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The causal nexus between international tourism and economic growth

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Abstract

This study aims to determine whether there is a causality relationship between international tourism and economic growth in Bali Island via Granger and Toda-Yamamoto methods as the technique for testing the causality. The findings of the study confirm that there is significant evidence of three hypotheses related to the causal nexus between international tourism and economic growth in Bali. In conclusion, If the government of Bali wants to use the potential of international tourism as the main driver of its economic growth, then the Singapore market is a market that deserves to be given priority over other markets.

Keywords: Economic, growth, international, tourism, hypothesis.

El nexo causal entre el turismo internacional y el crecimiento económico

Resumen

Este estudio tiene como objetivo determinar si existe una relación de causalidad entre el turismo internacional y el crecimiento

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económico en la isla de Bali a través de los métodos de Granger y Toda-Yamamoto como la técnica para probar la causalidad. Los hallazgos del estudio confirman que existe evidencia significativa de tres hipótesis relacionadas con el nexo causal entre el turismo internacional y el crecimiento económico en Bali. En conclusión, si el gobierno de Bali quiere utilizar el potencial del turismo internacional como el principal motor de su crecimiento económico, entonces el mercado de Singapur es un mercado que merece ser priorizado sobre otros mercados.

Palabras clave: económico, crecimiento, internacional, turismo, hipótesis.

1. INTRODUCTION

Over the past few years, tourism has become an economic sector in a fast-growing world. Tourism contributes to global GDP (approximately) of approximately 3% in 2015 and is expected to continue increasing at years to come. The global tourism sector ranks third as an export category throughout the world after fuel-chemicals, foods and automotive products. Parikesit and Trisnadi (1997) said that the growth of world tourism was greatly influenced by two factors that are fundamental to tourism growth. First, external factors, such as factors that do not directly relate to the tourism industry but affects the form of tourism demand. The second factor is market power, i.e. demand, and supply, distribution of products and tourism services.

As the best main destination for international tourism in Indonesia, Bali Island relies its economic development on the international tourism industry. As one of the provinces in Indonesia, Bali is located in the eastern part of Indonesia and occupies an area of

around 563,286 hectares or about 0.29% of the Indonesian archipelago. Bali offers high value on the charm of nature, culture and spiritual elements inherent. Tourist attractions in Bali have also won the hearts of tourists through a variety of dances, culinary diversity, and cultural ritual celebrations that held regularly every year. Bali offers potential tourism products that include cultural tourism, nature tourism, marine tourism and city tourism. Based on 2004-2017 data, the number of foreign tourist visits to Bali shows a significant improvement, although the growth rate varies depending on the economic, social and political situation that occurs both domestically and abroad.

Theoretically, the longer tourists stay in a designated area, the more they will spend the money in the area of the tourist destination, at least for meals and drink, as well as lodging for the area they visit. Also, the higher the flow of tourist visits; it will increase revenues in the tourism sector. From 2004 to 2017, the top five major markets for Bali province are Australian tourist (with the number of tourist visits around 8,893,884 people), the second is China with tourist visits of 5,275,946 people, the third is Japan (with the number of tourist visits of 3,681,491 people), the fourth is Malaysia (with the number of tourist visits around 2,039,989 people), fifth is Taiwan (with the number of tourist visits around 1,821,717 people).

The purpose of this paper is to find out whether there is a causality relationship between international tourism and the economic growth in Bali Island using Granger and Toda-Yamamoto causality techniques. The remaining paper is organized as follows: Section 2

presents the literature review, section 3 explains the methodology used in the research, section 4 discusses the results and discussion, and section 5 provides the concluding section.

2. LITERATURE REVIEW

There are four types of hypotheses related to the relationship between tourism and economic growth. Two of them explained about the unidirectional causality relationship between tourism and economic growth, known as the Tourism-Led Economic Growth Hypothesis (TLEGH) and the Economic Driven Tourism Growth Hypothesis (EDTGH). The next possibilities are a bidirectional causality relationship between tourism and economic growth or referred to as Bidirectional Causality Hypothesis (BCH) and the absence of a causal relationship between these two variables, known as the Neutral Causality Hypothesis (NCH). Tourism-Led Economic Growth Hypothesis (TLEGH) is a hypothesis based on the construction of the export-led growth hypothesis. The export-led growth hypothesis believes in the role of exports (both goods and services) in sustaining and supporting a country's economic growth (Dritsaki and Adamopoulos, 2004).

TLEGH takes the urgency of the role of service exports in stimulating economic growth through creating tourism industry revenues and increasing foreign exchange revenues that can be used to finance imports of capital goods to produce goods and services that are

beneficial in accelerating economic growth (Cardenasgarcia et al., 2015).

On the other hand, the Economic Driven Tourism Growth Hypothesis (EDTGH) conveys the opposite, where the prerequisites for a country's economic growth and development are the basis for the development of its tourism industry (Oh, 2005). A positive movement from the role of the tourism sector to the economy will only occur if it is preceded by efforts to increase real economic growth as a whole. The expansive economic development in a country will guarantee the availability of two conditions, i.e. the availability of a better quality of country's physical-human capital and a more conducive economic atmosphere that can drive the development of the country's tourism sector (Antonakakis et al., 2015).

The relationship of bidirectional causality is possible to occur among tourism and economic growth, as concluded by the Bidirectional Causality Hypothesis (BCH). This condition arises if tourism is successfully present as an instrument that is able to encourage economic growth, and at the same time, economic growth can also be proven to be able to provide benefits for the development of the tourism industry (Ridderstaat et al., 2014). So that if improvements and development are carried out on economic growth and tourism, those efforts will benefit both (Chen, 2012). While the Neutral Causality Hypothesis (NCH) will occur if economic growth and tourism are independence between one another.

3. METHODOLOGY

The data used in this study is quarterly time series data with a span of 14 years (2004-2017). The variables considered in the causality relationship are international tourism (proxied by the number of foreign tourist visits) and economic growth. The definition of the number of foreign tourist visits is the amount of foreign tourist visits to Bali Province from ten (10) disaggregated tourism markets or countries, i.e. Australia, Japan, China, Taiwan, South Korea, Britain, Malaysia, France, the United States, and Singapore. Raw data is collected from the Regional Tourism Office (DISPARDA) of Bali Province and the Bpsstatistics (2017) Indonesia. The technique of Toda-Yamamoto for causality test will be utilized in order to support the conventional Granger causality test.

4. RESULTS AND DISCUSSION

Based on the standard procedures, firstly, this paper will execute the ADF stationarity test for determining whether the specific causality equation will employ the technique of Granger or Toda-Yamamoto causality test. The variables that found to be stationary (in level) will be tested using the Granger causality test and for those that grouped as non-stationary variables will be tested using the Toda-Yamamoto causality test.

Table 1: The results of stationarity test

Variables	Stationarity Condition	prob.
Economic Growth of Bali (EG)	Level	0.0000
China's tourist visits (chn)	2nd	0.0011
Japan's tourist visits (jpn)	2nd	0.0000
Malaysia's tourist visits (mys)	1st	0.0001
South Korea's tourist visits (kor)	1st	0.0000
Singapore's tourist visits (sgp)	1st	0.0001
Taiwan's tourist visits (twn)	Level	0.0051
Britain's tourist visits (gbr)	1st	0.0000
France's tourist visits (fra)	2nd	0.0001
USA's tourist visits (usa)	1st	0.0000
Australia's tourist visits (aus)	2nd	0.0000

Source: author's calculation, 2018

Table 1 shows that only economic growth (EG) and the number of Taiwan tourist visits (twn) are stationary at zero degree or I (0). Meanwhile, the number of foreign tourist visits from Malaysia (mys), South Korea (kor), Singapore (sgp), Britain (gbr), and the USA are stationary in first difference or I(1). For the remaining variables, namely the number of foreign tourist visits from China (chn), Japan (jpn), France (fra) and Australia (aus) are found to be stationary in the second difference or I(2). Based on the result, this paper will run

Granger causality test for Taiwan case, and Toda-Yamamoto causality test for other nine (9) country cases. Then through Table 2, it is known that the most optimum lags that can be identified for all disaggregated relationship possibilities are six (6). Only for the relationship among economic growth (EG) and the number of foreign tourist visits from France (fra) and Australia (aus) are found to have an optimum lag in 3 and 5, respectively.

Table 2: The optimum lag test results

Variables	**Optimum Lag**
Economic Growth => China (EG-chn)	6
Economic Growth => Japan (EG-jpn)	6
Economic Growth => Malaysia (EG-jpn)	6
Economic Growth => South Korea (EG-kor)	6
Economic Growth => Singapore (EG-sgp)	6
Economic Growth => Taiwan (EG-twn)	6
Economic Growth => Britain (EG-gbr)	6
Economic Growth => France (EG-fra)	3
Economic Growth => USA (EG-usa)	6
Economic Growth => Australia (EG-aus)	5

Source: author's calculation, 2018

Based on Granger causality test for Taiwan as shown in table 3, we find that the unidirectional causality or one-way causality exists from Bali's economic growth (EG) to the number of Taiwan tourist visits to Bali. This result supports the Economic Driven Tourism Growth Hypothesis (EDTGH) where it believes that a sound Bali's economic growth becomes the fundamental requirement in strengthening and expanding the international tourism industry for the Taiwan market.

Table 3: The results of Granger causality test

Hypotheses	**F-stat**	**prob.**	**Conclusion**
Economic Growth (EG) => Taiwan (twn)	4.60621	0.0014	(EG) => (twn)
Taiwan (twn) => Economic Growth (EG)	0.85495	0.5366	EDTGH

Source: author's calculation, 2018
Notes: => means unidirectional causality; <=> means bidirectional causality; - means no causality; TLGH=Tourism-Led Growth Hypothesis; EDTGH=Economic Driven Tourism Growth Hypothesis

As can be seen in Table 4, only 1 case (Singapore) out of 9 cases corroborates the Tourism-Led Growth Hypothesis (TLGH). Meanwhile, 2 cases (China and Japan) advocate the bidirectional causality hypothesis (BCH) and 7 cases (Taiwan, Malaysia, South Korea, Britain, France, USA, and Australia) follow the Economic Driven Tourism Growth Hypothesis (EDTGH). It brings to a conclusion that EDTGH is a hypothesis that tends to describe the

reality of the relationship between international tourism and economic growth in the province of Bali.

Table 4: The results of Toda-Yamamoto causality test

Hypotheses	**chi-sq.**	**prob.**	**Conclusions**
Economic Growth (EG) => China (chn)	25.2191	0.0003	(EG) <=> (chn)
China (chn) => Economic Growth (EG)	13.8944	0.0308	BCH
Economic Growth (EG) => Japan (jpn)	26.3105	0.0002	(EG) <=> (jpn)
Japan (jpn) => Economic Growth (EG)	13.8697	0.0311	BCH
Economic Growth (EG) => Malaysia (mys)	14.0576	0.0290	(EG) => (mys)
Malaysia (mys) => Economic Growth (EG)	4.56284	0.6010	EDTGH
Economic Growth (EG) => South Korea (kor)	12.9799	0.0434	(EG) => (kor)
South Korea (kor) => Economic Growth (EG)	1.57216	0.9546	EDTGH
Economic Growth (EG) => Singapore (sgp)	4.55895	0.6015	(sgp) => (EG)
Singapore (sgp) => Economic Growth (EG)	11.7148	0.0686	TLGH
Economic Growth (EG) => Britain (gbr)	40.6496	0.0000	(EG) => (gbr)
Britain (gbr) => Economic Growth (EG)	4.69705	0.5832	EDTGH

Economic Growth (EG) => France (fra)	21.6391	0.0001	(EG) => (fra)
France (fra) => Economic Growth (EG)	2.20092	0.5318	EDTGH
Economic Growth (EG) => USA (usa)	11.0354	0.0873	(EG) => (usa)
USA (usa) => Economic Growth (EG)	9.4433	0.1501	EDTGH
Economic Growth (EG) => Australia (aus)	13.5685	0.0186	(EG) => (aus)
Australia (aus) => Economic Growth (EG)	8.45905	0.1327	EDTGH

Source: author's calculation, 2018
Notes: => means unidirectional causality; <=> means bidirectional causality; - means no causality; TLGH=Tourism-Led Growth Hypothesis; EDTGH=Economic Driven Tourism Growth Hypothesis; BCH=Bidirectional Causality Hypothesis

In particular, TLGH only appears on the market for tourists from Singapore. Meanwhile, Bali's international tourism for 7 main markets has proven to rely on and depend on the ability of local government efforts in realizing a sound economic growth (supporting EDTGH). Adequate local economic growth must precede the development of the international tourism sector in Bali. In this case, basic resources (especially nature) have proven to be insufficiently capable of sustaining the development of a tourism industry, so that more solid local economic growth is needed to facilitate the development of tourism industry.

In other words, the development and improvement of the international tourism sector in Bali Island is believed to only be successful if supported first by strengthening efforts in increasing local economic growth, which in turn gives a positive effect on improving tourist comfort in carrying out tourism activities. Based on the data, Bali's economic growth has roughly accommodated several increases in the tourism sector, e.g. it is seen that the number of star hotels in 2017 increased to 551 hotels (in 2016 there were still around 423 hotels) or increased by around 23.2% during 2016-2017. In the same period, the number of restaurants in Bali also increased by 1.5% (from 2217 restaurants in 2016 to 2251 in 2017).

Table 5: The average length of stay (in day) and tourist expenditures (in US$) in Bali Island: Based on their nationality, 2016

Nationality	**Average Length Of Stay (Day)**	**Average Expenditure Per Day ($)**
France (fra)	11.42	119.49
USA (usa)	10.29	128.86
Britain (gbr)	9.85	140.02
Australia (aus)	8.79	169.09
China (chn)	6.29	163.71
Japan (jpn)	6.26	173.59
Singapore (sgp)	5.83	188.41
South Korea (kor)	5.78	167.20
Taiwan (twn)	5.77	110.95
Malaysia (mys)	5.54	159.87

Source: BPS-Statistics Indonesia, 2017

Referring to Table 5, it is suspected that one of the causes of Singapore's market dominance in contributing positively to Bali's economic growth is due to the dominance of the average expenditure of Singapore tourists in Bali's economic activities during tourist visits. It can be said that the Singapore market pays more attention to the uniqueness of Bali's tourist destinations and potential compared to the conditions of the readiness of tourism facilities and infrastructure in making visits to Bali (supporting the TLGH). This circumstance is also supported by the fact that the average length of stay of Singapore tourists is the fastest among the main markets (on average around 5 days). Singapore tourists generally realize that their visit must focus on the uniqueness of Bali tourism (culture and nature) and not only on the demands of tourism supporting facilities.

This is somewhat different from the findings obtained from the majority of Bali's main tourism markets, namely Britain, France, USA, Australia, Taiwan, South Korea and Malaysia, where these markets are still very considerate of the prerequisites for the results of Bali's economic development that is able to support their comfort during tourist activities (supporting the EDTGH). It is seen that tourists from France, USA, Britain and Australia are tourists who dominate the length of stay during tourism activities in Bali (see Table 5). Due to these tourists come from countries that are relatively far away, they will tend to have a longer stay and at the same time have higher standards for tourist facilities that guarantee their comfort while in Bali.

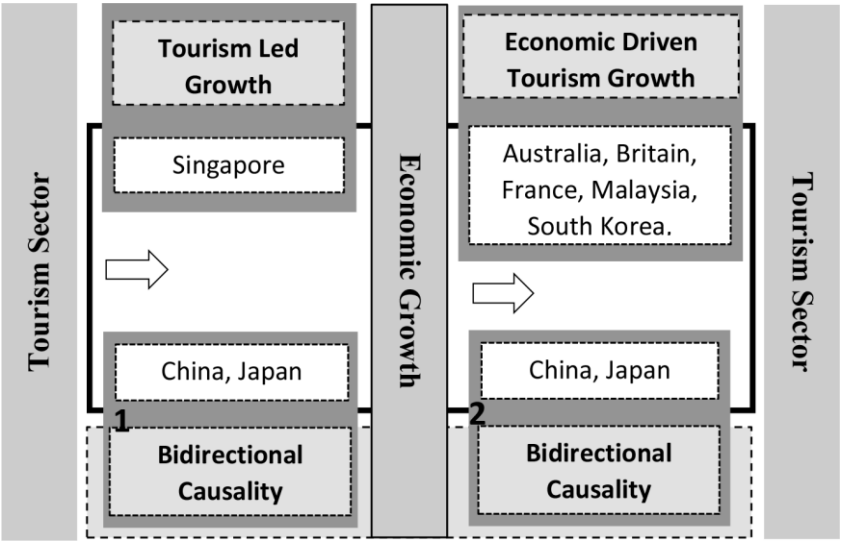

Figure 1. The flowchart of results (TLGH, EDTGH and BCH)
Source: Author's own elaboration
Notes: TLGH=Tourism-Led Growth Hypothesis; EDTGH=Economic Driven Tourism
Growth Hypothesis; BCH=Bidirectional Causality Hypothesis

The two cases shown by China and Japan prove that the two main markets for Bali tourism originating from East Asia turned out to support the bidirectional causality (BCH) hypothesis. It indicates that the management of the China and Japan markets by the local government of Bali can be done with a focus on the simultaneous development of economic growth and the tourism industry in Bali, where these conditions will benefit the two main factors in question. The China and Japan markets are very attractive markets for the Bali tourism industry, considering that these two countries are among the

highest contributors of the average expenditure per day for Bali tourism. Although the length of stays of China and Japan tourists are still slightly below Australian tourists, with a strong purchasing power, it is believed that the China and Japan markets can still be developed more intensively in the future (Sazesh & Siadat, 2018).

5. CONCLUSIONS

This paper examines the causality relationship between international tourism and economic growth in Bali Island, Indonesia. Using Granger and Toda-Yamamoto causality techniques, the present study utilizes quarterly time series data of 14 years (2004-2017) from ten (10) major disaggregated tourism markets of Bali tourism, i.e. Australia (aus), Japan (jpn), China (chn), Taiwan (twn), South Korea (kor), Britain (gbr), Malaysia (mys), France (fra), the United States (usa), and Singapore (sgp). The results suggest the presence of three hypotheses that are related to the causal nexus between international tourism and economic growth in Bali Island, i.e. Tourism Led Growth Hypotesis (TLGH) for Singapore market; Economic Driven Tourism Growth Hypothesis (EDTGH) for Taiwan, Malaysia, South Korea, Britain, France, USA, and Australia markets; and Bidirectional Causality Hypothesis for China and Japan markets.

If the government of Bali wants to use the potential of international tourism as the main driver of its economic growth, then the Singapore market is a market that deserves to be given priority over

other markets. After that, development priorities can be given to the Chinese and Japanese markets that support two-way causality. The seven other markets will be the next priority after the prerequisite for domestic economic growth is achieved and proven capable of supporting the readiness of the tourism sector in attracting tourist visits.

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