

Economic and Environmental Parameters of Tourism in the Philippines

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Abstract

Both national and transnational parameters of tourism need to be placed in proper perspectives. This paper surveys past economic and environmental parameters, presents updated empirical findings and conveys the relation of tourism income to the economic factors: gross domestic products, consumer price index, inflation rates, exchange rates and employment rate with emphasis on the effect of weather disturbances to the number of tourist arrival. The strategic interactions among these indicators have to be considered by the government in the formulation and implementation of a broad range of national strategic policy measures towards the development of country's competitiveness by optimizing the gains of tourism which plays an important role in identifying novel policy recommendations and pattern insights. This study seeks to analyze the parameters of tourism as one of the major drivers of economic growth.

Keywords: Tourism, Economic and Environmental Parameters, Philippines

1.0 Introduction

National tourism is a latent contributing factor for strategic economic growth. It is a vital component of the national economy. According to the Asian Development Bank of the Philippines (2013) fixed income market is the second fastest growing in East Asia being only on the top position by Singapore. Contributors to economic growth include inflation, gross domestic product, employment rate, US Dollar exchange rate, relative consumer price index, and frequency of seasonal challenges. This study determines how tourism arrival affects the economy of the country.

Whanhill (2011) states that tourism has a rapid growth in the industry which influences pervade many different sectors of the economy. Tourism directly contributes to the economic prosperity

of the country. The growth of international tourism during the past 30 years had impacts on employment, gross domestic product, foreign exchange earnings, balance of payments and the global economy in general (Mchone, 2000). Theories relating to economic indices include the Tourism-led Economic Growth Hypothesis (TLGH), and Export-led Growth Hypothesis. TLGH, or The Tourism-led Economic Growth Hypothesis, postulates that tourism expansion leads to economic development (Risso & Brida, 2008). The Export-led Growth hypothesis argues that economic growth of a country, not only is a function of labor, capital, export and other factors in that country but also can be affected by the number of tourist entering that country (Cortes & Pulira, 2006). Export-led Growth Hypothesis simply

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signifies that, tourists are considered "export products" that consume the goods of the country visited. Johansen-Juselius co-integration analysis and the Granger causality test were used by Vanegas and Croes (2007). The study investigated the relationship between the tourism industry and gross domestic product during 1980-2005 in Nicaragua. It was concluded that a long-run steady relationship between gross domestic product and tourism were contributory factors in economic growth. Whereas, Brida, Carrera, & Risso (2008), made use of the Johansen-Juselius econometrics method, the Granger causality test and impulse response analysis of shocks in order to investigate the long-run effect of the tourism industry on economic growth in Mexico and concluded that a shock in tourism spending has produced a short run as well as, a long-run positive effect on economic growth. According to Kim (1988) tourism demand and all types of travel can be measured in four categories: (i) a doer criterion: such as the number of tourist arrivals, the number of tourist visits and the visit rate; (ii) a pecuniary criterion: for example the level of tourist expenditure (receipts) and share of expenditure (receipts) in income; (iii) a time-consumed criterion: such as tourist-days, tourist-nights; and (iv) a distance-travelled criterion: for instance, the distance travelled in miles or kilometers. In South Korea, Lee and Kwon (2010) argue that the economic impact of tourism will be far greater if the secondary (indirect) impact in terms of output, personal income employment, value added tax and imports were also considered. Tooman (2009) suggests that when the production of goods and services increases the potential for profit, savings and further investment are enhanced, and GDP growth is boosted. Qiu and Zhang (1995) attempted to make an empirical comparison between tourist arrivals and tourist expenditure in tourism demand analysis, but their focus was on the choice of proper functional form (linear

model). More importantly, this study made use of the economic growth model, called Conventional Neoclassical Growth model, which incorporates tourism as one of the sources of growth (Fayissa & Nsiah, 2007). An extensive research has been undertaken to understand the economic, social, environmental impacts of tourism. The first of these comprises studies with a business focus that trace industry trends, such as occupancy rates, number of tourist-arrival and tourist expenditures. The second research approach comprises studies of residents' attitudes towards the consequences of tourism development (Boniface, et.al, 2004). Tourist arrivals in the world originated in or around Asia since 1989 (Wang, 1989). In Asian Travel Data Center (2010), two-thirds of the international tourist arrivals in East Asia originated in Asia itself from Malaysia, Thailand, Japan, Philippines, South Korea, China and Hong Kong.

This paper examines the economic and environmental parameters of tourism in the Philippines in order to achieve a better understanding of how tourism influx impacts the relative economic indicators as important additional information for the policy makers of the government in crafting a broad range of national strategic policy measures whose economic parameters are more responsive to this. This will enable the policy maker to analyze effectively the economic trends in relation to the growth of tourist arrivals in the country in mitigating consumer price indices and employment rate.

There is no study yet that analyzes the existing phenomenon above that explains the economic growth of Philippines in terms of the parameters of tourism so that an effective policy measures can be formulated. This is very important because the different results will yield to better growth of the economy with respect to the different findings to be carried out. Moreover, understanding the details and flows of each variable towards economic

growth and tourism influx in the country give a broader view of Filipino citizens to foster more the growing tourism industry.

2.0 Objectives

This study is bent towards promulgating a broad range of national strategic policy measures towards enhancing relative competitiveness and initiative to optimize gains in tourism. The goals of developing the tourism industry in a country are maximizing selected positive impacts and identify the trends of gain annually to boom the economic growth. First, it is essential to identify and understand the possible impacts. Tourism researchers have identified a large number of impacts using the enumerated variables. Second, clustering the variables show the types of impacts towards the developing tourism industry and economy. Analyzing those impacts to the economic trends is related to the growth of tourist arrival in the country with positive effects on income that government policy may bring about in the adequacy of services in the promotion of tourist activity. Through this study, researchers would give greater path towards the increase of employment opportunities; increase the standards of living of people due to the growing economy and the impact of gross domestic product, consumer price index, inflation rate, exchange rate to tourism.

3.0 Design and Methods

This study used the multivariate clustering observations in data mining as an approach in analyzing the gathered data from online databases. Elastic analysis method using log linear model discriminates the relationship among the variables. Moreover, regression analysis was utilized to estimate the regression model of the data and to determine the extent of influence of each variable to tourism influx.

Gross domestic product is the gross national

market value of all officially recognized products in the country in a given period of time. It is measured through the government consumption and spending, investment, and net export. Cognizant to Gross Domestic products is the employment it sustains as employment rate is measured by the number of citizens employed in ratio to a given population. Dependence among inflation rate, exchange rate and consumer price index as economic parameters were measured respectively. Inflation rate is the increase of prices in accordance to a given price index. The Peso-US Dollar exchange rate refers to the value of the Philippine Peso currency in ratio to the US Dollar. Consumer price index (CPI) refers to the prices of goods and services that a country consumes. The average CPI per year from 1995 to 2011 were tabulated and clustered. Likewise, tropical depression has direct and immediate implication of tourism influx as it appropriately response to its arrivals. Tropical depression frequency refers to the number of weather disturbances in a country. The mentioned factors above are parameters identified by the researchers annually from 1995 to 2011 in identifying the trends of these factors to the recent tourism development in the country. The yearly average indices of each factor were noted as the data and used for further analysis.

Data gathered were processed and analyzed using cluster observation to see patterns and/or trends of variations of the parameters. Data sets were clustered into three groups.

4.0 Results and Discussion

This section presents the actual results and findings based on multivariate cluster observations.

As shown in Table 1, cluster 3 presents the highest tourist arrival frequency and gross domestic product which results to the lowest inflation rate and exchange rate from 1995 to 2011 as the base year of the findings. Furthermore, the same factors

Table 1. Economic Growth Parameters

Indicator	Cluster 1	Cluster 2	Cluster 3
Gross Domestic Product (GDP)	8.614308E+10	1.637657E+11	2.121715E+11
Employment Rate (EmR)	59.0833	59.1333	59.7000
Inflation Rate (IR)	5.5135	5.0966	4.2633
Exchange Rate (ExR)	0.0225	0.0217	0.0193
Consumer Price Index (CPI)	75.3858	110.1000	123.2850
Tropical Depression Frequency (TDF)	17.4167	18.667	15.0000
Tourist Frequency (TF)	2144833.3333	3082666.6667	3718727.0000

*Note: The E+10 and E+11 in GDP indicates the exponent of the value

connote the highest consumer price index and also the highest employment rate. Meanwhile, tropical disturbances must also be taken into consideration since these weather challenges affect the tourist arrival count.

Figures 1 to 6 below show the graphical representation between the number of tourist arrival and each of the factors of the country. The elasticity of the curve is solved to identify the level of responsiveness of one variable to the tourist arrival in the country. The marginal effect of tourism income on each factor is shown below the figures.

Figure 1 shows the curve of gross domestic product (GDP) and tourist arrival that is highly bendable. The absolute value of the elasticity coefficient is 1.0881 which is greater than the critical value of 1. Hence, the ratio of elasticity of the two variables is elastic. This means that the GDP is sensitive to change in the annual number of tourist arrival. In other words, the national economy will be adversely affected if the tourism industry failed to perform in any given year.

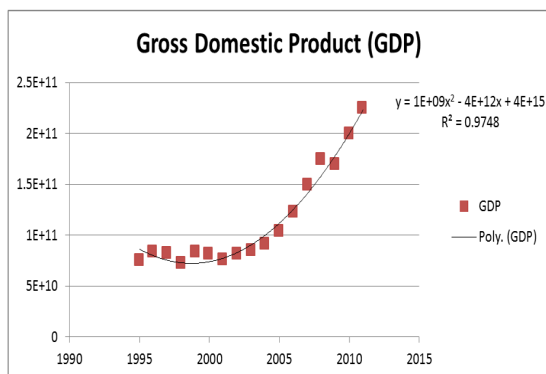


Figure 1. GDP - Tourist Arrival Relationship from 1995-2011 at 5 year interval

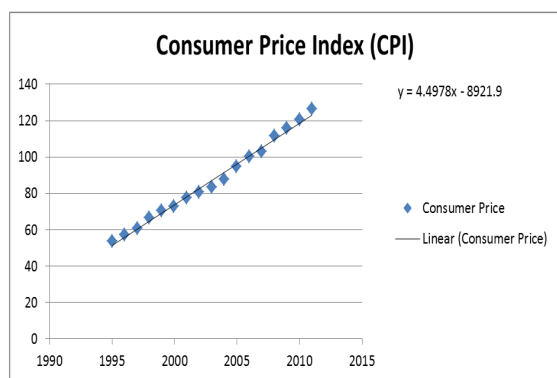


Figure 2. Consumer Price Index – Tourist Arrival Relationship

Based on Figure 2, the sensitivity of consumer price index (CPI) to tourist arrival is relatively elastic. Using the log linear model of $y = 4.49x - 8921$, the

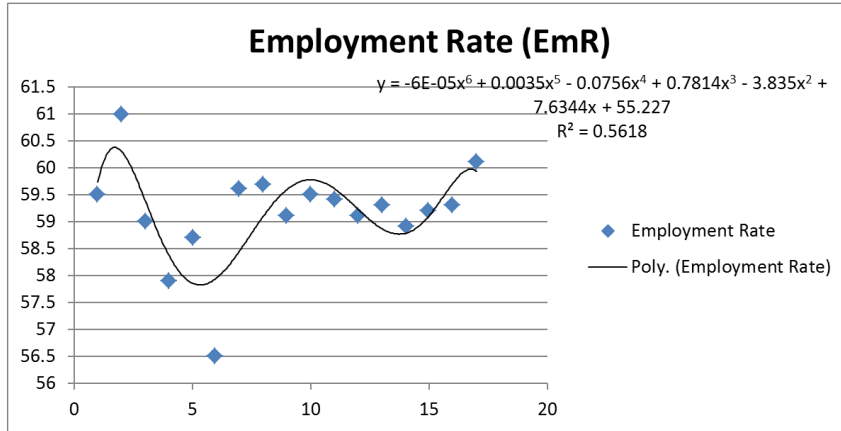


Figure 3. Employment Rate – Tourist Arrival Relationship

marginal effect of elasticity is 6.25, which is greater than the critical value of 1. This means that the percentage change in tourist arrival causes an even larger change in the consumer price index. Moreover, the economic stability is directly caused by the tourism income in terms of prices of goods and services.

Figure 3 presents the ratio of percentage change in terms of employment rate to tourists'

arrival. The elasticity coefficient of 3.0772 indicates elastic relationship between variables. This means that a change in the employment rate is sensitive from the tourists' count in the country. Moreover, using the regression value of $R^2 = 0.561$, it has been determined that a change of tourists' arrival annually influenced the movement of employment rate by 0.561.

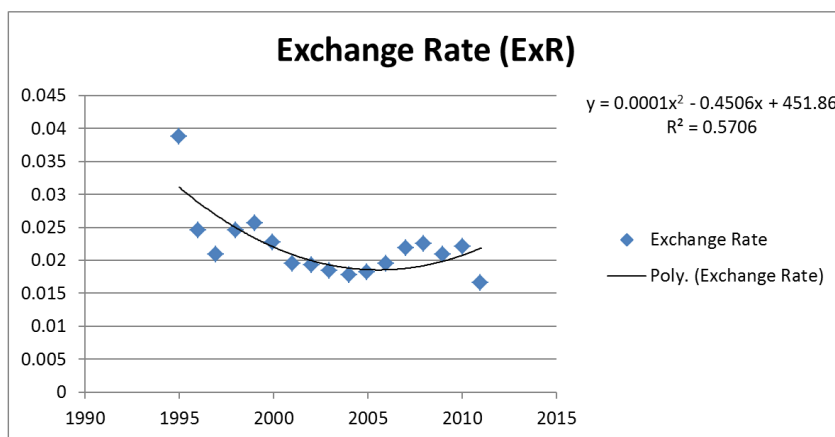


Figure 4. Exchange Rate – Tourist Arrival Relationship

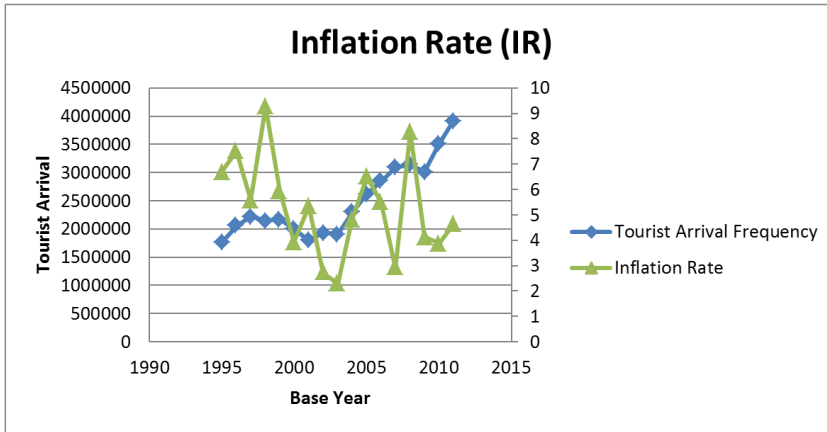


Figure 5. Inflation Rate – Tourist Arrival Relationship

Based on Figure 4, the responsiveness of exchange rate to tourist arrival measures its sensitivity as it affects each other strongly. Positive elasticity of 12.24 which is greater than 1 means that in every increase of 1% in tourist arrival indicates 12.24% increase in Peso to US Dollar exchange rate. Hence, the Philippine economy is advantageous when the tourism industry is performing well.

inelasticity of the inflation rate to tourist arrival. It has been noted that the graphs of the variables deem to be unpredictable. Thus, the inflation rate is independent of the increase of tourist arrival in the country.

Correspondingly, a decrease or an increase on tourist arrival will have an insignificant effect or influence on the inflation rate.

Values presented in Figure 5 refer to the

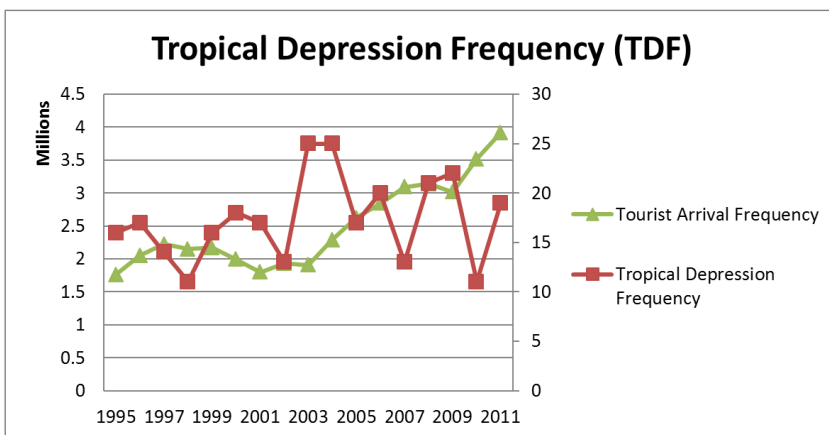


Figure 6. Tropical Depression – Tourist Arrival Relationship

The figure above shows that an increase in the number of weather disturbances does not necessarily affect the number of tourists that visit the country.

5.0 Discussion

Based on the findings of the study (see Table 1) with syllogistic arguments, the researchers found out that higher and better tourism influx results to higher gross domestic product. This implies that the growth of tourist arrival in the country is a parameter of change that entails higher consumer price index in consumer prices as experienced by the country. It was achieved by comparing, over time, the cost of goods and services purchased by tourists since goods and services index reflect only the actual price exchange.

The Consumer Price Index as an indicator of the change likewise leads to low inflation rate (see Table 1), since the purchasing power of money is affected by changes in prices. The CPI in that manner is useful in comparing the movements of employment to changes in the personal income of the workers to monitor and evaluate changes in their financial situation.

Higher tourism influx brings forth lower Peso-dollar exchange rate (see Figure 4) as the CPI also has specific applications in escalating a given dollar value, over time, to preserve the purchasing power of that value. However, it is also used as a deflator of various economic clusters, either of income flows or of expenditure flows. In this regard, higher and better tourism influx can be used to establish and monitor the implementation of economic policy in the country to gauge the effectiveness of the government in containing inflation within its target range.

Economists and investors use the CPI for economic analysis and research on various economic indicators. This determines the causes

and effects of inflation and understands the gaps in the movements of prices of the goods and services represented in the CPI. With this, tourism influx is weighted according to the relative effects of goods and services in the total expenditures of consumers.

Higher tourism influx is influenced by low tropical challenges such as weather disturbances. It is evident that when there is less tropical depression, embassies will not issue a travel advisory that suspends the effectiveness of travel insurance. Therefore, when the weather disturbances are heightened, it increases the premium making the cost of travel much expensive because travel advisory automatically suspends the coverage of travel insurance.

6.0 Conclusion

The tourism industry contributes significantly to the various economic sectors of the country. Moreover, the impact of tourism on the nation's economy is deduced to be either direct (as in the case of dollar revenues) or indirect (as in the case of job generation). Of these two (2), the indirect contribution of tourism to the national economy is far more critical for a sustainable national economic development. It follows that for countries (e.g. Philippines) with rich natural resources open for tourism has the huge potential for enhanced and improved quality of life.

The improved quality of life brought about indirectly by the tourism is not sensitive to environmental conditions prevailing in the country but environmental degradation does. It follows that there is an intimate connection between the country's two-pronged approach on tourism i.e. Clear and green environment and the program on enticing tourists ("It is more fun in the Philippines") and an all-inclusive growth and development.

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