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Does tourism affect economic growth in Indian states? Evidence from panel ARDL model

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Abstract. *We investigate the relationship between tourism and economic growth in 23 Indian States from 1997 to 2011. Using panel autoregressive distributed lag model based on three alternative estimators such as mean group estimator (MG), pooled mean group (PMG) and dynamic fixed effects (DFE), we found that there is a significant relationship between tourism and economic growth in the long-run but not in short-run in India.*

Keywords: Economic growth, Tourism development, Panel ARDL, India.

JEL Classification: O47, L83, C23.

1. Introduction

Tourism plays a significant role in every economy. Tourism sector represents a vital source of revenue, employment and entrepreneurial significance for a country. From the global perspective, tourism sector estimates for 5 percent of the world GDP and 30 percentages of world export services (UNWTO, 2012). In recent time tourism specialization and economic growth become a core area of research. Now researchers have great interest to support empirically the direct effect of tourism on economic growth. Nevertheless, the relationship is unpredictable with economic theories, particularly; from the theory of endogenous growth viewpoint, economic growth deals with: (a) economic sectors with a high concentration of R & D, which leads to high productivity; (b) Large Scale, in fact, this feature is not shared by intensive tourism countries (Lanza and Pigliaru, 1999; Easterly and Kraay, 2000). If we look at the literature that seeks to determine the linkages between tourism and economic growth, there would be four empirical symmetries that can be interpreted as four hypotheses (Chatziantoniou et al., 2013). When there is a unidirectional causality between tourism and economic growth, either from tourism to economic growth, it satisfies the first two hypotheses known as Tourism-Led Economic Growth Hypothesis-TLEG and Economic Driven Tourism Growth Hypothesis-EDTG. Whereas, if there is a bidirectional relationship between tourism and economic growth, it fulfils Bidirectional Causality Hypothesis-BCH or if there is no relationship between the said variables it is called Neutral Causality Hypothesis-NCH, respectively. Tourism-led economic growth hypothesis promotes benefits from tourism to economic growth, which spread through many ways (Schubert et al., 2011). Moreover, Tourism promotes economic growth in the following process e.g.; tourism inspires investment and helps local firms to be more efficient through increasing competition (Balaguer and Contavella-Jorda, 2002); tourism assists in reduction of unemployment, in the meantime tourism accomplishments are heavily based on human capital (Brida and Pulina, 2010); tourism leads to increasing in foreign exchange earnings, which in turn can be utilized to finance imports (Mckinnan, 1964), and finally, tourism leads to positive economies of scale. As a result, it reduces production cost for local business entrepreneurs (Andrioties, 2002; Croes, 2006).

Over the years extensive empirical research work has been conducted on the relationship between tourism and economic growth in developed and developing countries (Ghali, 1976 for Hawaii; Balaguer and Cantavella-Jorda, 2002, for Spain; Durbarry, 2004; for Mauritius and Gunduz and Hatemi, 2005; for Turkey, Eugenio-Martin and Morales, 2004; for Latin American Countries).The researchers have documented healthy literature in favour of tourism-led economic growth hypothesis (see, Sugiyarto et al., 2003; Durbarry, 2004; Parrilla et al., 2007; Croes and Vanegus, 2008; Proenca and Soukiazis, 2008; Fayissa et al., 2011; Dritsakis, 2012; Eeckels et al., 2012; Ivanov and Webster, 2013; Surugiu and Surugiu, 2013). There are some studies which support bidirectional causality between tourism and economic growth (Lee and Chang, 2008; Chen and Chiou-Wei, 2009; Seetanah, 2011; Ridderstaat et al., 2013). However, other studies do not support the tourism-led economic growth and economic growth-led tourism hypothesis (See, Katircioglu, 2009; Po and Huang, 2008; Tang and Jang, 2009). Since numerous studies have been conducted to examine the relationship between tourism and growth, but the area still remains controversial. On this line, recent studies (Lean and Tang, 2010; Arslanturk et al. 2011) suggest that, the stability of tourism and economic growth relationship changes over time.

The tourism industry in India is one of the important industries which contributes to economic growth and also brings various employment opportunities. Since last decade, the tourism sector is growing significantly in different parts of the States in India. As per the World Travel and Tourism Council, tourism comprises 6.6% of GDP in 2012 and helps 39.5 million people for direct employment. There was a positive growth of 5.9% in foreign tourist arrivals in 2013. Hence, about 8.8% compound annual growth rate (CAGR) of foreign was tourists registered during 2001 to 2013. At the same time, employment in the tourism based industries increased along with foreign exchange in the country significantly. Hence, tourism among others has been the largest net earner among of various foreign exchanges to India. If we compare India with USA in terms foreign exchange earnings, India hold US $18.445 billion than USA's $17.737 billion in 2012 with a growth rate of 4.0%. The overall tourism receipts of India were 1.59% in 2013(Indian Tourism Statistics, 2013). The tourism industry has directly and indirectly contributed employment to 38.8 million and 8.3% of people in India. Out of overall share of total GDP, 5% of GDP was directly coming from the tourism sector in India (the Tourism Satellite Accounts for India compiled by NCAER for the year 2002-2003). Generally, Indian tourism industry attract various tourism from various countries (Africa, Australia, Latin America, Europe; South East Asia, etc.). The overall share of tourism to GDP increased from 6.78% in 2011-12 to 6.88% in 2012-13. This illustrates that the tourism industry has a potential contribution towards the economic growth in India. On this backdrop, it is essential to investigate the impact of tourism on economic growth in India.

Although some studies have been examined the tourism-led growth hypothesis in various countries, to the best of our knowledge, no single study has been conducted for the Indian States in a panel data framework. The present study can fill up this research gap. The rest of the paper is organised as follows: Section 2 focuses on the review of the literature. Data source and methodology are briefly explained in Section 3. The empirical results and discussions are reported in Section 4, and finally, conclusion and policy implications are given in Section 5.

2. Review of Literature

In a study, Ghali (1976) supported the tourism-led growth hypothesis in Hawaii by applying OLS from 1950 to 1970. Besides, to this Gunduz and Hatemi (2005) found the existence of tourism-led growth hypothesis in Turkey by employing bootstrap Granger causality with leveraged adjustment. However, Balaguer and Cantavella-Jorda (2002) found a unidirectional causality that runs from tourism to economic growth in Spanish economy from 1975 to 1997. Kim et al. (2006) found that tourism expansion led economic growth bi-directionally in Taiwan from 1971 to 2003. Akinboade and Braimoh (2010) made use of multivariate VAR model and Sims Granger causality in investigating the tourism-led economic growth in South Africa and concluded the existence of tourism-led economic growth in the concerned country. Similarly, Lanza et al. (2003) investigated the positive impact of tourism specialization on economic growth for 13 OECD countries for the period 1977 to 1992. By employing advanced Almost Ideal Demand System (AIDS), they found that tourism significantly causes economic growth. In contrary to the bidirectional causal relationship between tourism and economic growth, Narayan (2004) argued for unidirectional causality from economic growth to tourism with the application of more advanced computable general equilibrium model rather than traditional cointegration and Granger causality for Fiji's economy from 1970 to 2000. Employing Panel Generalized Least Square (PGLS) method, Eugenio-Martin and Morales (2004) revealed unidirectional causality between tourism and economic growth in Latin American countries from 1980 to 1997. However, Eugenio-Martin and Morales (2004) suggested that tourism leads to economic growth in low and middle countries but not in high-income countries. Using threshold autoregression model, Po and Huang (2008) clarified that tourism has a positive impact at certain threshold level of 4 percent and no impact on growth beyond the threshold level in 88 countries. Jackman and Greenidge (2012) argued in strong favour of the tourism-led growth hypothesis in Barbados economy. However, they concluded that tourism has significant impact in both short-run and long-run on economic growth. Employing bootstrap panel causality, Chou (2013) concluded for tourism-led growth hypothesis in Cyprus, Latvia and Slovakia where as a reverse relationship found for the Czech Republic and Poland. He also suggested a feedback hypothesis for Estonia out of 10 transition economies for the period 1988 to 2011.Tang and Tan (2013) found tourism and economic growth have a stable relationship for Malaysia. To the contrary, using VAR based spillover approach Antonakakis et al. (2014) suggested that tourism and economic growth are not stable over 1995- 2012 in 10 European countries both regarding magnitude and direction. Finally, they confirmed that tourism- led economic growth and growth led tourism hypothesis are highly time and economic dependent. A Recent study by Tang and Tan (2015) examined the tourism-led growth hypothesis in Malaysia within the Solow growth model. The results based on Granger causality test confirmed that tourism has a positive impact on economic growth both in short and long-run in Malaysia.

3. Data Source and Methodology

3.1. Data

The present study has collected annual data covering the period 1997-2011 for 23 Indian States from Indiasat.com and Handbook of Statistics on Indian Economy, Reserve Bank of India. Based on the availability of data, we have taken into consideration 23 Indian States (namely Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Goa, Gujarat, Haryana, Himachal- Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Odisha, Punjab, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal) for our analysis. Economic growth is measured by per capita Gross State Domestic Product (PGSDP) and per capita tourism arrivals (PTA) measures tourism development. All the variables are transformed into natural logarithm.

3.2. Testing Pesaran Cross Section Dependence Test

The first empirical work of the present study is to check the cross-sectional dependence between economic growth and tourism. Pesaran (2004) proposed CD test which can be applied when N is larger than T. Since our study includes 23 cross-sectional data (N) and 15 years' time period (T). The CD test is based on the average of the pair correction coefficients (ρ_{ij}) of OLS residuals regressions. Pesaran (2004) considered the following model.

$$y_{i,t} = \mu_i + \beta_i x_{i,t} + u_{i,t} \tag{1}$$

Where:

μ_i = intercept of individual state i;

β_i = slope coefficient of individual state i;

$t = 1,2,3 \dots\dots, T$ is the total time period;

$i = 1,2,3 \dots\dots.23$ Corresponding 23 states;

$x_{i,t}$ is vector of observing time varying regressors;

$y_{i,t}$ follows $iid(0, \sigma_i^2)$ for all i and t.

Pesaran (2004) proposed following CD Statistic

$$\mathrm{CD_P} = \sqrt{\frac{2T}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\mathrm{p}}_{i,j} \tag{2}$$

Where: $e_{i,t}$ the OLS are estimates of $u_{i,t}$and $\hat{\rho}_{i,j}$ is the sample estimate of the pair-wise correlation of residuals.

$$\hat{\rho}_{i,j} = \hat{\rho}_{j,i} = \frac{\sum_{t=1}^{T} e_{i,t}\, e_{j,t}}{(\sum_{t=1}^{T} e_{i,t}^2)^{1/2}(\sum_{t=1}^{T} e_{j,t}^2)^{1/2}}$$

3.3. Pesaran's Cross-Sectional Augmented Dickey-Fuller (CADF) Test

After confirming cross-sectional dependence, in order to understand the stationary properties of the variables we have applied Pesaran CADF test (Pesaran, 2007). The presence of cross sectional dependence among the variables can be solved by augmenting the standard Dickey-Fuller regression with cross sectional averages of lagged levels and first differences of the individual series (Pesaran, 2007). The Pesaran CADF equation follows as:

$$\Delta y_{i,t} = \alpha_i + \beta_i y_{i,t-1} + \gamma_i \bar{y}_{t-1} + \varphi_i \Delta\bar{y}_t + \varepsilon_{i,t} \tag{3}$$

where the unit root test hypothesis will be tested based on the OLS results derived from Eq. (3) with t-ratio by $t_i(N, T)$. The Pesaran CADF test is

$$\mathrm{CADF} = t_i(N, T) = \frac{\Delta y_i' \bar{M}_w y_{i-1}}{\hat{\delta}_j \left(y_{i,-1}' \bar{M}_w y_{i-1}\right)^{1/2}} \tag{4}$$

Where:

$$\Delta y_i = (\Delta y_{i,1}, \Delta y_{i,2}, \ldots\ldots, \Delta y_{i,T})', y_{i,-1} = (y_{i,0}, y_{i,1}, \ldots\ldots, y_{i,T-1})', \tau_T = (1,1. \ldots, 1)',$$

$$M_w = I_T - \bar{W}(\bar{W}'\bar{W})^{-1}\bar{W}', \quad \bar{W} = (\tau, \Delta\bar{y}, \bar{y}_{-1})$$

$$\Delta\bar{y} = (\Delta\bar{y}_1, \Delta\bar{y}_2, \ldots\ldots, \Delta\bar{y}_T)', \quad \bar{y}_{-1} = (\bar{y}_0, \bar{y}_1, \ldots\ldots \bar{y}_{T-1})'$$

$$\hat{\sigma}_i^2 = \frac{\Delta y_i' M_{i,w} \Delta y_i}{T-4} M_{i,w} = I_T - (G_i \left(G_i' G_i\right)^{-1} G_i' \quad and \quad G_i = \left(\bar{w}, y_{i,-1}\right)$$

3.4. Panel Autoregressive Distributed Lag Model (P-ARDL)

For estimating the long-run relationship among the variables, we have applied panel autoregressive distributed lag model based on three alternative estimators such as mean group estimator (MG), pooled mean group (PMG) and dynamic fixed effects (DFE). According to Pesaran et al. (1999), an ARDL dynamic heterogeneous panel regression can be written by using ARDL (p, q) approach where 'p' is the lags of dependent variable and 'q' is the lags of independent variable. The equation can written as

$$\mathrm{PGSDP}_{it} = \sum_{j=1}^{p} \lambda_{ij}\, \mathrm{PGSDP}_{i,t-j} + \sum_{j=0}^{q} \delta_{ij}'\, \mathrm{PTA}_{i,t-j} + \mu_i + \varepsilon_{it} \tag{5}$$

Where: $i = 1, 2, 3, \ldots, N$ number of cross sectional ($Here\ i = N = 23$);
$t = 1,2,3 \ldots\ldots T$ total time period($T = 15$);

PTA_{it} is a $k \times 1$ vector of the explanatory variable;δ_{it} are the $k \times 1$ coefficient vectors; λ_{ij} are the scalars; and μ_i is the cross-section effects. If the variables in Eq. (5) are I(1) and cointegrated, then the error term should follow I(0) order in all cross-sections to have long-run equilibrium relationship between the variables. The principal feature of cointegrated variables is that their time paths are influenced by the extent of any deviation from long-run equilibrium. This explains that an error correction model in which the short-run dynamics of the variables in the system can be influenced by the deviation from equilibrium. Hence it is necessary to reparametrize Eq. (5) into an error correction equation.

$$\Delta PGSDP_{it} = \emptyset_i(PGSDP_{i,t-1} - \theta_t^{'}PTA_{it}) + \sum_{j=1}^{p-1} \lambda_{ij}^{*}\, \Delta PGSDP_{i,t-j} + \sum_{j=0}^{q-1} \delta_{ij}^{'*}\, \Delta PTA_{i,t-j} + \mu_i + \varepsilon_{it} \quad (6)$$

Where:

$$\emptyset_i = -\left(1 - \sum_{j=1}^{p} \lambda_{ij}\right), \theta_i = \frac{\sum_{j=0}^{q} \delta_{ij}}{(1 - \sum k\, \lambda_{\,i\,k})}, \lambda_{ij}^{*} = -\sum_{m=j+1}^{p} \lambda_{im},$$

$$j = 1, 2, \ldots, p-1, and\ \delta_{ij}^{*} = -\sum_{m=j+1}^{q} \delta_{im}\ \ j = 1, 2, 3, \ldots, q-1.$$

The $\emptyset_i$ is speed of adjustment parameter. The speed of adjustment parameter must be non-zero. If $\emptyset_i$=0, then there would be no long-run relationship. This parameter is expected to be negative sign with statistical significance under the assumption of bringing back the variables to the long run equilibrium. But more recently Pesaran, Shin and Smith (1997, 1999) propose a PMG estimator which combines both averaging and pooling the residuals. This test incorporates the intercept, short-run coefficients, and different error variances across the groups (like the MG estimators). However it holds the long-run coefficients to be equal across the groups (like FE estimators).

The MG estimate of the error correction coefficients, $\emptyset$, is

$$\widehat{\emptyset} = N^{-1} \sum_{i=1}^{N} \widehat{\emptyset}_i \quad (7)$$

With the variance

$$\hat{\Delta}_{\hat{\emptyset}} = \frac{1}{N(N-1)} \sum_{i=1}^{N} (\hat{\emptyset}_i - \hat{\emptyset})^2 \quad (8)$$

The Eq. (6) can be estimated by three different estimators such as mean group estimator of Pesaran and Smith (1995), pooled mean group estimator developed by Pesaran et al. (1999) and dynamic fixed effects estimator. According Pesaran and Shin (1999), panel ARDL can be applied even if the variables follow different order of integration, i.e. I (0) and I (1) or a mixture of both.

4. Empirical Analysis

The traditional panel unit root tests do not address the cross sectional dependence which might give an incorrect interpretation towards the stationary properties of large panel data. To overcome this problem, the present study has applied CD (Pesaran, 2004) test to check cross section interdependence between per capita Gross State Domestic Product (PGSDP) and Per capita tourism arrivals (PTA). The CD test is based on the average of the pair correction coefficients (ρ_{ij}) of OLS residuals regressions. The CD test results reported in Table 1 reject the null hypothesis of no cross-dependence between the variables. It means there is high dependence between per capita Gross State Domestic Product (PGSDP) and Per capita tourism arrivals (PTA) in Indian states.

Table 1. *Pesaran Cross-section dependency tests*

Test	Statistics	P-value
CD	27.177	0

After confirming cross sectional dependence between the variables, we have employed Pesaran Cross sectional Augmented Dickey-Fuller (PCADF) unit roots test to check stationary properties of variables. The PCADF test results are reported in Table 2. The result shows that PGSDP and PTA follow I (0) and I (1) orders respectively.

Table 2. *Pesaran's Cross-Sectional Augmented Dickey-Fuller (CADF) test results*

		Constant	Constant and Trend	
Variable	T bar	P-Value	T bar	P-Value
lnPGSDP	-1.427	0.890	-3.959	0.000***
lnPTA	-1.171	0.514	-1.703	0.992
ΔlnPGSDP	-4.271	0.000***	-4.711	0.000***
ΔlnPTA	-2.130	0.037**	-2.741	0.020**

Note: The critical values are -2.340, -2.170, and 2.070 at 1%, 5%, and 10% respectively with constant. -2.880, -2.690 and -2.590 at 1%, 5%, and 10% respectively with constant and trend. The ***, ** and * indicate1%, 5% and 10% level of significance.

The results of the pooled mean group (PMG), mean group (MG) and dynamic fixed effects (DFE) are reported in Table 3.

Table 3. *Panel ARDL Model Results (Pooled Mean Group and Mean Group Estimates)*

(Dependent Variable: $\Delta lnPGSDP$)

	Pooled Mean Group		Mean Group		Dynamic Fixed Effects	
Variables	Coefficients	Std. error	Coefficient	Std. error	Coefficient	Std. error
Long-run						
lnTR	0.786**	0.081	0.321	0.728	0.245***	0.555
Error Correction (Ø)	0.085	0.053	0.182**	0.062	0.792	0.238
Short-run coefficients						
ΔlnTR	0.091	0.186	0.179	0.247	0.087**	0.355
Intercept	0.222	0.109	0.442	0.287	-0.793	0.36
No. of states	23		23		23	
Observations	345		345		345	
Hausman Test			0.41		0.9955	
P-value			0.5243		0	

Note: Δ is first difference operator; *** , ** and * indicate 1%, 5% and 10% per cent level of significance; MPG means pooled mean group; MG means mean group; EC is error correction term.

According to PMG and DFE estimators, PTA has a positive and significant impact on PGSDP in the long run, whereas MG estimator suggests no significant impact of PTA on PGSDP both in the long-run and short-run. The MG and PMG estimators do not support any short run causality between variables. However, the DFE estimator shows the existence of short-run causality between the two variables at 5% level of significance.

However, in order to measure efficiency and consistency among the estimators (PMG, MG and DFE) the Hausman test has been applied. The validity of long-run homogeneity restrictions across Indian states, and hence efficiency of PMG estimator over the MG and DFE estimators, is examined by Hausman test. The Hausman test results accept the null hypothesis of homogeneity restrictions on the long-run regressors, which indicates that PMG is a more efficient estimator than MG or DFE. From the overall panel ARDL model, we found that tourism led growth hypothesis is valid in Indian States.

5. Concluding Remarks

The present study examined the relationship between tourism and economic growth in 23 Indian states during 1997-2011. The study have applied CD test (Pesaran, 2004) to check the cross section interdependence among the variables which rejects the null hypothesis of no cross section interdependence. The Pesaran (2007) cross section augmented Dickey Fuller (PCADF) test presents a different order of integration of the variables. We have applied the panel ARDL model (PMG, MG and DFE) to verify the short-run and long-run effects between per-capita tourism arrivals and per-capita gross State domestic product. Our findings confirmed that there is a significant evidence of tourism led growth in Indian States. The tourism industry depends on the arrivals of the international tourists and domestic tourist which is very negligible as compared to other developing and developed countries. The government has to put more emphasis on tourism sector by innovating and re-innovating different States as well as a national tourism sector with a view to have a possible contribution towards economic growth in India.

References

Akinboade, O.A. and Braimoh, L. (2010). International tourism and economic development in South Africa. *International Journal of Tourism Research*. No. 12. pp. 149-163.

Andriotis, K. (2002). Scale of hospitality firms and local economic development evidence from Crete. *Tourism Management.* No. 23. pp. 333-341.

Antonakakis, N. and Badinger, H. (2014). International business cycle spillovers since the 1870s. *Applied Economics*. No. 46. pp. 3682-3694.

Balaguer, J. and Zorda, C.M. (2002). Tourism as a long-run economic growth factor: the Spanish case. *Applied Economics*. No. 34. pp. 877-884.

Balaguer, J. and Cantavella-Jorda, M. (2002). Tourism as a long-run economic growth factor: the Spanish case. *Applied Economics*. No. 34. pp. 877-884.

Brida, J. and Pulina, M. (2010). A literature review on the tourism-led-growth hypothesis. *Working Paper* CRENoS 201017. Centre for North South Economic Research, Sardinia.

Chatziantoniou, I., Filis, G., Eeckels, B. and Apostolakis, A. (2013). Oil prices, tourism income and economic growth: a structural approach for European Mediterranean countries. *Tourism Management.* No. 36. pp. 331-341.

Chen, C.-F. and Chiou-Wei, S.Z. (2009). Tourism expansion, tourism uncertainty and economic growth: new evidence from Taiwan and Korea. *Tourism Management*. No. 30. pp. 812-818.

Chou, M.C. (2013). Does tourism development promote economic growth in transition countries? A panel data analysis. *Economic Modelling*. No. 33. pp. 226-232.

Croes, R. and Vanegas, M. (2008). Cointegration and causality between tourism and poverty reduction. *Journal of Travel Research*. No. 47. pp. 94-103.

Dritsakis, N. (2012). Tourism development and economic growth in seven Mediterranean countries: a panel data approach. *Tourism Economics*. No. 18. pp. 801-816.

Durbarry, R. (2004). Tourism and economic growth: the case of Mauritius. *Tourism Economics*. No. 10. pp. 389-401.

Eeckels, B., Filis, G. and Leon, C. (2012). Tourism income and economic growth in Greece: Empirical evidence from their cyclical components. *Tourism Economics*. No. 18. pp. 817-834.

Easterly, W. and Kraay. A. (2000). Small States, Small Problems, Income, Growth and Volatility in Small states. *World Development*. No. 28. pp. 2013-27.

Eugenio-Matin, J.L. and Morales, N.M. (2004). Tourism and economic growth in Latin American countries: a panel data approach. *Social Science Research Network Electronic Paper.*

Fayissa, B., Nsiah, C. and Tadesse, B. (2011). Tourism and economic growth in Latin American countries further empirical evidence. *Annals of Tourism Research*. No. 17. pp. 1365-1373.

Ghali, A. (1976). Tourism and economic growth: an empirical study. *Economic Development and Cultural Change*. No. 24. pp. 527-538.

Gunduz, L. and Hatemi-J. (2005). Is the tourism-led growth hypothesis valid for Turkey?. *Applied Economics Letters*. No. 12. pp. 499-504.

Indian Tourism Statistics. (2013).

Ivanov, S. and Webster, C. (2013). Tourism's impact on growth: the role of globalisation. *Annals of Tourism Research.* No. 41. pp. 231-236.

Jackman, M. and Greenidge, K. (2010). Modelling and forecasting tourist flows to Barbados using structural time series models. *Tourism and Hospitality Research.* No. 10. pp .1-13.

Katircioglu, S.T. (2009). Revisiting the tourism-led-growth hypothesis for Turkey using the bounds test and Johansen approach for cointegration. *Tourism Management*. No. 30. pp. 17-20.

Kim, H.J., Chen, M.H. and Jang, S.C. (2006). Tourism expansion and economic development: the case of Taiwan. *Tourism Management*. No. 27. pp. 925-933.

Lanza, A., Temple, P. and Urga, G. (2003). The implications of tourism specialisation in the long run: an econometric analysis for 13 OECD Economies. *Tourism Management*. No. 24. pp. 315-321.

Lean, H.H. and Tang, C.F. (2010). Is the tourism-led growth hypothesis stable for Malaysia? A note. *International Journal of Tourism Research.* No. 12. pp. 375-378.

Lee, C.-C. and Chang, C.P. (2008). Tourism development and economic growth: a closer look at panels. *Tourism Management.* No. 29. pp. 180-192.

McKinnon, R.I. (1964). Foreign exchange constraint in economic development and efficient aid allocation. *Economic Journal.* No. 74. pp. 388-409.

Narayan, P.K. (2004). Economic impact of tourism on Fiji's economy: empirical evidence from the computable general equilibrium model. *Tourism Economics*. No. 10. pp. 419-433.

Parrilla, J.C., Font, A.R. and Nadal, J.R. (2007). Tourism and long-term growth a Spanish perspective. *Annals of Tourism Research.* No. 34. pp. 709-726.

Pesaran, H.M. (2004). General diagnostic tests for cross-section dependence in panels. *Working paper. University of Cambridge*. Cambridge.

Pesaran, M.H. (2007). A simple panel unit root test in the presence of cross-sectional dependence. *Journal of Applied Econometrics*. No. 22. pp. 265-312.

Po, W.-C. and Huang, B.N. (2008). Tourism development and economic growth - a nonlinear approach. *Physica A*. No. 387. pp. 5535-5542.

Pizam, A. (2009). The global financial crisis and its impact on the hospitality industry. *International Journal of Hospitality Management*. No. 28. p. 301.

Proenca, S. and Soukiazis, E. (2008). Tourism as an economic growth factor: A case study for Southern European countries. *Tourism Economics*. No. 14. pp. 791-806.

Ridderstaant, J., Croes, R. and Nijkamp, P. (2013). The force field of tourism. *Review of Economic Analysis.* No. 5. pp. 1-24.

Schubert, S.F., Brida, J.G. and Risso, W.A. (2011). The impacts of international tourism demand on economic growth of small economies dependent on tourism. *Tourism Management.* No. 32. pp. 377-385.

Seetanah, B. (2011). Assessing the dynamic economic impact of tourism for Island economies. *Annals of Tourism Research.* No. 38. pp. 291-308.

Sugiyarto, G., Blake, A. and Sinclair, M. (2003). Tourism and globalization: economic impact in Indonesia. *Annals of Tourism Research.* No. 30. pp. 683-701.

Surugiu, C. and Surugiu, M.R. (2013). Is the tourism sector supportive of economic growth? Empirical evidence on Romanian tourism. *Tourism Economics*. No. 19. pp. 115-132.

Tang, C.F. and Tan, E.C. (2015). Does tourism effectively stimulate Malaysia's economic growth?", *Tourism Management.* No. 46. pp. 158-163.

Tang, C.F. and Tan, E.C. (2013). How stable is the tourism-led growth hypothesis in Malaysia? Evidence from disaggregated tourism markets. *Tourism Management*, No. 37. pp. 52-57.

Tang, C.-H.H. and Jang, S.S. (2009). The tourism-economy causality in the United States: a sub-industry level examination. *Tourism Management.* No. 30. pp. 553-558.

Tourism Satellite Accounts of India

United Nations World Tourism Organization (UNWTO) (2012). Annual Report.

Wang, Y. and Davidson. M.C. (2010). A review of micro analysis of tourist expenditures. Current Issues in Tourism. No. 13. pp. 507-524.

WTTC (2008). Tourism Satellite Accounting. World Travel and Tourism council, London. Online http://www.wttc.org/eng/Tourism_Research/Tourism_Satellite_Accounting/, accessed on March 2015.