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Determinants of International Tourism Demand for the Philippines: An Augmented Gravity Model Approach

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DETERMINANTS OF INTERNATIONAL TOURISM DEMAND FOR THE PHILIPPINES: AN AUGMENTED GRAVITY MODEL APPROACH

Roperto S. Deluna Jr and Narae K. Jeon

Abstract

This study was conducted to investigate the determinants of international tourism demand for the Philippines. This study employed a double-log augmented form of gravity model estimated using the robust random effects model. Results revealed that tourist arrival in the Philippines are generally increasing from 2001 to 2012. Empirical estimation was conducted to determine factors affecting Philippine tourism demand. These factors include income, market size, and distance. Relative prices was also identified which includes cost of living and price of goods and services in the Philippines and other related tourism destination like Malaysia, Indonesia and Thailand. Supporting variables like direct flights, conflict, commonality in language and common colonizer between the Philippines and source of origin of the tourist was also examined. Furthermore, it also includes impact of calamity in the tourist home country and common membership to ASEAN.

Empirical results show that tourist inflow is positively and significantly affected by income of the origin country and is reduced by population and distance. Relative low prices of tourism in term of cost of living and prices of goods and services in the Philippines have no effect in attracting inbound tourist. Furthermore, international demand for Philippine tourism is not affected by relative prices of tourism in Malaysia, Indonesia and Thailand as the competing tourist destinations. Conflict and common colonizer between Philippines and country of origin are not significant determinants of international tourism demand. Among the variables, direct flights turned out to be the most significant factor that can contribute to the increase in tourism demand of the Philippines.

Keywords: Tourism, augmented gravity, panel data-random effects, tourism demand

Introduction

The Philippines is a sovereign island country in Southeast Asia situated in the western Pacific Ocean. It is composed of 7,107 islands with vast

features of tropical rainforests, mountains, beaches, coral reefs, and diverse range of flora and fauna. These generate tourism which becomes the major economic contributor in the Philippine economy. Tourism is an economic activity, which is the largest and dynamically developing sector in the country. Tourism generate demands from many different industries, gives market power to those who have been able to join different goods and services in a package and thus offer inclusive tours (IT) to potential consumers (Ledesma, *et al.*, 1999). According to the DOT (2011), tourism is one of the three largest industries in the Philippines. The tourism industry is mainly a consumer of inputs and producer of final goods, hence, its impact on the output is relatively higher. Also, its interdependence with other industries proves that other sectors do benefit from the tourism sector (Yu, 2012).

Based on the 2013 travel and tourism competitiveness index from world economic forum, the Philippines is the most improved country in the Asia Pacific region. The country ranked 17th regionally and 82nd overall, up by 12 places since 2012. Among the country's comparative strengths are its natural resources (44th), its price competitiveness (24th), and a very strong and improving prioritization of the Travel & Tourism industry (this indicator ranks 15th), as government spending on the sector (as a percentage of GDP) is now 1st in the world. This is also supported by and increasingly effective tourism marketing and branding campaigns around the world (Blanke, 2013).

The market is concentrated in the industrialized countries of Asia, and America. The numbers of tourist arrivals from Asia has increased from 56% in 2001 to 62.5% in 2011, an increase of 6.5% for the last 10 years. Asia remains the largest tourism market of the country. This is followed by countries in America (20.4%), Europe (10.7%), Oceania (6.2%), and Africa (0.1%). According to Department of Tourism (DOT), the tourist arrivals have increased from 3.1 million to 4.3 million. This has becomes a major industry to generate foreign revenue, investments, and exchange earnings. Tourism contributed on the average, 5.8% to GDP from 2000 to 2011. As measured by the share of tourism direct gross value added (TDGVA) to total gross domestic product (GDP).

In terms of employment, tourism contributed on the average, about 9.8 percent to total employment from 2001 to 2011. The percentage share of

tourism employment to total employment of the country is continuously increasing with around 10.25% share in 2011. Travel & Tourism (T&T) has continued to be a critical sector for economic development and for sustaining employment. A strong T&T sector contributes in many ways to the development of an economy (Blanke,2013).

Tourism has become one of the fastest-growing industries in the world economy (William, 1991), with nations, states and communities funding boards of tourism, to promote their locations and attract further investment. Relative to other forms of international trade, tourism has proved to be consistent and significant in its growth (Tse, 2001).

As mode of transportation was developing, it decreases cost of travelling. People can visit abroad and enjoy foreign country's landscape, ruins, customs, and culture among others. Through the popularization of tourism, the government recognized the importance of tourism in the economy (Korea Dictionary Research Publishing, 2010). During the recent decades, tourism has become an important sector in the Philippines as a growing source of foreign earning. Tourism industry is very important to the economy and is identified as one of the major sources of economic growth. Tourism revenues have grown to become the third largest industry after oil and automobile industries. For the low-income countries international tourism has become a major foreign exchange earner, according to the UNWORLD Tourism Organization (Dilanchiev, 2012).

During 1997 to 1998, Koreans, Taiwanese, and Japanese' tourist arrivals decreased rapidly. The Asian financial crisis of 1997-98 was one of the most dramatic economic events of recent times. These countries affected, which had enjoyed a period of stability and rising living standards, saw their currencies plummet in value and their economic plunged into slumps that threw many of their citizens back into poverty. The crisis also ushered in a period of heightened volatility in global markets (Boorman, *et al.*, 2000).This has impact to several markets and industries in the Philippines including tourism receipts.

For effective tourism management, it is essential for the destination country to measure its successes at any time and to determine the points (factors) where certain management interventions (marketing, development, etc.) can help to achieve or maintain this success (Papp

and Raffay, 2011). Specific determinants of Philippine tourism demand should be measured and identified for effective tourism management strategy. Therefore serious attention should be given in studying the factors that affect international tourist arrivals in the country.

In this paper, an augmented gravity model for tourism is used to identify factors that influence foreign tourist arrivals, especially emphasizing on the economic size, distance, population, direct flight, etc. In particular, this study highlights the effects of economic relations between the countries and their exchange rate. Also the study will estimate the elasticities of income, tourism price, and other tourism variables of tourism demand for the Philippines. The results of this study may be valuable for helping professionals and policy-makers in the decision making process, related to enhancing tourism industry in the country.

Objective of the Study

The overall objective of the study is to examine beyond the border factors affecting Philippines tourism industry. Specifically, the study aims to:

- a. present the trends of Philippines tourist arrivals,
- b. identify these determinants affecting Philippine tourism and
- c. to estimate elasticity of tourism demand in the Philippines.

METHODOLOGY

Conceptual Framework

Figure 1 shows the framework and variables included in this study. These include several factors affecting tourist arrivals in the Philippines. The subscript i refer to the Philippines and j is the country of origin at time t .

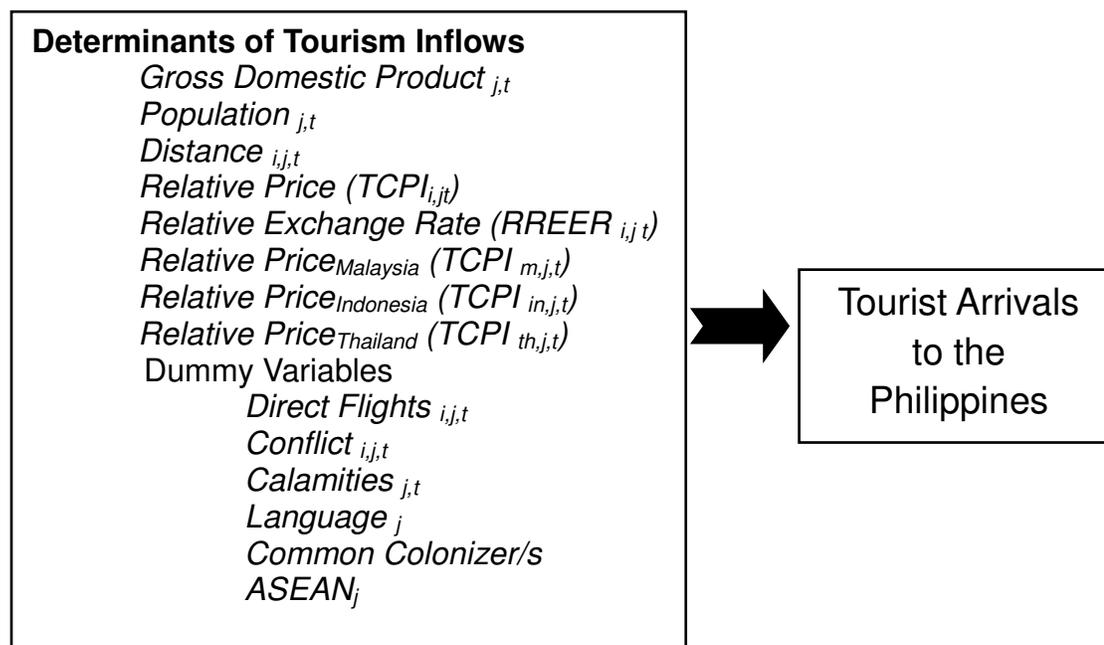


Figure 1. Determinants of International tourist arrivals to the Philippines

Variables of the Study

The variables presented in the conceptual framework are defined below:

Dependent Variable

The international tourism demand is often measured either in terms of the number of tourist arrivals, tourist expenditure, and number of tourist nights in the destination country (Ouerfelli, 2008). Data limitations constrain the representation of the dependent variable. In the case of this study, the available data have not permitted the construction of tourism receipts or number of tourist night's variables for each of the origin countries. An alternative way of measuring the volume of tourism is to use the number of tourists' arrivals to the Philippines from 24 countries that have available data to represent International tourism demand for Philippines.

Independent Variables

- a. **Income (GDP_{jt})**—proxied by Real Gross Domestic Product at time t in current US\$ of the country of origin.
- b. **Population (Pop_{jt})** country of origin at time t, as proxy for market size.
- c. **Bilateral Distance ($Dist_{ijt}$)** between Manila (destination) and capital cities of tourist home country measured in kilometers.
- d. **Relative Price of Tourism ($TCPI_{i,j,t}$)**, tourism prices were described as costs of living in the Philippines by the tourists from the origin countries. This price variable is proxied by consumer price indices to represent for the cost of tourism in destination (Philippines) relative to the cost of living in the origin country. Demand theory hypothesizes that the demand for international tourism is an inverse function of relative prices, i.e., the lower the cost of living in the destination relative to the origin country, the greater the tourism demand and vice versa. We therefore expect a negative sign for this variable. Tourism prices, which include the cost of goods and services purchased by tourists in the destination country, are measured by relative prices (Witt & Martin, 1987; Dritsakis & Gialitaki, 2001). The relative price variable TCPI is given by the indicative ratio of the consumer price indices (CPI) of the destination country to the origin countries.

$$TCPI_{i,j,t} = \left(\frac{CPI_{i,t}}{CPI_{j,t}} \right) \quad (1)$$

where: $CPI_{i,t}$ is the consumer price index in the Philippines in year t

$CPI_{j,t}$ is the consumer price index in the country of origin j, in year t

- e. **Relative Real Effective Exchange Rate ($RREER_{i,j,t}$)** rate between the Philippines and origin countries which measures the effective prices of goods and services in the Philippines relative to origin countries. The relative real exchange rate is given by:

$$RREER_{i,j,t} = \left(\frac{REER_{i,t}}{REER_{j,t}} \right) \quad (2)$$

where: $REER_{i,t}$ is the real effective exchange rate in Philippines, in year t.

$REER_{j,t}$ is the real effective exchange rate in origin country j in year t.

- f. **Relative Prices of Tourism in Competing Destination Countries** which are Malaysia ($TCPI_{m,j,t}$), Thailand ($TCPI_{th,j,t}$) and Indonesia ($TCPI_{in,j,t}$).

These are identified based on the similarity of tourism services and attractions to the tourism of the Philippines. Relative Prices of tourism in competing destinations was computed using equation 1 which used CPI of Malaysia, Thailand and Indonesia as numerator and CPI of the tourist home country as denominator to represent cost of living of the competitive destination country.

g. Dummy Variables were included to further explain factors of international tourism inflows to the Philippines. The following are as follows:

- **Direct Flights (DF_{ijt})** from the Philippines to the source of origin of the tourist and vice versa. This took the value of 1, when there is and 0, otherwise.
- **Conflict ($Conf_{ijt}$)** between the Philippines and the country of origin of the tourist. These could be conflict on trade, laws, labor, territorial and resources. This variable took the value of 1, when there is an existing conflict in a given year, and 0, otherwise.
- **Calamity/ies (Cal_{jt})** in the origin country of the tourist which could be man-made or natural calamities. This study limited counting that typhoon (cyclone, hurricane), earthquake and war. This took the value of 1, when there is and 0, otherwise.
- **Language ($lang_j$)** is very crucial in tourism. This variable took the value of 1, when the tourist country of origin can speak English up to as 3rd language, and 0, otherwise.
- **Common Colonizer (CC)** was included in the study to capture similarity in customs, history and traditions. When the tourist home country in any circumstances was under, the Hispanic, European, Japanese and Americans or any of the following in their history took the value of 1 and 0, otherwise.
- **ASEAN** membership as dummy variable to capture if this regional coalition of the Philippines has impact on increasing inflows of international tourist to the Philippines. It took a value of 1, when the country of origin is a member of ASEAN and 0 otherwise.

Data and Sources

The data of the study are secondary data to taken from different sources.

Number of international tourist arrival was taken from Philippines Statistical Yearbook from National Statistical Coordination Board (NSCB), and from the Department of Tourism (DOT). The list of countries to include in the study is presented in Table 1. Data on Gross Domestic product as proxy to income and population as proxy for market size, real effective exchange rates and consumer price indexes was taken from the World Bank (<http://data.worldbank.org/indicator/>).

Table 1. List of countries included as sample of study.

Korea	Australia	Malaysia	Thailand	Switzerland	Norway
USA	Singapore	UK	Indonesia	Netherlands	Italy
Japan	Canada	Germany	France	Sweden	Spain
China	Hong Kong	India	Saudi Arabia	Vietnam	New Zealand

Data on bilateral distance measured in kilometers, language and common colonizer was secured from the *Centre d'Etudes Prospectives et d'Informations Internationales (CEPII)* which was developed by Mayer and Zignago (2005).

Statistical Framework

The vast majority of the empirical papers on international tourism in the literature are divided into two main types. The first consists of papers that use modern time series and co-integration techniques in an attempt to model and forecast the dependent variable, between one or several pairs of countries. The second type includes papers that estimate the determinants of international tourism flows using classical multivariate regression framework (Halicioğlu, 2004; Eita and Jordaan, 2007). The gravity model approach used in this paper can be counted in the second class.

Gravity Model Approach on Tourism Demand

The gravity model belongs to the class of empirical models concerned with the determinants of interactions. In its most general formulation, it

explains a flow (of goods, capital, people etc.) from an area to another area as a function of characteristics of the origin, characteristics of the destination and some separation measurement. It was originally proposed by Newton's gravitational law. Tinbergen (1962) first used the gravity model in analyzing flows of international trade. The basic assumption of gravity model states that there is positive relation between bilateral trade and GDP, while bilateral trade and distance are inversely related. The basic formulation model is express as follow:

$$\mathbf{Trade}_{ij} = A \frac{(GDP_i.GDP_j)}{Distance_{ij}} \quad (3)$$

For the econometric purposes, the equation (3) can be changed into a linear form equation (4) by employing logarithm:

$$\mathbf{Log (Trade}_{ij}) = A + \beta_1 \log(GDP_i.GDP_j) - \beta_2 \log(Distance_{ij}) + \varepsilon_{ij} \quad (4)$$

In estimating tourism demand, Rodrigue (2004) has used the Tinbergen Gravity Model and suit the tourism variables; some adjustment has been made with the model. The model proposed by Rodrigue (2004) is:

$$TD_{ij} = K \frac{(m_i.m_j)}{D_{ij}} \quad (5)$$

where: TD_{ij} stands for tourist arrival from country j to destination country i,
 K is a constant term,
 m_j is a factor to generate movement of international tourism,
 m_i is a factors to attract movement of international tourism, and
 D_{ij} is the distance between origin country j and destination country i.

This tourism demand gravity model in equation 5 can be transform into linear equation the same way equation 3 was transformed in equation 4. This basic model of gravity can be expanded to accommodate other variables that generate and attract movement of international tourism which is called an augmented gravity model.

Empirical Application

Recently, in the international tourism empirical literature, Gravity model

has been widely used to investigate the role of tourism. To achieve this objective, demand factors of international tourism followed an augmented form of Gravity Model. The study used 24 sample countries from 2001 to 2012. The augmented gravity model tourism demand function is presented in equation 6.

$$TD_{ijt} = f(GDP_{jt}, Pop_{jt}, Dist_{ijt}, TCPI_{ijt}, RREER_{ijt}, TCPI_{mjt}, TCPI_{inj}, TCPI_{thjt}, DF_{ijt}, Conf_{ijt}, Cal_{jt}, lang_j, CC, ASEAN) \quad (6)$$

Transforming equation 6 into a double log form eased the estimation and interpretation of the estimated coefficients. The estimated coefficients of the model are interpreted directly as tourism demand elasticities. The double-log for the augmented gravity model of tourism demand is presented in equation 7.

$$\begin{aligned} \ln TD_{ijt} = & \beta_0 + \beta_1 \ln GDP_{jt} + \beta_2 \ln Pop_{jt} - \beta_3 \ln Dist_{ijt} + \beta_4 \ln TCPI_{ijt} \\ & + \beta_5 \ln RREER_{ijt} + \beta_6 \ln TCPI_{mjt} + \beta_7 \ln TCPI_{inj} + \beta_8 \ln TCPI_{thjt} \\ & + D_1 DF_{ijt} + D_2 Conf_{ijt} + D_3 Cal_{jt} + D_4 lang_j + D_5 CC + D_6 ASEAN \\ & + \varepsilon_{ijt} \end{aligned} \quad (7)$$

Estimation Process

Standard gravity models generally use cross-section data for a particular time period, such as one year, or over averaged data. However, panel data models might provide additional insights, capturing the relevant relationships over time and avoiding the risk of choosing an unrepresentative year. Moreover, panels allow monitoring unobservable individual effects between trading partners. Therefore, in order to investigate the impact of gravitational factors on the tourist inflows, the study employed the panel gravity model framework.

Panel data models have three basic approaches: They are pooled and estimated by Ordinary Least Squares (OLS) or known as POLS. The second approach is they are assumed to be motivated by fixed effects model (FEM) and the third approach is the random effects model (REM). Each approach has its own advantages and disadvantages. As Antonucci and Manzocchi (2005) pointed out REM would be more appropriate when

estimating flows between a randomly drawn samples of trading partners from larger population. On the other hand, FEM would be a better choice than the REM when one is interested in estimating flows between a predetermined selection of countries (Egger, 2000, 2005). Since the sample of this study only contains tourist inflows of the Philippines from different parts of the world based on availability of data, the REM might be most appropriate specification.

To formally check the correct specification (REM or FEM) the study carried out a Hausman test. The null hypothesis is that the preferred model is random effects vs. the alternative the fixed effects. It basically tests whether the unique errors (ui) are correlated with the regressors, the null hypothesis is they are not (Green, 2008). To further test for random effects, Breusch-Pagan Lagrange multiplier (LM) was employed. The LM test identified appropriate model between a random effects regression (REM) and a simple POLS regression. The null hypothesis in the LM test is that variances across entities are zero. This is, no significant difference across units (i.e. no panel effect). If the test failed to reject the null hypothesis, then random effect is the most appropriate. Data preparation of study used Microsoft Excel 2007, while estimation of the model used the econometric package *Stata Version 10*.

RESULTS AND DISCUSSIONS

Trend of total tourist arrivals to the Philippines is increasing from 2001 to 2012 with a mild dip in 2003 and 2009 as impact of international crisis. The decreasing tourist arrivals in the international economy have been magnified by uncertainties in the US economy. Beyond 2009 it is observed that arrivals increased rapidly than before.

The major markets of Philippine tourism are shown in table 2. It shows that 29% of the total international tourist arrivals in the country are South Koreans, followed by USA, Japan, China, Australia and Singapore with 16%, 12%, 7%, 6%, 4% and 3.5%, respectively. There are 6 Asian countries among the top 10 countries of tourist arrivals accounted for 58.33% in 2012.

Figure 2 presents the relationship of international tourist arrivals and distance between the Philippines and the home country of the tourist. The distance is divided into 4 groups with 5 thousand kilometers interval. The

size of the bubbles represents the volume of tourist arrivals, the larger the bubble the higher the number of arrivals to the country. It revealed that majority (62%) of the tourist arrivals to the Philippines are concentrated from countries within the 5 thousand kilometers linear distance from the Philippines. This is consistent with the concept of the gravity model which further implies more tourist flow as the distance between the origin and destination is minimal. This is usually explained in literatures as the difference in travel cost. Countries with short distance imply lower transportation cost of traveling, thus enhancing inbound tourist, *ceteris paribus*. Generally, market shares of group countries in 4 ranges of distance diminish as distance increases. The next distance ranges from 5 to 10 thousand kilometers distance accounts for around 10% of market share, while 28% was accounted to countries within the 10 to 15 thousand kilometers. This increased in market share in this distance range was attributed to the market share of USA which is around 16%. It is notable that Philippines and USA has a very tight economic relationship and security partnership beyond distance. The last distance range accounts for a very small market share of 0.1%, these are countries in Latin America, which relating have a large range from the Philippine.

Table 2. Market share of major international tourist arrivals to Philippines, 2012.

From	2012 TA	Market Share (%)	From	2012 TA	Market Share (%)
S. Korea	1,031,155	29.0%	Thailand	40,987	1.10%
USA	652,626	15.9%	Indonesia	36,627	1.0%
Japan	412,474	11.60%	France	33,709	0.90%
China	250,883	7.0%	Saudi Arabia	30,040	0.80%
Australia	191,150	5.40%	Switzerland	23,557	0.66%
Singapore	148,215	4.20%	Netherlands	22,195	0.62%
Canada	123,699	3.5%	Sweden	21,807	0.61%
Hong Kong	118,666	3.32%	Vietnam	20,817	0.58%
Malaysia	114,513	3.21%	Norway	19,572	0.55%
UK	113,282	3.18%	Italy	16,740	0.47%
Germany	67,023	1.90%	Spain	15,895	0.45%
India	46,395	1.30%	New Zealand	14,100	0.39%

Source: National Statistical Coordination Board (NSCB)

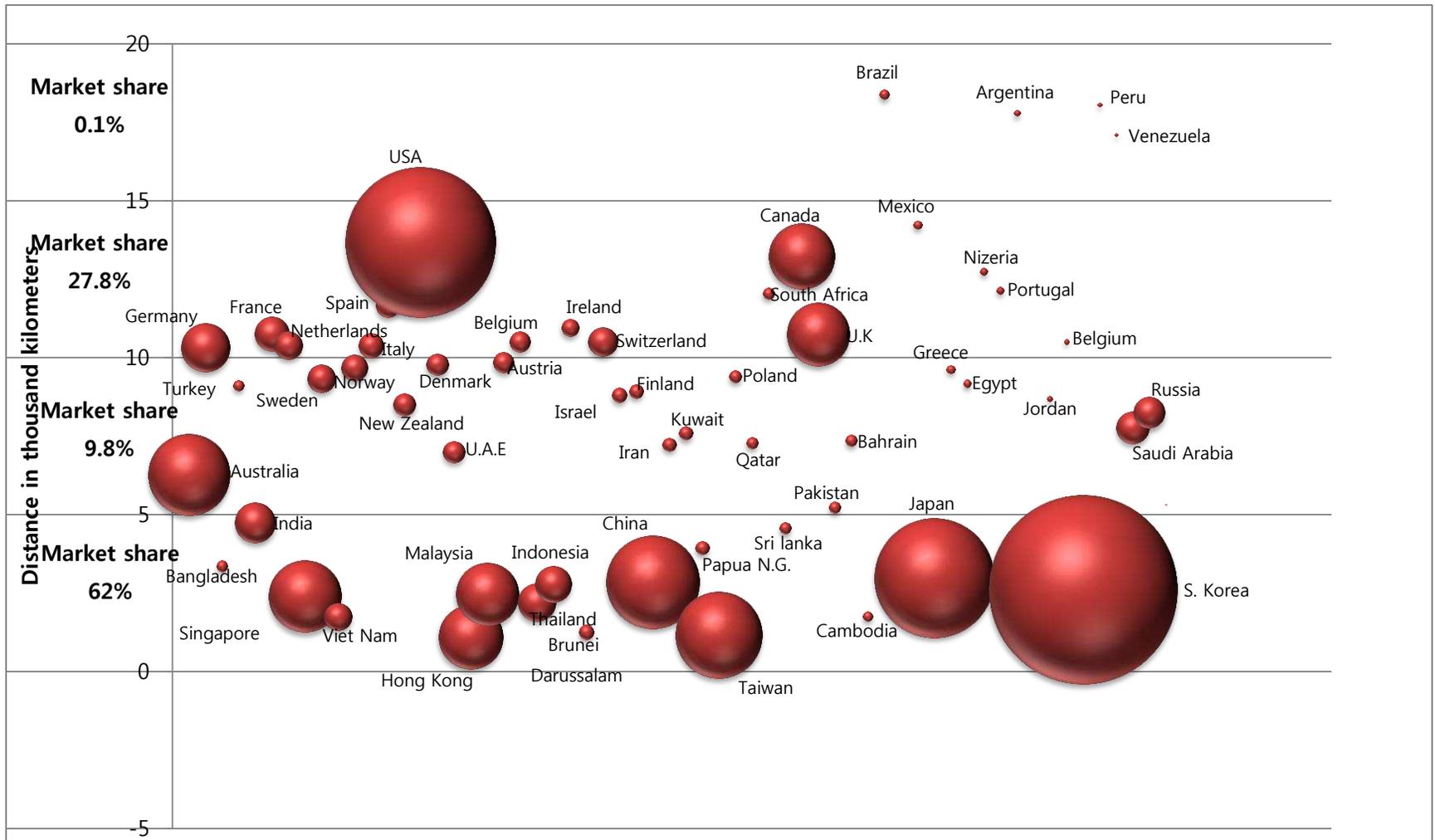


Figure 2. Distance and market share of international countries to Philippines in 2012.
 Source: National Statistical Coordination Board (NSCB)

To formally identify factors determining international tourism demand for the Philippines, an empirical analysis was conducted. As earlier discussed, this study employed augmented form of gravity model using panel data. To identify the proper specification of the panel data gravity model, several tests were conducted. The Hausman test was used to identify the appropriate specification of the model between fixed or random effects models. Result of the test failed to reject the null hypothesis, therefore, random effects model is preferred than the fixed effects model. This study also considered the Breusch-Pagan Lagrange multiplier (LM) to decide between a random effects regression and a simple OLS regression. Result of the test rejected the null hypothesis that variances across cross sections is zero. Therefore, there is a panel effect which suggests that random effects model is appropriate in the estimation compared to OLS. Finally, to control for heteroskedasticity robust random effects model was utilized in the estimation of coefficients of the determinants of international tourism demand for the Philippines.

Results of the robust REM are presented in Table 3. Results revealed that Philippine tourism demand is significantly and positively affected by income of its tourism markets. That is, a percent increase in income across time and between countries will increase tourism demand by 0.41%. This is consistent with the result of Munóz and Amaral (2000) which indicated that as the country's income increases, more of its residents can afford to visit other countries, and therefore tourist arrivals are a positive function of income or directly related to income.

Population and distance turned out significantly reducing tourist inbound to the Philippines. On the average between countries and time, an increase in population will decrease tourism arrivals by 0.19%, while a percentage increase in distance will decrease also decrease tourist arrivals by 0.38%. These results are consistent with the results of Karagöz (2008), Hanafiah and Harun (2010), and Kosnan, et al. (2012), among others.

Relative prices of Philippine tourism and cost of living in the Philippines measured in terms of exchange rate and consumer price index turns out

insignificant. This means that the relative low prices of goods and services, cost of living and tourism packages in the Philippines has no effect on attracting/pulling tourist inbound. Furthermore, results revealed that relative prices related to tourism in Malaysia, Indonesia and Thailand has no effect on the international tourism demand of the Philippines.

Table 3. The robust random effect estimated coefficients of international tourism demand of the Philippines, 2000-2012.

Variable	Estimated Coefficient	Robust Std. Error	P> z
GDP	0.4071*	0.0560	0.000
Population	-0.1873*	0.0372	0.000
Distance	-0.3783*	0.0962	0.000
TCPI	3.2447 ^{ns}	2.0987	0.122
Exchange rate	0.0134 ^{ns}	0.0207	0.517
TCPI of Malaysia	-3.3000 ^{ns}	4.2668	0.439
TCPI of Indonesia	-0.4808 ^{ns}	0.9756	0.622
TCPI of Thailand	1.6893 ^{ns}	4.6950	0.719
Direct Flight	1.5797*	0.1255	0.000
Conflict	-0.0516 ^{ns}	0.1126	0.647
Calamity	0.2766*	0.1045	0.008
Language	0.7282*	0.1157	0.000
Common Colonizer	-0.1111 ^{ns}	0.0955	0.245
ASEAN	-0.9638*	0.1427	0.000
Constant	2.4470 ^{ns}	1.5208	0.108
R ² : Overall	= 0.7485		
Within	= 0.7335		
Between	= 0.9907		

*significant at 5%

^{ns}not significant

The existence of direct flights from the origin country to the Philippines is highly significant in increasing tourism inbound. That is, direct flights from origin to destinations will increase tourism inbound by 1.58%. Language also played an important role in Philippine tourism, commonality in English language between the Philippines and the tourist increases tourist

inbound by 0.73%. Results also revealed that calamity either natural or man-made in the country of origin increase tourism of the country. This might be due to the fact that most of the tourist inflows to the country are from developed economies which have the capacity to move in case of calamity. Common membership to ASEAN between the host and country of origin reduces tourist inflow. This might reflect commonality of tourism features in the ASEAN countries. Most of the tourist inflow of the Philippines is mainly within the 5 thousand kilometers linear distance, however, mostly from East Asian countries like Japan and South Korea. Conflict between the Philippines and the home country of the tourist and commonality of culture and traditions represented by common colonizer are not significant indicators of tourism inbound.

The goodness of fit shows that 75% of the variability of the overall tourist arrival panel data can be explained/predicted by the regressors included in the model. Moreover, 99% and 73% variability can be predicted by the regressors of the model if fitted between and within the model respectively. Result of the F statistic test shows that the coefficients on the regressors of the model are all jointly zero, which means that the augmented gravity model of this study is significant in determining factors of international tourism demand for the Philippines.

Summary and Conclusion

Tourism is one of the fastest growing industries in the world (William, 1991) and has proved to be consistent and significant in its growth (Fletcher, 1997). This industry became a growing source of foreign earnings and one of the sources of growth in the Philippines. Therefore, this study was conducted to understand external factors that affect tourism demand of the country. This is important component for planning and employing effective tourism management, interventions and strategies to enhance Philippine tourism industry.

In this paper, an augmented panel gravity model for tourism was used to identify factors that influence foreign tourist arrivals. These factors include income, market size, and distance. Relative prices was also identified which includes cost of living and price of goods and services in the Philippines. Other related tourism destination was also identified which are the relative prices of tourism in Malaysia, Indonesia and Thailand. Supporting variables like direct flights, conflict, commonality in language

and colonizer between the Philippines and source of origin of the tourist was also examined. Furthermore, it also includes impact of calamity in the tourist home country and common membership to ASEAN. The study estimated the elasticities of income, tourism price, and other tourism variables of tourism demand for Philippines.

Results revealed that tourist arrival in the Philippines is generally increasing from 2001 to 2012. Furthermore, this increase is attributed to increasing arrivals from countries in East Asia, particularly South Korea, Japan and China. USA, Australia, Canada and Singapore also recorded notable share from the total arrivals. In terms of distance, 62% of the market share was accounted to arrivals from countries within the 5 thousand kilometers linear distance. However, common memberships to ASEAN which is within the 5 thousand kilometers distance turns out significantly reducing tourist inbound which might be explained by commonality/substitutability of tourism features.

Empirical results show that tourist inflow is positively and significantly affected by income of the origin country and reduces by population and distance. Relative low prices of tourism in term of cost of living and prices of goods and services in the Philippines have no effect in attracting inbound tourist. Furthermore, international demand for Philippine tourism is not affected by relative prices of tourism in Malaysia, Indonesia and Thailand as the competing tourist destinations. Conflict and common colonizer between Philippines and country of origin are not significant determinants of international tourism demand. Among the variables, direct flights turn out to be the most significant factors that increase tourism demand of the Philippines.

Recommendations

Based from the results of the study, the following are the recommended:

- a. The Philippines should further promote Philippine tourism abroad, within the "It's more fun in the Philippines", as the finding of the study suggests that prices are not significant indicators of tourism demand. Therefore, it is hypothesized that it might be the unique features of Philippine tourism that matters most on tourism demand.

- b. This promotion should focus on countries with relatively high income like countries in East Asia, UK, Canada, among others.
- c. More direct flights should be established to countries that posed potential demand for the Philippine tourism.
- d. Furthermore, the Philippines should enhance diversity of languages through trainings and inclusion of major languages in the curriculum of tourism related courses.

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