Another look at tourism- economic development nexus

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A B S T R A C T

This paper investigates the causal relationships between tourism and economic development in emerging market economies. By using annual data for the period of 1995–2014, this study applies Granger causality analysis across countries to find the causal relationships between international tourism receipts (% GDP) and economic growth (annual %). Impulse responses function is also employed to track the responsiveness of one variable to shocks to another variable. Our estimation results generate evidence for uni-directional causality from tourism to economic growth in Brazil, Mexico and Philippines while reverse relationship is detected for China, India, Indonesia, Malaysia and Peru. No causality is obtained for seven out of sixteen emerging market countries, and finally, bidirectional causality is detected for Chile. The impulse responses analysis confirms causality test results by detecting the linkage between economic growth and tourism receipts. Discussion, policy implications, and further research suggestions are provided in the article.

1. Introduction

The relationship between economic growth and tourism receipts has been extensively studied in the past decades for both developed and developing countries. As tourism industry is growing in many countries, the causal relationship between economic growth and tourism receipts is becoming important for policy makers. According to The World Travel and Tourism Council (WTTC) (2017), this industry has had an impressive impact on the world economy. It created 292 million jobs and increased the global GDP by 10.2% in 2016. It is forecasted that the contribution of tourism industry on global GDP will increase and it will create 380 million jobs by 2027. It means 11% of the jobs in the world.

Governments in current economic environment try to overcome macroeconomic problems such as macroeconomic instability, low growth and unemployment by subsidizing productive sectors. They consider international tourism as one of the significant potential growth sectors (Brohman, 1996). The growth of tourism may lead to an increase in government revenues and household income through different channels like improvements in the balance of payments and additional employment. Tourism can support policy makers to foster economic growth through creating regional employment opportunities, supplying foreign exchange, and promoting transportation, construction, food/beverage and accommodation sectors. In addition, policy makers can use tourism as an instrument to decrease inequalities in regional welfare, because tourism leads to income transfer from developed countries to developing countries (Tugcu, 2014). Hence, the development of

tourism may have a positive contribution to economic growth (e.g. Khan, Phang, & Toh, 1995; Lee & Kwon, 1995; Lim, 1997; Oh, 2005).

Chao, Hazari, Laffargue, Sgro, and Yu (2006) proves that tourism expansion yields a gain in revenue by increasing the relative price of non-traded goods. On the other hand, this increase, may cause a de-industrialization in the traded goods sector and decrease resident welfare through decreasing demand for the capital used in the traded sector. Chao, Hazari, Laffargue, and Yu (2009) indicate that under domination of output effect, tourism expansion increases employment and welfare. However, if the expansion of tourism sector leads to an increase in the cost of labor, this can lead to lower employment and welfare under certain conditions.

Researchers employ different econometric models to verify the relationship between macroeconomic variables. In order to get more reliable results, instead of assessment of individual coefficient estimates, it is necessary to evaluate the significance of variables in an equation, based on joint tests on all of the lags of a particular variable in a model (Brooks, 2014). In fact, the tests described above are referred to as causality tests and described by Granger (1969). Therefore, this study examines the causal relationship between tourism and economic development in emerging market countries using Granger causality test. Of course, this test cannot explain how long these effects require to take place or the qualitative nature of the relationship. Hence, impulse responses function is employed to solve this problem and trace out the nature of responsiveness of each variable to shocks to another variable.

When the main motivation is to investigate the role of tourism

industry in the economy of a country, the important indicator is the contribution of tourism in gross domestic product of that country. Sometimes, a country's tourism receipts (current US$) increases, but at the same time, its share in the economy decreases, because other economic sectors grow faster and play a more important role in economic growth. Therefore, tourism receipts (current US$) cannot be a suitable proxy for studying tourism sector variations and its effect on economic development. Previous studies usually used "dollar-value of tourism receipts" or "tourism receipts as percentage of imports" to evaluate tourism development, which are not appropriate proxies for tourism development. They found many spurious causalities between tourism development and economic growth.

Motivated by aforementioned shortcomings, the aim of this study is to analyze the likely effect of international tourism on economic growth of countries which are in the process of economic development. To this end, the sample of the present study has been deliberately chosen as emerging economies that are in the process of relatively high rates of industrialization and economic growth. These countries play a growing role both in terms of global economy and politics. Furthermore, this paper uses tourism receipts as percentage of GDP to measure tourism development and study its causal relationship with economic growth proxied by annual growth rate of real GDP in emerging market economies.

This study contributes to the literature in two ways: First, investigating tourism-economic growth relationship in emerging economies based upon two complementary methods. Second, comparing misleading results based on selecting inappropriate proxies with reliable results obtained from selecting appropriate proxies to measure tourism and economic growth.

According to Oh (2005) and Tugcu (2014) the causal relationship between tourism and economic growth is defined in terms of four related hypotheses: First one, the so-called "growth hypothesis" suggests that tourism expansion is the dynamic that strengthens the economic growth. In this situation, government can boost economic growth by subsidizing tourism. Second one, the "reverse hypothesis" refers to a situation in which the economic growth plays an important role in tourism development. In this case, government can transfer subsidies to other sectors without any negative impact on economic growth. Third, the neutrality hypothesis denotes that tourism development and economic growth are not affected by each other. This hypothesis is supported if there is no causality between tourism and economic growth. Fourth, the feedback hypothesis indicates a reciprocal relationship between growth and tourism. When this hypothesis is supported, tourism expansion polices may raise economic growth, and also higher economic growth can have a positive effect on tourism development.

The rest of this paper is organized as follows: The next section reviews the Literature. Section 3 describes the data and methodology. Section 4 presents the results of our analysis including Granger causality test. Section 5 concludes the paper. Finally, Section 6 provides policy implications and further comments.

2. Literature review

2.1. Economic growth - tourism development relationship

Over the past several decades, the tourism industry has experienced a rapid growth and has emerged an important sector proving to be beneficial to the economy in terms of employment creation, foreign exchange earnings, government revenue, and reduction in poverty (Clancy, 1999; Yap & Saha, 2013). Besides these direct effects, tourism industry has also made incredible indirect positive impacts on the economy through its contribution to the balance of payments, improvement of human living standards, rising government revenues through profits and taxes and the expansion of production of goods and services (Paramati, Alam, & Chen, 2016). Fayissa, Nsiah, and Tadesse (2011) provided empirical evidence of tourism industry contribution to

the GDP growth and investment in infrastructure and human capital development of Latin American countries. Therefore, tourism development has been the engine of economic growth across the world (Brida & Risso, 2009; Tang & Tan, 2013).

Alongside the rising importance of the tourism industry for a country's economy, the subject of investigating the relationship between tourism and economic growth has gained lots of attention during the last decades (Balaguer & Cantavella-Jorda, 2002; Durbarry, 2004; Holzner, 2011; Lee & Brahmasrene, 2013; Lee & Chang, 2008; Narayan, 2004; Oh, 2005; Tang & Tan, 2015; Tugcu, 2014); however, the results appear to be mixed.

Upon examination of relevant literature, it is noted that the relationship between tourism development and economic growth is categorized in four different strands: 1. Tourism-led economic growth (TLEG), 2. Economic-driven tourism growth (EDTG), 3. Reciprocal relationship between economic growth and tourism development, and 4. No causal relationship (Chen & Chiou-Wei, 2009; Oh, 2005; Paramati et al., 2016).

2.1.1. Tourism led economic growth

Tourism-led economic growth (or growth hypothesis) proposes a positive effect of the growth of tourism activities on economic growth. A growing body of literature has examined the aforementioned hypothesis.

Balaguer and Cantavella-Jorda (2002), Proença and Soukiazis (2008), Ivanov and Webster (2007), Lee and Brahmasrene (2013), Cortés-Jimenez and Pulina (2010) and Nowak, Sahli, and Cortés-Jimenez (2007) studied the validity of TLEG hypothesis in different samples of EU countries, and all of them except Ivanov and Webster (2007) proved this hypothesis in their sample of countries. Among these studies, Balaguer and Cantavella-Jorda (2002), Proença and Soukiazis (2008), Cortés-Jimenez and Pulina (2010) and Nowak et al. (2007) proved the validity of TLEG hypothesis in Spain and Ivanov and Webster (2007) rejected it. Proença and Soukiazis (2008) justified this hypothesis in Greece and Ivanov and Webster (2007) falsified it. Furthermore, the evidences presented by Proença and Soukiazis (2008) and Cortés-Jimenez and Pulina (2010) confirm this hypothesis for Italy.

In the following, above mentioned studies about EU countries are explained in detail.

Spain has been an important tourist destination in the last four decades. Foreign exchange income has a significant weight in this economy, and tourism receipts plays an important role in current account and trade balance. Balaguer and Cantavella-Jorda (2002) investigated the effect of tourism on long-run economic growth in Spain. They applied causality and cointegration approach and confirmed TLEG hypothesis in Spanish economy.

Lee and Brahmasrene (2013) have analyzed the relationship between tourism receipts per capita (in current US$), economic growth, foreign direct investments and CO_2 emissions per capita (in metric tons) in European Union countries during 1988–2009. The results from the panel cointegration and fixed-effects models showed that long-run relationship exists between the variables. Moreover, there is a positive relationship between economic growth and the other three variables (FDI, tourism receipts, and CO_2 emissions).

Proença and Soukiazis (2008) investigated the importance of international tourism revenues (at PPP constant prices) as a conditioning growth factor for improving the host population's standard of living for four southern European countries (Italy, Greece, Portugal and Spain) between 1990 and 2004. By using a conditional convergence approach, the results confirmed tourism revenues as the conditioning factor for economic growth for these countries. Thus, the results provided evidence that support the TLEG hypothesis.

Cortés-Jimenez and Pulina (2010) examined the above-mentioned hypothesis for the case of Spain and Italy by applying cointegration and multivariate Granger causality tests. The sample period covered 1964–2000 for Spain and 1954–2000 for Italy. Using a more advanced

economic model, in which physical and human capital were included as additional variables, the authors identified a unidirectional relationship from international tourism receipts per capita to economic growth in the case of Italy. In Spain, the relationship was rather bidirectional.

Nowak et al. (2007) examined the link between tourism exports, imports of capital goods and economic growth. This study proposed an alternative mechanism through which tourism receipts would affect economic growth positively. The authors have argued that an increase in tourism receipts is likely to allow for an increase in the volume of imported capital goods which, in turn, is expected to enhance the process of economic growth. This new hypothesis was called TKIG (tourism → capital goods imports → growth) and was tested by using real GDP, tourism receipts and manufactured product imports data series for the Spanish economy between 1960 and 2003. Using cointegration and Granger's causality tests; the authors concluded that the results supported the TKIG hypothesis, and tourism receipts are a financing source for capital goods that in turn positively affect economic growth.

Ivanov and Webster (2007) proposed a methodology in order to measure the contribution of tourism to economic growth (proxied by real GDP per capita growth) and applied it to the case of three European countries (Greece, Cyprus, and Spain). They disaggregated economic growth into two factors: growth generated by tourism industry and growth generated by other industries. Their results detected a weak relationship between tourism and economic growth in all three countries.

Tourism- economic growth nexus has been analyzed and compared in different continents in some studies. For example, Tugcu (2014) employed a panel data of the African, Asian and European countries that border the Mediterranean Sea covering the period 1998–2011 to test the TLEG hypothesis. Their results of the panel Granger causality test indicate that in some countries, tourism causes economic growth, while causality goes from economic growth to tourism in some others. In other words, the outcomes showed that the direction of the causality between economic growth and tourism depends on the tourism indicators and country groups. Moreover, he concluded that European countries are the countries that benefit from tourism as an effective input for economic growth in the Mediterranean region. This is a doubtful conclusion because his research method doesn't show the qualitative nature (positive or negative) of the effect of tourism on economic growth.

TLEG hypothesis has been proven for African economies and Mediterranean region, and disproven for Latin American countries, by Fayissa, Nsiah, and Tadasse (2008), Dritsakis (2012) and Brida, Pereyra, and Devesa Such (2008) respectively.

Fayissa et al. (2008) examined the above-mentioned model using a panel data of 42 African countries from 1995 to 2004. The outcomes indicated that receipts from tourism industry contribute significantly to the current level of GDP and to the economic growth of Sub-Saharan African countries.

Dritsakis (2012) investigated the long-run relationship between economic growth and tourism development in seven Mediterranean countries during the period 1980–2007. By applying the panel cointegration and fully modified ordinary least squares (FMOLS), the outcomes supported the above-mentioned hypothesis i.e. earnings in the tourism industry have significant impact on the GDP in the case of the seven Mediterranean countries.

Brida et al. (2008) applied the method presented by Ivanov and Webster (2007) to study tourism oriented Latin American economies: Uruguay, Brazil, Argentina and Mexico. This study provided a chance for authors to compare their results with those of Ivanov and Webster (2007). Similar to the findings of Ivanov and Webster (2007), the direct contribution of tourism to economic growth in Latin American countries was not significant. Though it was clear that the contribution must be measured in local scale rather than in the whole economy.

Some studies have investigated the TLEG hypothesis for individual countries rather than a group of countries. For example, the results of Rakotondramaro and Andriamasy (2016), Tang and Tan (2015), Trang, Duc, and Dung (2014) and Brida, Pereyra, Risso, Devesa Such, and Aguirre Zapata (2009) show the existence of a relationship between tourism and economic growth in Madagascar, Malaysia, Vietnam and Colombia respectively. These four studies are explained in detail below.

Using the co-integration-based error correction model, Rakotondramaro and Andriamasy (2016) investigated the causal relationship among tourism development, economic growth and poverty in the case of Madagascar during the period 1988–2013. The results indicated that Granger causality runs from tourism development and poverty to growth and from poverty and growth to tourism development in the short-run as well as in the long-run. It was also revealed that tourism development and economic growth don't lead to reduction in poverty in Madagascar's case.

Tang and Tan (2015) tried to further prove the validity of the TLEG hypothesis in Malaysia by applying a multivariate model derived from the Solow growth theory. By employing annual data from 1975 to 2011, they found that tourism has a positive impact on Malaysia's economic growth both in the short-run and in the long-run. Also, the results showed that tourism Granger-causes economic growth. Authors interpreted it as empirical support for TLEG hypothesis in Malaysia.

Trang et al. (2014), investigated the same hypothesis in Vietnam during the period 1992–2011. In order to test the hypothesis, the authors applied two-step procedures. First, the Granger causality test was employed to identify the link between tourism earnings and GDP. Second, growth decomposition methodology was used to measure the contribution of tourism to economic growth. The outcomes suggested that short-run and long-run relationship exist between tourism and economic growth in Vietnam. Authors asserted finding support for TLEG hypothesis in Vietnam.

Similarly, Brida et al. (2009) investigated the contribution of tourism to economic growth in Colombia from two perspectives. First they examined the impact over the past two decades from nearly 1994 to 2007 and then studied the importance of tourism with respect to long-term growth i.e. the TLEG hypothesis. The results indicated the existence of a cointegration between real exchange rate, tourism expenditures and real GDP per capita.

Similarly, the TLGH was confirmed in the literature by researchers such as Gunduz and Hatemi (2005), Zortuk (2009), and Isik (2012) for Turkey; Akinboade and Braimoh (2010) and Brida, Lanzilotta, Lionetti, and Risso (2010) for South Africa and Uruguay; Brida and Risso (2010) for the case of Italy; Tang and Abosedra (2012) for the case of Lebanon; Kreishan (2011) for the case of Jordan; Belloumi (2010) for Tunisia; Jackman (2012) for the case of Barbados; Bandula Jayathilake (2013) and Srinivasan, Kumar, and Ganesh (2012) for Sri Lanka; Li, Mahmood, Abdullah, and Chuan (2013) for the case of Malaysia; Surugiu and Surugiu (2013) for the case of Romania; Ghartey (2013) for the case of Jamaica.

2.1.2. The economic-driven tourism growth

The economic-driven tourism growth (or reverse) assumption suggests that economic development positively affects tourism growth. The logic behind this argument is that economic growth leads to development of tourism infrastructure, education and safety progresses in that economy, which may positively affect tourist arrivals. In the literature, there are a few studies that have reported the EDTG hypothesis. Payne and Mervar (2010) examined the long run relationship between tourism development and economic growth for Croatia by using quarterly data from 2000 to 2008. The results of Toda-Yamamoto long-run causality tests reveal a unidirectional causality from real GDP to international tourism revenues and the real effective exchange rate.

Oh (2005), examined the above-mentioned link for the case of South Korea during the period 1975–2001. The results indicated that a one-way causal relationship of economic-driven tourism growth exists. Similarly, other researchers found evidence that support this causal

relationship, such as Ahiawodzi (2013) for the case of Ghana during 1985–2010; Odhiambo (2011) for the case of Tanzania during 1980–2008; Narayan (2004) for the case of Fiji during 1970–2000, but none of them analyzed the qualitative nature of this relationship.

2.1.3. Reciprocal relationship

The hypothesis of reciprocal (or feedback) relationship between tourism and economic growth proposes that the two variables lead to each other. This relationship has been studied for different samples of countries in different regions and has been particularly found to be valid for Mediterranean region and non-OECD countries. By using recently developed panel Granger causality test, Bilen, Yilanci, and Eryüzlü (2017) tested the causal relationship between economic growth and tourism development for twelve Mediterranean countries from 1995 to 2012. The findings of the study indicated the existence of bi-directional long-run and short-run causality between tourism and economic growth. The results showed that economic growth and tourism development mutually influence each other.

Lee and Chang (2008) re-investigated the long run causal relationship between tourism and economic growth for OECD and non-OECD countries including those in Asia, Latin America and Sub-Sahara Africa using heterogeneous panel cointegration technique for 1990–2002. The outcomes imply a unidirectional causal relationship between tourism development and economic growth in OECD countries; a bidirectional link in non-OECD countries and a weak relationship in Asia.

Some studies applied causality and cointegration analysis or other methods to investigate the feedback hypothesis in short-run and long-run respectively. For example, Odhiambo (2011) proved this hypothesis in short-run for Tanzania, Dritsakis (2004) and Ridderstaat, Croes, and Nijkamp (2013) confirmed it in long-run, for Greece and Aruba respectively, and Katircioglu (2009a) has produced evidence for it in both short-run and long-run in the case of Malta. These studies are explained in detail in the following.

Odhiambo (2011) examined the relationship between tourism development and economic growth in Tanzania by applying ARDL-Bounds testing procedure. The results confirmed that there is a short-run bidirectional causality between economic growth and tourism development, while on the other hand, economic growth drives tourism development in the long run.

Dritsakis (2004) examined the impact of tourism on long-run economic growth for the case of Greece between 1960 and 2000. By applying cointegration and Granger's causality test, together with an error-correction model, the author found evidence of a bidirectional causal relationship between international tourism and economic growth. However, both tourism receipts and the real exchange rate had a strong causal relationship with economic growth, while economic growth and the real exchange rate affect tourism receipts only through a unidirectional causal relationship.

Similarly, Ridderstaat et al. (2013) used annual data between 1970 and 2005 to investigate the long run relationship between tourism development and economic growth in Aruba. Their results confirmed a bidirectional relationship.

Katircioglu (2009a, 2009b), by employing the bound test for cointegration and Granger causality test, tried to investigate the link between international tourism and economic growth in the case of Malta. Results revealed that a long-run equilibrium relationship exists between international tourism and economic growth in this country. On the other hand, the author argued that his Granger causality test results suggested that both the TLEG and EDTG hypotheses could be inferred for Malta since there is bidirectional causation between international tourism and economic growth. Likewise, Kim and Chen (2006), by employing the same method examined the link between international tourism arrivals and GDP, by using both the quarterly (1971–2003) and annual (1956–2002) data for the case of Taiwan. The results provided evidence that supports bidirectional relationship between tourism arrivals and economic growth.

Researchers such as Chen and Chiou-Wei (2009) tested the causal relationship between tourism expansion and economic growth in Taiwan and South Korea. They asserted that their results support the TLEG hypothesis for Taiwan and a feedback hypothesis for South Korea.

The reciprocal hypothesis was also confirmed in the literature by Khalil, Mehmood, and Waliullah (2007) for the case of Pakistan; Lee and Chien (2008) for the case of Taiwan; Amaghionyeodiwe (2012) for Jamaica; Lorde, Francis, and Drakes (2011) for the case of Brbados; Corrie, Stoeckl, and Chaiechi (2013) for the case of Australia; Trang et al. (2014) for the case of Vietnam; Tang (2013) for the case of Malaysia; Demiroz and Ongan (2005) for the case of Turkey; Kareem (2013) for the case of Africa; Nissan, Galindo, and Mendez (2011) for the case of 11 developed countries. The heterogeneous nature of the countries making up the samples of these countries suggest that the presence of a reciprocal relationship between tourism and economic growth cannot be attributed to the level of development or geographical location of the group of countries investigated.

2.1.4. Neutral relationship

A non-causal (or neutral) relationship denotes tourism has no considerable impact on economic growth, and vice versa. Relatively few studies supported this assumption.

Some studies like Sak and Karymshakov (2012) discovered the neutral relationship for samples of countries in different continents. The other studies like Katircioglu (2009a, 2009b) investigated this relationship for single countries. These two studies are explained in detail in the following.

Sak and Karymshakov (2012) investigated the causal relationship between tourism revenue and gross domestic product considering a panel of 135 countries divided into eleven groups for the period 1995–2008. Using Panel Granger causality, the results showed bidirectional causality in Europe, which seem to be consistent with the results of Nissan et al. (2011) briefly reported above; unidirectional causality between economic growth and tourism in America and Latin America & Caribbean countries; a reverse direction of causality in East Asia, South Asia and Oceania; and no causality in Asia, Middle East and North Africa, Central Asia and Sub-Sahara Africa. Neutral relationship was also confirmed by researchers such as Jackman and Lorde (2010) for the case of Barbados; Georgantopoulos (2013) for the case of India; Jin (2011) for the case of Hong Kong; Ekanayake and Long (2012) for the case of 140 developing countries.

Katircioglu (2009a, 2009b) tested the tourism led-growth hypothesis in the case of Turkey by applying the bounds test and Johansen approach for cointegration using annual data between 1960 and 2006. Unlike the previous studies, the results indicated that there is no cointegration between international tourism and economic growth in the case of Turkey. Kasimati (2011) investigated the role of tourism industry in the Greek economic growth using Granger Causality Test. The results revealed that there is no relationship between tourism and economic growth.

3. Data and methodology

3.1. Data and variables

This empirical analysis uses annual time series data on International tourism receipts (current US$), GDP (current US$) and GDP growth (annual %) for sixteen emerging market countries, for the period 1995–2014. The data has been obtained from the World Bank datasets.[1] International tourism receipts are all payments made by international inbound visitors to national carriers for international transport and also for services and goods in the destination country. International tourism receipts (% of GDP) is calculated using Eq. (1).

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[1] data.worldbank.org.

$$\text{Tourism receipts (\%GDP)} = \frac{\text{International tourism receipts (current US\$)}}{\text{GDP (current US\$)}} \times 100$$

$$(1)$$

Different institutions classify different lists of countries as emerging markets. Sixteen countries that all are classified as emerging markets by IMF, MSCI, S&P, Russell and Dow Jones are selected: Russia, South Africa, Philippines, Poland, Mexico, Peru, India, Malaysia, Hungary, Indonesia, China, Colombia, Brazil, Chile, Thailand and Turkey.

3.2. Unit root test

Before running the causality test, checking the stationarity of the series for each country is necessary. According to Brooks (2014) three potential problems arise while using non-stationary series in the analysis:

- A non-stationary series can strongly influence its properties and behavior. And the persistence of shocks to the series will always be infinite.
- The use of non-stationary series can lead to spurious regressions. In the other words, the regression "looks" good under standard measures but which is really valueless.
- It can be proved that while using a non-stationary series the standard assumptions of asymptotic analysis is not valid.

Hence, ADF test is applied and the results (available upon request) show that the series are stationary for all countries in our sample.

3.3. Pairwise Granger causality test

While studying the relationship between variables, usually the first thing that comes to mind is correlation. But correlation never implies causation in econometrics. Many correlations can be found in economics which are meaningless or spurious. The Granger (1969) introduces an approach to find a chronological ordering of movements of variables. In our study, this approach validly implies that movements in the tourism variable appear to lead those of economic growth and vice versa. Therefore, Granger causality method is used in this paper to study the variations in tourism development and economic growth in each country separately. Lag order selection criteria is applied to select the appropriate lag length. One and five are specified as minimum and maximum number of lags included in the model. These lag numbers imply the relevance of all past information and need to correspond to reasonable time-span which one variable can be used to predict the other variable. In this method, bivariate regressions of the following form are considered:

$$EG_t = a_0 + a_1 EG_{t-1}... + a_l EG_{t-l} + b_1 TR_{t-1} + ... + b_l TR_{t-l} + \varepsilon_t \qquad (2)$$

$$TR_t = a_0 + a_1 TR_{t-1}... + a_l TR_{t-l} + b_1 EG_{t-1} + ... + b_l EG_{t-l} + u_t \qquad (3)$$

l denotes number of lags included in the model and t denotes time period. This test can show linkages between the economic growth (annual %) (EG) and international tourism receipts (% GDP) (TR).

The null hypothesis of 1st regression is TR does not Granger-cause EG. The null hypothesis of 2nd regression is EG does not Granger-cause TR.

If TR causes EG, at least one of the lags of TR should be significant in the equation for EG and not vice versa. In this case, there is a uni-directional causality from TR to EG. On the other hand, if EG causes TR, at least one of the lags of EG should be significant in the equation for TR. If both sets of lags are significant, we say there is "bi-directional causality" between series. It is said that TR and EG are independent, if neither set of lags are statistically significant in the equation for the other variable.

In the next step, our proxies of tourism development and economic development are changed to International tourism receipts (current US

\$) and GDP (current US\$) respectively, and the same process is followed to compare the misleading outcomes of selecting inappropriate variables to represent tourism and economic development. Eqs. (4) and (5) are applied for this purpose:

$$\$GDP_t = a_0 + a_1 \$GDP_{t-1}... + a_l \$GDP_{t-l} + b_1 TR_{t-1} + ... + b_l TR_{t-l} + \varepsilon_t$$

$$(4)$$

$$\$TR_t = a_0 + a_1 \$TR_{t-1}... + a_l \$TR_{t-l} + b_1 \$GDP_{t-1} + ... + b_l \$GDP_{t-l} + u_t$$

$$(5)$$

l denotes number of lags included in the model and t denotes time period. This test can show linkages between the GDP (current US\$) and International tourism receipts (current US\$).

Finally, the word "causality" is somewhat of a misnomer. When there is a Granger-causality between two series, actually there is a correlation between the current value of one variable and lag-values of other variable; it does not mean that movements of one variable cause movements of another. In the other words, causality implies a chronological ordering of movements in the series (Brooks, 2014).

3.4. Impulse responses

Granger causality test cannot answer two questions: 1- Do changes in the measure of a variable have a negative or positive impact on another variable. 2- How long does the effect require to take place and work through the system. To solve these problems, Impulse responses are used to track the responsiveness of one variable to shocks to another variable (Brooks, 2014).

4. Results

Table 1 shows the results of Granger causality tests for emerging economies. Estimated findings are according to annual data between 1995 and 2014. In our causality analysis, the calculated *p*-value indicates that some estimations are significant and the null hypothesis of no causality between tourism development and economic growth can be rejected.

As we can see in Table 1, for the sample of sixteen emerging economies, in 10% significance level, there is a uni-directional causality from tourism receipts to GDP growth in Brazil, Mexico and Philippines. In 10% significance level, there is a uni-directional causality from GDP growth to tourism receipts in China, Indonesia, Malaysia and Peru. This causality exists for India in 1% significance level. In 10% significance

Table 1
Granger causality test results.

Null hypothesis				
Country	TR does not Granger-cause GR	GR does not Granger-cause TR	Lag	Results
Brazil	3.7139 (0.0719)*	2.1292 (0.1639)	1	TR → EG
China	0.7782 (0.4795)	2.9287 (0.0891)*	2	TR ← EG
Chile	3.0537 (0.0818)*	3.4241 (0.0639)*	2	TR ↔ EG
Colombia	1.8548 (0.1921)	0.4243(0.5241)	1	No
Hungary	1.8723 (0.1929)	0.1498 (0.8624)	2	No
India	1.0382 (0.3234)	8.8243 (0.0090)***	1	TR ← EG
Indonesia	2.5071 (0.1329)	6.3095 (0.0231)*	1	TR ← EG
Malaysia	1.1756 (0.4503)	4.2359 (0.0934)*	5	TR ← EG
Mexico	4.6492 (0.0466)*	0.5136 (0.4839)	1	TR → EG
Peru	1.21378 (0.2869)	4.13262 (0.0590)*	1	TR ← EG
Philippines	3.0671 (0.0933)*	0.6573 (0.6406)	4	TR → EG
Poland	3.2621 (0.1375)	2.1077 (0.2449)	5	No
Russia	0.6131 (0.7005)	1.5787 (0.3394)	5	No
South Africa	1.5043 (0.2584)	0.7055 (0.5118)	2	No
Thailand	0.9276(0.4202)	0.3477 (0.7127)	2	No
Turkey	1.36328 (0.5754)	3.9007 (0.3693)	5	No

Note: 1. The numbers in the parentheses are *P*-values. 2 *** and * indicate significance at 1% and 10% level.

level, there is a bi-directional causality between tourism receipts and GDP growth in Chile. No causality is detected between tourism receipts and GDP growth in Colombia, Hungary, Poland, Russian Federation, South Africa, Thailand and Turkey. So, neutrality hypothesis is justified for these seven countries.

Table 1 shows mixed results in the context of tourism-led growth hypothesis. Causal relationship between tourism and economic development vary, depending on different dynamics in sectoral interrelations, initial conditions and economic structures of the countries (Tugcu, 2014). Therefore, this instability of causal relationship can be also obtained between tourism and economic development for the same sample of countries in different time intervals, which can be explored in future studies.

The results indicate that the direction of causality is country specific. No causality is detected from tourism to economic growth in some countries. There are different reasons: 1- They import most of their tourism inputs, and the effect of tourism receipts on economy may vanish. 2- Tourism imposes adverse environmental costs or economic costs. Higher number of tourists may lead to increase in the prices and decrease in domestic demand and finally decrease in the welfare of the society. 3- The investment and growth in other sectors is higher than tourism sector. Therefore, the economic growth is mostly caused by other sectors rather that tourism sector. 4- Other negative externalities associated with tourism include property destruction, congestion and crowding of public transportation, roads and cities and conflict between residents and tourists.

Some countries have more tourist attractions and more potential to expand their economy using tourism sector. It is usually expected to find causality from tourism to economic growth in such countries. On the other hand, the expansion of the economy of some countries is more affected by other sectors. Higher economic growth may provide better opportunities for investment in tourism industry and increase tourism inflows. It is usually expected to find causality from economic growth to tourism in such countries.

Table 2 shows the results of Granger causality tests for emerging economies, when International tourism receipts (current US$) and GDP (current US$) are used as tourism and economic development variables.

As we can see in Table 2, for the sample of sixteen emerging economies, completely different and misleading results could be estimated by selecting wrong variables for representing tourism and economic development. The relationship between International tourism receipts (current US$) and GDP (current US$) is identified in 15 out of 16 countries.

Fig. 1 gives the impulse responses for economic growth (%GDP) associated with unit shocks to international tourism receipts (%GDP) for the case of Brazil and Mexico. Considering the signs of the responses, increasing international tourism receipts has a negative impact for the first two periods, and a positive impact for the next three periods, but beyond that, the shock appears to have worked its way out of the system.

The reason behind negative effect of international tourism on economic growth of Brazil and Mexico in the first two periods could be summarized in price increases and infrastructure cost. Higher number of international tourists increases demand for basic goods and services, which leads to increase in prices. It affects local residents negatively, especially when the country doesn't have capable infrastructure to provide tourists with high quality food, drinks and equipment, and is forced to import these products. Increasing number of international tourists may increase local government expenditures (in short-run) on improving roads, airports and other infrastructures. On the other hand, foreign exchange earnings generated by international tourism expenditures can stimulate investment in other sectors, and enhance economic growth in long-run.

Fig. 2 gives the impulse responses for economic growth (%GDP) associated with unit shocks to international tourism receipts (%GDP) for the case of Philippines. Considering the signs of the responses, increasing international tourism receipts has a positive impact for the first two periods, and a negative impact for the next four periods, but beyond that, the shock appears to have worked its way out of the system.

The reason behind positive effect of international tourism on economic growth of Philippines in the first two periods could be summarized in increase in contributions to government revenues and employment generation. The taxes on tourism businesses, and duties on goods and services provided to tourists increase government revenues. Expansion of international tourism boosts employment generation. Tourism creates jobs directly through restaurants, hotels and casinos. On the other hand, expansion of tourism revenues leads to economic dependence of domestic community on tourism. Local businesses embrace tourism to experience a rapid growth, but the impact of natural disasters in Philippines carries a high risk for tourism industry and may lead to a great decline in the economy.

Fig. 3 gives the impulse responses for international tourism receipts (%GDP) associated with unit shocks to economic growth (%GDP) for the case of Malaysia, India, Indonesia and Peru. Considering the signs of the responses, increasing economic growth has a positive impact for the 2nd and 3rd periods, but beyond that, the shock effect is disappeared gradually.

Fig. 4 gives the impulse responses for international tourism receipts

Table 2
Misleading results of Granger causality test while selecting wrong proxies.

Country	$TR does not Granger-cause $GDP	$GDP does not Granger-cause $TR	Lag	Results	Hypothesis
Brazil	5.46496 (0.0327)**	1.78410 (0.2003)	1	$TR → $GDP	Growth
China	12.4009 (0.0028)***	0.13779 (0.7154)	1	$TR → $GDP	Growth
Chile	0.19544 (0.6643)	12.6452 (0.0026)***	1	$TR ← $GDP	Reverse
Colombia	0.66218 (0.4277)	5.47882 (0.0325)**	1	$TR ← $GDP	Reverse
Hungary	5.72956 (0.0293)**	9.36209 (0.0075)***	1	$TR↔$GDP	Feedback
India	0.48697 (0.4953)	16.2171 (0.0010)***	1	$TR ← $GDP	Reverse
Indonesia	17.9826 (0.0006)***	17.5897 (0.0007)***	1	$TR↔$GDP	Feedback
Malaysia	3.15104 (0.0949)*	0.01045 (0.9199)	1	$TR → $GDP	Growth
Mexico	0.30273 (0.8674)	2.02663 (0.1949)	4	No	Neutrality
Peru	2.96270 (0.0871)*	5.45174 (0.0191)**	2	$TR↔$GDP	Feedback
Philippines	0.61191 (0.4455)	4.82723 (0.0431)**	1	$TR ← $GDP	Reverse
Poland	3.75162 (0.0517)*	4.59393 (0.0310)**	2	$TR↔$GDP	Feedback
Russia	3.72936 (0.0714)*	15.2814 (0.0012)***	1	$TR↔$GDP	Feedback
South Africa	3.88560 (0.0663)*	0.86140 (0.3671)	1	$TR → $GDP	Growth
Thailand	1.58675 (0.2259)	5.92087 (0.0271)**	1	$TR ← $GDP	Reverse
Turkey	6.26648 (0.0124)**	0.49870 (0.6185)	2	$TR → $GDP	Growth

Note: 1. The numbers in the parentheses are P-values. 2. ***, ** and * indicate significance at 1%, 5% and 10% level.
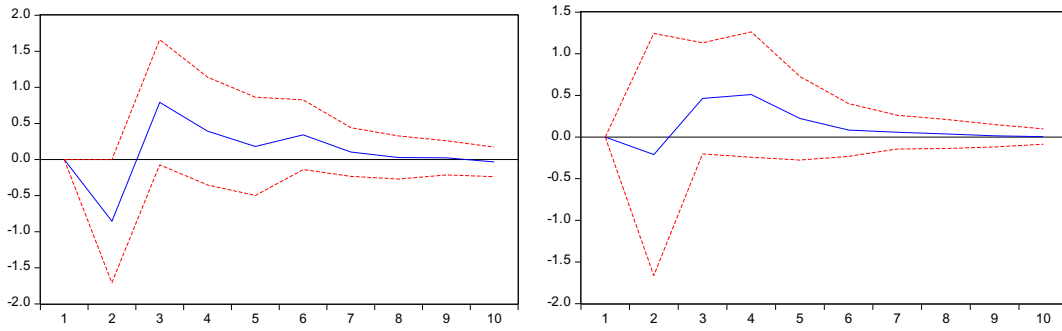
Fig. 1. Impulse responses and standard error bands for shocks to international tourism receipts (%GDP) of Brazil (left) and Mexico (right).
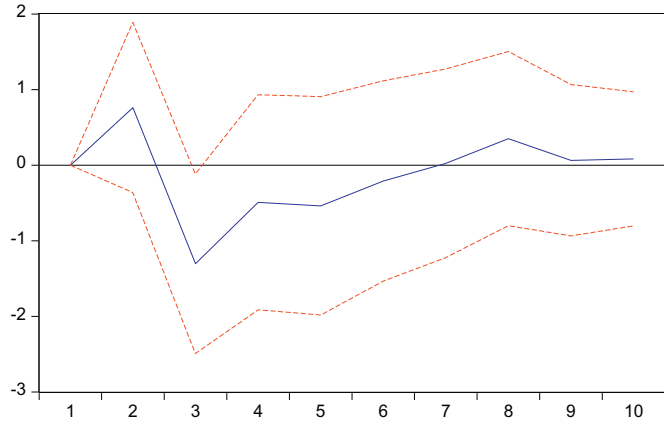

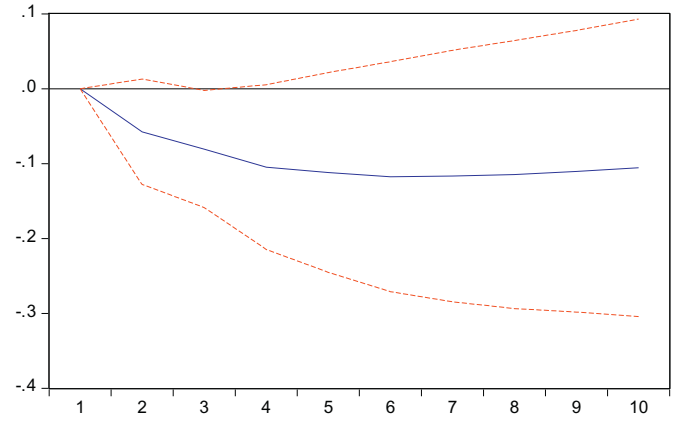Fig. 2. Impulse responses and standard error bands for shocks to international tourism receipts (%GDP) of Philippines.
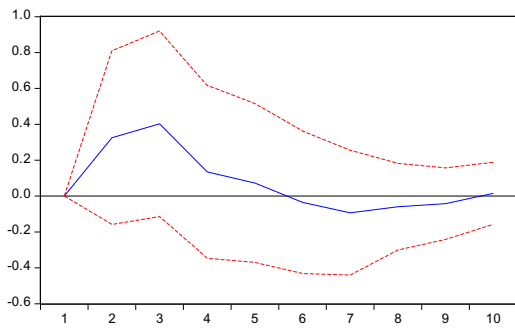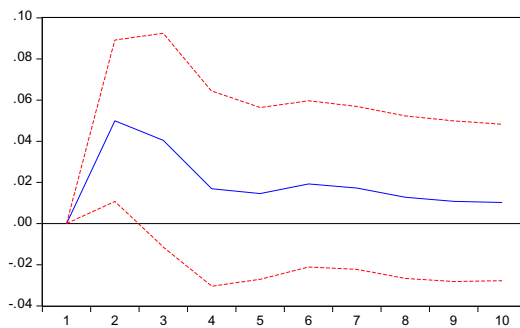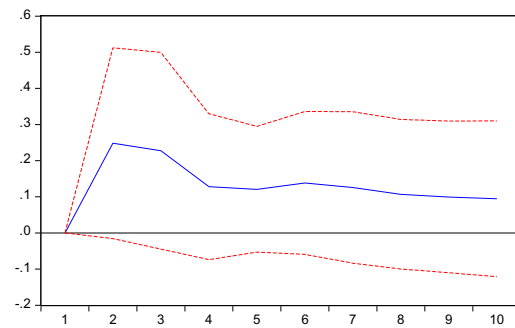
Fig. 4. Impulse responses and standard error bands for shocks to economic growth of China.
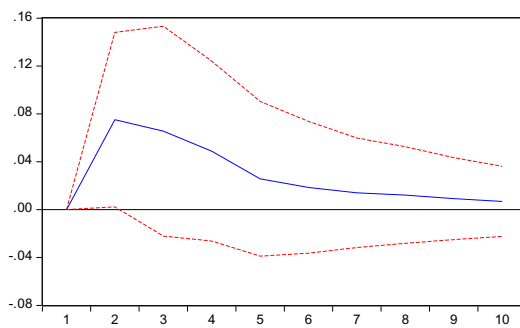

Fig. 3. Impulse responses and standard error bands for shocks to economic growth of Malaysia, India, Indonesia and Peru.

(%GDP) associated with unit shocks to economic growth (%GDP) for the case of China. Considering the signs of the responses, increasing economic growth has a negative impact on tourism that lasts for many periods.

In a country like China with high potential in manufacturing sector, economic growth motivates investors to invest in other sectors (with higher rate of return) rather than tourism. That could be the reason behind negative relationship between economic growth and tourism.

5. Conclusion

Our findings prove growth hypothesis in just two countries. Finding causality from tourism development to economic growth in many countries in the literature proves selecting inappropriate proxies may lead to wrong conclusions. Unlike what Tang and Tan (2015), and Lee and Brahmasrene (2013) using dollar value of variables show, in our sample of sixteen countries, expanding tourism sector only in Brazil and Mexico can effectively boost the economic growth of the country. On the other hand, the overall long-run effect of tourism development on Philippines is negative. In the case of Chile, tourism expansion polices affect economic growth, and also higher economic growth may have a positive effect on tourism development. This finding is in line with Fayissa et al. (2011) that used panel regression to prove tourism industry revenues contribute positively to the growth rate of GDP per capita in Latin American countries.

Tourism development cannot be effective in economic development of the other countries. The result of our paper is based on individual country analysis and joint tests on all of the lags of variables, rather than a sample analysis and individual coefficient estimates. In the case of Turkey, our finding is in line with Tugcu (2014) who used causality test and Katircioglu (2009a, 2009b) who applied cointegration method to study tourism receipt- economic growth nexus. Tourism is a sector that sometimes imposes adverse ecological, economic and environmental costs on a country's economy (Lee & Chang, 2008), and developing countries like Colombia, South Africa, Thailand and Turkey usually face these kinds of costs that can break down the link between economic growth and tourism. So, the validity of the neutrality hypothesis in these countries can be the natural outcome of the economic structure.

The causality from economic growth to tourism in India, Indonesia, Malaysia and Peru, complemented by impulse responses patterns indicates that economic development can develop tourism sector in these countries. In the case of Malaysia, it is worth mentioning that Gunduz and Hatemi (2005) and Tang and Tan (2015) employed a wrong variable ($ value of international tourism receipts) and claimed to find a causality from tourism to economic growth.

Comparing Tables 1 and 2 indicates that selecting different proxies in studying tourism-economic growth nexus, leads to completely different results, and employing inappropriate proxies may lead to wrong conclusions. Therefore, we need to be very careful in selecting appropriate variables before starting a study and applying the results in the policies.

The impulse responses analysis detects the linkage between economic growth and tourism receipts. As a contribution to the field, this analysis shows that counting on causality tests in studying tourism-economic growth nexus without analyzing the sign of the relationship and the time-span that effect requires to take place and work through the system is very simplistic and may come to wrong decisions and policy implications.

6. Policy implications

Tourism development is of great importance of economic development in Brazil and Mexico. A policy that subsidizes tourism will affect economic growth in these countries more than it will in other countries. These countries may increase their tourism receipts by improving

tourism offer structure in their tourist destinations. They may have policies for 1- improving the service quality including accommodation, transportation, food, trade and entertainment services. 2- improving characteristics of destinations to make them more competitive and attractive. 3- advertising of the destination offers. 4- organizing events like festivals and conferences. 5- improving financial management of costs and revenues (Budinoski, 2011).

Failure or success of a tourism destination in providing a secure and safe environment for visitors is of vital importance to tourism industry (Lawton, 1997). According to LEGATUM Prosperity Index (2016), Mexico is ranked poorly (133th in the world) in terms of Safety & Security. Hence, the policy makers need to have plans to increase the safety and security factors of tourism destinations to enhance tourism development and economic growth of their countries consequently.

Tourism business environment is the pattern of all the internal and external influences and conditions that affect its survival and development. Therefore, business environment factors are absolutely vital to the success of tourism industry (Pulendran, Speed, & Widing II, 2000). According to LEGATUM prosperity index, Brazil is ranked (106th in the world) in terms of business environment. Therefore, policy makers need to have plans to provide tourism businesses with ease of getting credit, affordability of financial services, ease of resolving insolvency, ease of getting electricity, and intellectual property protection.

In the other countries, directing the investments to the other industries can be more efficient to enhance economic growth. Government can transfer subsidies to other sectors (rather than tourism sector) without any negative impact on economic growth.

References

Legatum Prosperity Index™ (2016). www.prosperity.com.
Ahiawodzi, A. K. (2013). Tourism earnings and economic growth in Ghana. *British Journal of Economics, Finance and Management Sciences, 7*(2), 187–202.
Akinboade, O. A., & Braimoh, L. A. (2010). International tourism and economic development in South Africa: A Granger causality test. *International Journal of Tourism Research, 12*(2), 149–163.
Amaghionyeodiwe, L. A. (2012). A causality analysis of tourism as a long-run economic growth factor in Jamaica. *Tourism Economics, 18*(5), 1125–1133.
Balaguer, J., & Cantavella-Jorda, M. (2002). Tourism as a long-run economic growth factor: The Spanish case. *Applied Economics, 34*(7), 877–884.
Bandula Jayathilake, P. M. (2013). Tourism and economic growth in Sri Lanka: Evidence from cointegration and causality analysis. *International Journal of Business, Economics and Law, 2*(2), 22–27.
Belloumi, M. (2010). The relationship between tourism receipts, real effective exchange rate and economic growth in Tunisia. *International Journal of Tourism Research, 12*(5), 550–560.
Bilen, M., Yilanci, V., & Eryüzlü, H. (2017). Tourism development and economic growth: A panel Granger causality analysis in the frequency domain. *Current Issue in Tourism, 20*(1), 27–32.
Brida, G. J., Pereyra, J. S., & Devesa Such, M. J. (2008). Evaluation of the contribution of tourism to economic growth. *Anatolia: An International Journal of Tourism and Hospitality Research, 18*(2), 351–357.
Brida, G. J., Pereyra, J. S., Risso, W. A., Devesa Such, M. J., & Aguirre Zapata, S. (2009). The tourism-led growth hypothesis: Empirical evidence from Colombia. *Tourismos: An International Multidisciplinary Journal of Tourism, 4*(2), 13–27.
Brida, J. G., Lanzilotta, B., Lionetti, S., & Risso, W. A. (2010). The tourism-led growth hypothesis for Uruguay. *Tourism Economics, 16*(3), 765–771.
Brida, J. G., & Risso, W. A. (2009). Tourism as a factor of long-run economic growth: An empirical analysis for Chile. *European Journal of Tourism Research, 2*(2), 178.
Brida, J. G., & Risso, W. A. (2010). Tourism as a determinant of long-run economic growth. *Journal of Policy Research in Tourism, Leisure and Events, 2*(1), 14–28.
Brohman, J. (1996). New directions in tourism for third world development. *Annals of Tourism Research, 23*(1), 48–70.
Brooks, C. (2014). *Introductory econometrics for finance.* Cambridge university press.
Budinoski, M. (2011). Opportunity for increasing revenue in tourism with optimal structure of the tourism offer. *UTMS Journal of Economics, 2*(2), 163–170.
Chao, C. C., Hazari, B. R., Laffargue, J. P., Sgro, P. M., & Yu, E. S. (2006). Tourism, Dutch disease and welfare in an open dynamic economy. *The Japanese Economic Review, 57*(4), 501–515.
Chao, C. C., Hazari, B. R., Laffargue, J. P., & Yu, E. S. (2009). A dynamic model of tourism, employment and welfare: The case of Hong Kong. *Pacific Economic Review, 14*(2), 232–245.
Chen, C. F., & Chiou-Wei, S. Z. (2009). Tourism expansion, tourism uncertainty and economic growth: New evidence from Taiwan and Korea. *Tourism Management, 30*(6), 812–818.
Clancy, M. J. (1999). Tourism and development evidence from Mexico. *Annals of Tourism*

Research, 26(1), 1–20.

Corrie, K., Stoeckl, N., & Chaiechi, T. (2013). Tourism and economic growth in Australia: An empirical investigation of causal links. *Tourism Economics, 19*(6), 1317–1344. Advance online publication https://doi.org/10.5367/te.2013.0241.

Cortés-Jimenez, I., & Pulina, M. (2010). Inbound tourism and long run economic growth. *Current Issue in Tourism, 13*(1), 61–74.

Demiroz, D. M., & Ongan, S. (2005). The contribution of tourism to the long-run Turkish economic growth. *Ekonomický Cˇasopis (Journal of Economics), 53*(9), 880–894.

Dritsakis, N. (2004). Tourism as a long-run economic growth factor: An empirical investigation for Greece using causality analysis. *Tourism Economics, 10*(3), 305–316.

Dritsakis, N. (2012). Tourism development and economic growth in seven Mediterranean countries: A panel data approach. *Tourism Economics, 18*(4), 801–816.

Durbarry, R. (2004). Tourism and economic growth: The case of Mauritius. *Tourism Economics, 10*(4), 389–401.

Ekanayake, E. M., & Long, A. E. (2012). Tourism development and economic growth in developing countries. *The International Journal of Business and Finance Research, 6*(1), 51–63.

Fayissa, B., Nsiah, C., & Tadasse, B. (2008). Impact of tourism on economic growth and development in Africa. *Tourism Economics, 14*(4), 807–818.

Fayissa, B., Nsiah, C., & Tadesse, B. (2011). Research note: Tourism and economic growth in Latin American countries–further empirical evidence. *Tourism Economics, 17*(6), 1365–1373.

Georgantopoulos, A. G. (2013). Tourism expansion and economic development: Var/Vecm analysis and forecasts for the case of India. *Asian Economic and Financial Review, 3*(4), 464–482.

Ghartey, E. E. (2013). Effects of tourism, economic growth, real exchange rate, structural changes and hurricanes in Jamaica. *Tourism Economics, 19*(4), 919–942.

Granger, C. W. (1969). *Investigating causal relations by econometric models and cross-spectral methods.* Econometrica: Journal of the Econometric Society424–438.

Gunduz, L., & Hatemi, J. A. (2005). Is the tourism-led growth hypothesis valid for Turkey? *Applied Economics Letters, 12*(8), 499–504.

Holzner, M. (2011). Tourism and economic development: The beach disease? *Tourism Management, 32*(4), 922–933.

Isik, C. (2012). The USA's international travel demand and economic growth in Turkey: A causality analysis: (1990–2008). *Tourismos: An International Multidisciplinary Journal of Tourism, 7*(1), 235–252.

Ivanov, S., & Webster, C. (2007). Measuring the impact of tourism on economic growth. *Tourism Economics, 13*(3), 379–388.

Jackman, M. (2012). Revisiting the tourism-led growth hypothesis for Barbados: A disaggregated market approach. *Regional and Sectoral Economic Studies, 12*(2), 15–26.

Jackman, M., & Lorde, T. (2010). On the relationship between tourist flows and household expendi- ture in Barbados: A dynamic OLS approach. *Economics Bulletin, 30*, 1–9.

Jin, J. C. (2011). The effects of tourism on economic growth in Hong Kong. *Cornell Hospitality Quarterly, 52*(3), 333–340.

Kareem, O. I. (2013). A reassessment of tourism-exports led growth hypothesis in Africa. *American Journal of Tourism Research, 2*(1), 130–140.

Kasimati, E. (2011). Economic impact of tourism on Greece's economy: Cointegration and causality analysis. *International Research Journal of Finance and Economics, 79*(5), 79–85.

Katircioglu, S. (2009a). Testing the tourism-led growth hypothesis: The case of Malta. *Acta Oeconomica, 59*(3), 331–343.

Katircioglu, S. T. (2009b). Revisiting the tourism-led-growth hypothesis for Turkey using the bounds test and Johansen approach for cointegration. *Tourism Management, 30*(1), 17–20.

Khalil, S., Mehmood, K. K., & Waliullah, K. (2007). Role of tourism in economic growth: Empirical evidence from Pakistan economy. *The Pakistan Development Review, 46*(4), 985–995.

Khan, H., Phang, S. Y., & Toh, R. S. (1995). The multiplier effect: Singapore's hospitality industry. *The Cornell Hotel and Restaurant Administration Quarterly, 36*(1), 64–69.

Kim, H. J., & Chen, M. H. (2006). Tourism expansion and economic development: The case of Taiwan. *Tourism Management, 27*(5), 925–933.

Kreishan, F. M. M. (2011). Tourism and economic growth: The case of Jordan. *International Management Review, 7*(1), 89–93.

Lawton, G. R. (1997). *Tourist safety and security: Practical measures for destinations.* Madrid: World Tourism Organization World Tourism Organization (1996).

Lee, C. C., & Chang, C. P. (2008). Tourism development and economic growth: A closer look at panels. *Tourism Management, 29*(1), 180–192.

Lee, C. C., & Chien, M. S. (2008). Structural breaks, tourism development, and economic growth: Evidence from Taiwan. *Mathematics and Computers in Simulation, 77*(4), 358–368.

Lee, C. K., & Kwon, K. S. (1995). Importance of secondary impact of foreign tourism receipts on the South Korean Economy. *Journal of Travel Research, 34*(2), 50–54.

Lee, J. W., & Brahmasrene, T. (2013). Investigating the influence of tourism on economic growth and carbon emissions: Evidence from panel analysis of the European Union. *Tourism Management, 38*, 69–76.

Li, C. C., Mahmood, R., Abdullah, H., & Chuan, O. S. (2013). Economic growth, tourism and selected macroeconomic variables: A triangular causal relationship in Malaysia. *Margin: The Journal of Applied Economic Research, 7*(2), 185–220.

Lim, C. (1997). Review of international tourism demand models. *Annals of Tourism Research, 24*(4), 835–849.

Lorde, T., Francis, B., & Drakes, L. (2011). Tourism services exports and economic growth in Barbados. *The International Trade Journal, 25*(2), 205–232.

Narayan, P. K. (2004). Economic impact of tourism on Fiji's economy: Empirical evidence from the computable general equilibrium model. *Tourism Economics, 10*(4), 419–433.

Nissan, E., Galindo, M. A., & Mendez, M. T. (2011). Relationship between tourism and economic growth. *The Service Industries Journal, 31*(19), 1567–1572.

Nowak, J. J., Sahli, M., & Cortés-Jimenez, I. (2007). Tourism, capital good imports and economic growth: Theory and evidence for Spain. *Tourism Economics, 13*(4), 515–536.

Odhiambo, N. M. (2011). Tourism development and economic growth in Tanzania: Empirical evidence from the ARDL-bounds testing approach. *Economic Computation and Economic Cybernetics Studies and Research, 45*(3), 71–83.

Oh, C. O. (2005). The contribution of tourism development to economic growth in the Korean economy. *Tourism Management, 26*(1), 39–44.

Paramati, S. R., Alam, M. S., & Chen, C. F. (2016, September 21). The effects of tourism on economic growth and CO2 emissions a comparison between developed and developing economies. *Journal of Travel Research, 56*(6), 712–724 10.1177/0047287516667848.

Payne, J. E., & Mervar, A. (2010). Research note: The tourism–growth nexus in Croatia. *Tourism Economics, 16*(4), 1089–1094.

Proença, S., & Soukiazis, E. (2008). Tourism as an economic growth factor: A case study for Southern European countries. *Tourism Economics, 14*(4), 791–806.

Pulendran, S., Speed, R., & Widing, R. E., II (2000). The antecedents and consequences of market orientation in Australia. *Australian Journal of Management, 25*(2), 119–140.

Rakotondramaro, H., & Andriamasy, L. (2016). Multivariate Granger causality among tourism, poverty and growth in Madagascar. *Tourism Management Perspectives, 20*, 109–111.

Ridderstaat, J., Croes, R., & Nijkamp, P. (2013). Tourism and long-run economic growth in Aruba. *International Journal of Tourism Research. Advance online publication.*. http://dx.doi.org/10.1002/jtr.1941.

Sak, N., & Karymshakov, K. (2012). Relationship between tourism and economic growth: A panel Granger causality approach. *Asian Economic and Financial Review, 2*(5), 591.

Srinivasan, P. K., Kumar, S., & Ganesh, L. (2012). Tourism and economic growth in Sri Lanka: An ARDL bounds testing approach. *The Romanian Economic Journal, 45*, 211–226.

Surugiu, C., & Surugiu, M. R. (2013). Is the tourism sector supportive of economic growth? Empirical evidence on Romanian tourism. *Tourism Economics, 19*(1), 115–132.

Tang, C. F. (2013). Temporal granger causality and the dynamic relationship between real tourism receipts, real income, real exchange rates in Malaysia. *International Journal of Tourism Research, 15*(3), 272–284.

Tang, C. F., & Abosedra, S. (2012). Small sample evidence of the tourism-led growth hypothesis in Lebanon. *Current Issues in Tourism, 17*(3), 234–246. Advance online publication https://doi.org/10.1080/13683500.2012.732044.

Tang, C. F., & Tan, E. C. (2013). How stable is the tourism-led growth hypothesis in Malaysia? Evidence from disaggregated tourism markets. *Tourism Management, 37*, 52–57.

Tang, C. F., & Tan, E. C. (2015). Does tourism effectively stimulate Malaysia's economic growth? *Tourism Management, 46*, 158–163.

Trang, N. H. M., Duc, N. H. C., & Dung, N. T. (2014). Research note: Empirical assessment of the tourism-led growth hypothesis—The case of Vietnam. *Tourism Economics, 20*(4), 885–892.

Tugcu, C. T. (2014). Tourism and economic growth nexus revisited: A panel causality analysis for the case of the Mediterranean Region. *Tourism Management, 42*, 207–212.

World Travel and Tourism Council (2017). *Travel & tourism global economic impact & issues.* London: WTTC.

Yap, G., & Saha, S. (2013). Do political instability, terrorism, and corruption have deterring effects on tourism development even in the presence of UNESCO heritage? A cross-country panel estimate. *Tourism Analysis, 18*(5), 587–599.

Zortuk, M. (2009). Economic impact of tourism on Turkey's economy: Evidence from cointegration tests. *International Research Journal of Finance and Economics, 25*, 231–239.

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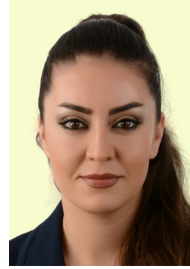
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