>.
- Khan, H., R.S. Toh and L. Chua, 2005. Tourism and trade: Cointegration and Granger causality tests. *Journal of Travel Research*, 44(2): 171-176. Available at: <https://doi.org/10.1177/0047287505276607>.
- Kulendran, N. and K. Wilson, 2000. Is there a relationship between international trade and international travel? *Applied Economics*, 32(8): 1001-1009. Available at: <https://doi.org/10.1080/000368400322057>.
- Massidda, C. and P. Mattana, 2013. A SVECM analysis of the relationship between international tourism arrivals, GDP and trade in Italy. *Journal of Travel Research*, 52(1): 93-105. Available at: <https://doi.org/10.1177/0047287512457262>.
- Nowak, J.-J., M. Sahli and I. Cortés-Jiménez, 2007. Tourism, capital good imports and economic growth: Theory and evidence for Spain. *Tourism Economics*, 13(4): 515-536. Available at: <https://doi.org/10.5367/000000007782696113>.
- Ranasinghe, R. and R. Deysappriya, 2010. Analyzing the significance of tourism on Sri Lankan economy: An econometric analysis. 1st International Conference on Business and Information, University of Keleniya, Sri Lanka.
- Santana-Gallego, M., F. Ledesma-Rodríguez and J.V. Pérez-Rodríguez, 2011a. Tourism and trade in OECD countries: A dynamic heterogeneous panel data analysis. *Empirical Economics*, 41: 533-554. Available at: <https://doi.org/10.1007/s00181-011-0477-9>.
- Santana-Gallego, M., F. Ledesma-Rodríguez and J.V. Pérez-Rodríguez, 2011b. Tourism and trade in small Island regions: The case of the Canary Island. *Tourism Economics*, 17(1): 107-125. Available at: <https://doi.org/10.5367/te.2011.0029>.
- Shan, J. and K. Wilson, 2001. Causality between trade and tourism: Empirical evidence from China. *Applied Economics Letters*, 8(4): 279-283. Available at: <https://doi.org/10.1080/135048501750104114>.
- Srinivasan, P., P.S. Kumar and L. Ganesh, 2012. Tourism and economic growth in Sri Lanka: An ARDL bounds testing approach. *Environment and Urbanization Asia*, 3(2): 397-405. Available at: <https://doi.org/10.1177/0975425312473234>.
- Wickremasinghe, B.G. and R. Ihalanayake, 2006. The causal relationship between tourism and economic growth in Sri Lanka: Some empirical evidence. Working Paper Series, School of Applied Economics, Victoria University, WP2006.10. Available from https://www.researchgate.net/publication/228587058_The_Causal_Relationship_between_Tourism_and_Economic_Growth_in_Sri_Lanka_Some_Empirical_Evidence.

Views and opinions expressed in this article are the views and opinions of the author(s), Asian Development Policy Review shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.