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## **THE IMPACTS OF TOURISM ON SMALL ISLAND STATES**

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# THE IMPACTS OF TOURISM ON SMALL ISLAND STATES

Marc Henry Schembri

## 1. INTRODUCTION

The objective of this study is to assess the impacts of tourism on small island states (SIS) by utilising a number of global indicators, building on the tourist penetration index as proposed and elaborated by McElroy (1998, 1999, 2003). In addition, the study attempts to establish whether tourism impacts are related to good governance to test the assumption that tourists tend to stay away from territories that are considered badly governed.

The main hypothesis of this paper is that SIS in general tend to be more economically, environmentally and socially impacted by tourism than larger countries. A second hypothesis is that good governance is an important factor in attracting tourists and therefore contributes to the impacts. These two hypotheses will be tested using a quantitative approach.

The methods used are mainly two: the first is the construction of composite indices, attempting to measure the economic, environmental and social impact of tourism in 136 countries so as to compare the impacts of these factors on all groups of countries, including SIS. The second method is the regression procedure in order to establish whether there is correlation between tourism impacts, population size and governance.

## 2. LITERATURE REVIEW

SIS have distinctive characteristics and face various economic constraints, mostly due to their size and environmental challenges mostly due to their geographical location.

### 2.1. Small economic size

Due to their small size, small states face constraints in reaping the benefits of economies of scale (Winters and Martin, 2004; Briguglio, 1998), negatively affecting the competitiveness of small states. This is a major disadvantage, due to the fact that many of these states have to depend on exports due to their small domestic market.

### 2.2. Economic vulnerability

Many SIS are highly economically vulnerable as they are exposed to external shocks, including “high degrees of trade openness, exacerbated by high degrees of export concentration and dependence on strategic imports” (Briguglio, 2014). SIS lack natural resources endowments, leading them to depend highly on imports (Briguglio, 2014). Due to their small domestic market, small states depend highly on exports, in a very undiversified market (Briguglio, 2014). SIS also tend to be constrained by their limited

ability to reap the benefits of economies of scale, leading to high cost of production per unit (Winters and Martins, 2004) and are also often restricted to excessive dependence upon a few dominant economic activities (Everest-Philips, 2014).

### **2.3. Fragile ecosystem**

SIS also face social and environmental problems due to their fragile ecosystem (Nath *et al.*, 2010). SIS have *de facto* limited territory and natural resources (Cardoso, 2004; Sharma and Brimble, 2012); such as drinkable water, arable land, forests (which offer food and kindling resources), rivers (which offer fish, fresh water and irrigation resources), minerals and conventional energy sources (Silbert, 2011). The little undeveloped land islands have is thus very precious and beneficial to human health (Vella, 2009).

### **2.4. Disaster Proneness and climate change vulnerability**

Posing a direct threat to the very existence of SIS, some natural disasters lead to the devastation of agricultural sectors, the extermination of entire village populations and the disruption of essential communication services all contribute to the extreme proneness of SIS to succumb to natural disasters (Pelling and Uitto, 2002; IPCC, 2014).

Furthermore, many SIS face dangers arising from global warming and extreme weather events (IPCC, 2014). These include cyclones (hurricanes or typhoons), tsunamis and coastal floods in the tropics. Some SIS also experience volcanic eruptions as is the case in the pacific regions or some eastern Caribbean destinations (McElroy, 2000) as many SIS are located in tropical zones or are of volcanic origin. These in turn cause economic damage (Briguglio, 2014).

## **3. MEASURING THE IMPACTS OF TOURISM**

### **3.1. The economic, social and environmental impacts**

The economic, social and environmental impacts of tourism have been measured by simple ratios, based on data which are readily available. As will be explained below, these ratios may not capture the impacts precisely but they are likely to be related to these impacts. The data is sourced from the WTO Compendium of Tourism Statistics (2013).

#### *Economic impact*

Very often the contribution of tourism to the economy is measured in terms of tourist expenditure as a ratio of GDP. Strictly speaking one should use the value added content of tourist expenditure for this purpose, as total tourist expenditure includes an imported content. However value added data relating to tourist expenditure is not available for most countries, and the present study uses total tourist expenditure as an approximation.

### *Social impact*

As for the social impact, the literature suggests that this could be measured by the number of tourists as a ratio of the population (McElroy, 2003:233) and this is the indicator used in this study.

### *Environmental impact*

In this study, the environmental impact is measured by the number of hotel rooms per square kilometre of land area. This follows the method used in the Tourism Penetration Index (TPI), presented by Mc Elroy and de Albuquerque (1998; 1999).

### *The total impact*

The Index of Tourism Impacts (ITI) is calculated as the average of the three indicators above. Since the indicators are measured in different units, they need to be rescaled in order to average them out. The method chosen to re-scale the indices is the following:

Max/Min formula, defined as:

$$XRS_i = (X_i - X_{min}) / (X_{max} - X_{min})$$

Where  $XRS_i$  is the rescaled observation for country  $i$ ,  $X_{min}$  is the minimum value for all observations.  $X_{max}$  is the maximum for all observations and  $X_i$  is the observed value. In this way the array of observations for each indicator takes a value of between 0 and 1.

## **3.2. The governance factor**

The role of the government plays a major part in the overall development of SIS (Springer, 2011). There are many factors that influence tourists in their choice of visit and good governance is a key factor in attracting tourists (Fletcher and Morakabati, 2008). Safety is a great concern amongst visitors (Swarbrooke, 1999), in fact “perceived or actual travel related risk when travelling to a destination or region of the world where the basic need for personal security may be compromised affects the tourist’s decision” (Fletcher and Morakabati, 2008: 538).

Political stability in island states is of particular importance. Even from home, potential tourists are exposed to media coverage of international political violence (Baker, 2014). High crime rates, violence, terrorism and political turmoil are avoided by tourists because of concerns of themselves falling victim of the instability or crime (Fletcher and Morakabati, 2008).

In this study, as an indicator of governance, the political stability and absence of violence/terrorism dimension of the Worldwide Governance Indicators (World Bank, 2013) is used as an index of a country’s governance.

## 4. METHODOLOGY

For the purpose of this study, states have been categorised into five groups, namely very small island states (VSIS), medium-small island states (SIS), large island states (LIS), small non-island states (SNIS) and large non-island states (LNIS). The size of countries has been measured in terms of their population size. This study deals with independent island states and island jurisdictions forming part of other countries have been excluded from the study.

Islands with less than five hundred thousand (500,000) people are classified as VSIS. Islands with more than five hundred thousand (500,000) people but with less than one million and a half (1,500,000) people are classified as SIS. Those islands with a population exceeding one million and a half (1,500,000) but below twenty-five (25,000,000) people are considered as LIS.

The fourth and fifth categories consist of non-island states. These are classified into small non-island states (SNIS) with populations not exceeding five million (5,000,000) and large non-island states (LNIS) with more than five million (5,000,000) inhabitants. The essence of the exercise is to compare small island states (VSIS and SIS) with larger territories, to bring out the differences between islands and larger states non-island states.

The sample includes 136 states, for which data was available, of which sixteen (16) are VSIS; five (5) are SIS; five (5) are LIS; 32 are SNIS and seventy-eight (78) are LNIS. The 16 VSIS include Antigua and Barbuda, Bahamas, Barbados, Belize, Cape Verde, Dominica, Grenada, Iceland, the Maldives, Malta, Saint Kitts and Nevi, Saint Vincent/Grenadines, Seychelles, St Lucia, Tonga and Vanuatu whilst the 5 SIS comprise the Comoros, Cyprus, Fiji, Mauritius and Trinidad & Tobago. As for the LIS, the 5 states are the Dominican Republic, Jamaica, Mauritius, Madagascar, and Taiwan.

### 4.1. Comparisons of SIS Scores with that of other groups of countries

In order to assess the tourism impact on different countries, two approaches are used, namely (1) averaging the scores for difference categories of countries and (2) regression analysis.

#### *Average impacts for each country group*

In this method, the scores for the five groups, namely, VSIS, SIS, LIS, SNIS and LNIS, are averaged for each group. In this way, one can see whether the tourism impact, on average, is different in VSIS and SIS compared to the other groups of countries. This approach is used for the economic, social and environmental indicators individually and for the average of the three indicators.

#### *Regression analysis*

The second approach consists of regression analysis to compare the tourism impact scores with population. The comparison with population size is based on the assumption that most of the smaller states are also small island states.

We used a multiple regression approach, to allow for the possibility that governance also affects the impact of tourism, as per for the following equation:

$$TI = \alpha_0 + \alpha_1 POP_i + \alpha_2 GOV_i + \alpha_3 DUM_i + U_i \quad i = 1,2,\dots,136$$

where TI is an index of tourism impact, POP is the log of population of each country, GOV is an indicator of political stability and absence of violence/terrorism<sup>1</sup> and DUM is a dummy variable taking a value of 1 for a small island state and a value of 0 for the other states. U is an error term. One hundred and thirty six countries, for which data was available, were included in the exercise.

It is expected that:

- $\alpha_1$  is negative, in which case it will indicate that the tourism impact increases as population gets smaller.
- $\alpha_2$  is positive, in which case it will indicate that good governance increases tourism inflows and therefore the impact of tourism.
- $\alpha_3$  is positive, in which case it will indicate that SIS tend to be more highly impacted by tourism than other countries.
- $\alpha_0$  is a constant and no meaning is attached to it.
- $U_i$  is an error term with the usual OLS properties, particularly that it is normally distributed with mean zero.

This regression exercise was used for the economic, social and environmental indicators individually and for the average of the three indicators.

## 5. RESULTS

### 5.1. General tendencies

Table 1 and Figure 1 show the three indicators and their average for each of the five categories of countries, namely, the very small island states (VSIS), the small island states (SIS), the large island states (LIS), the small non-island states (SNIS) and the large non-island states (LNIS).

The results show that the first indicator, namely the economic impact indicator, measured as the ratio of tourist expenditure over the gross domestic product (GDP), is the highest in VSIS. The second more dependent states are the SIS; the third are the LIS; the fourth are the SNIS with less than five million and in fifth place the LNIS. All three categories of islands exceed by far the economic dependence of tourism of the two categories of non-island states.

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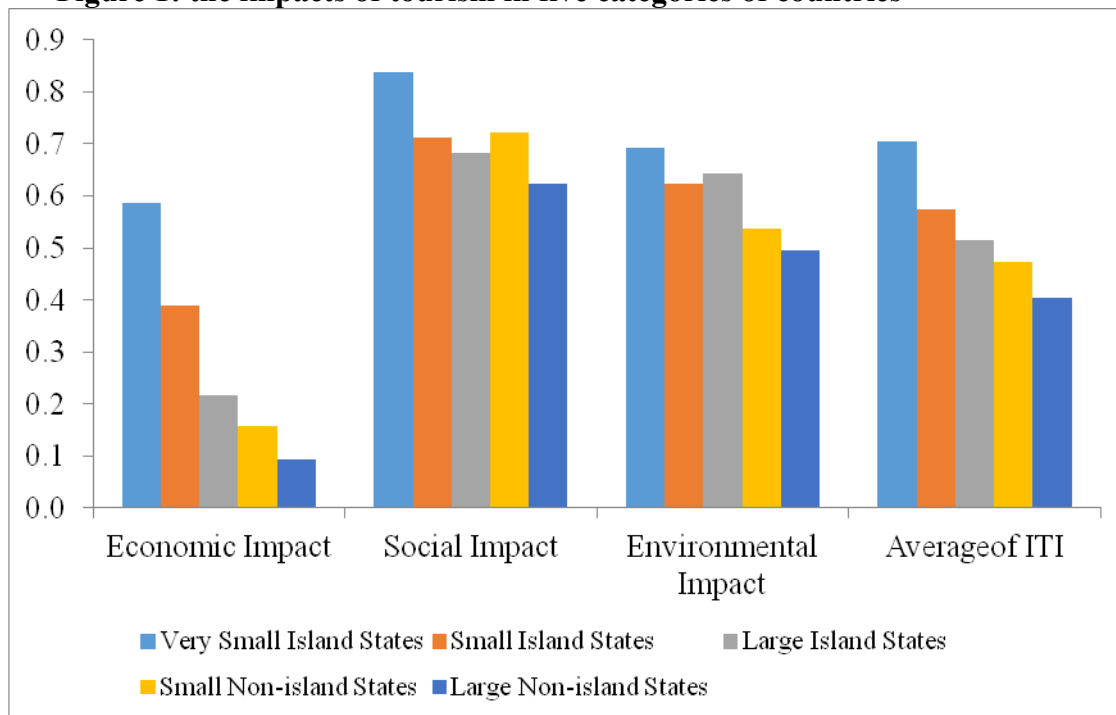
<sup>1</sup> This indicator is one of the dimensions of the Worldwide Governance Indicators (World Bank, 2013) The scores of this indicator are presented with a value of approximately -2.5 to 2.5, with higher values corresponding to better governance. The data was again rescaled using the Max-Min formula so that it takes a value from zero (0) to one (1).

**Table 1: The impacts of tourism in five categories of countries.**

	<b>Economic Impact</b>	<b>Social Impact</b>	<b>Environmental Impact</b>	<b>Average (ITI)</b>
Very Small Island States	0.586	0.837	0.693	0.705
Small Island States	0.390	0.712	0.623	0.575
Large Island States	0.217	0.683	0.644	0.515
Small Non-island States	0.157	0.723	0.538	0.473
Large Non-island States	0.093	0.625	0.496	0.404

Note: all variables are scaled so as to take a value of between 0 and 1 using the Max-Min formula as explained above.

**Figure 1: the impacts of tourism in five categories of countries**

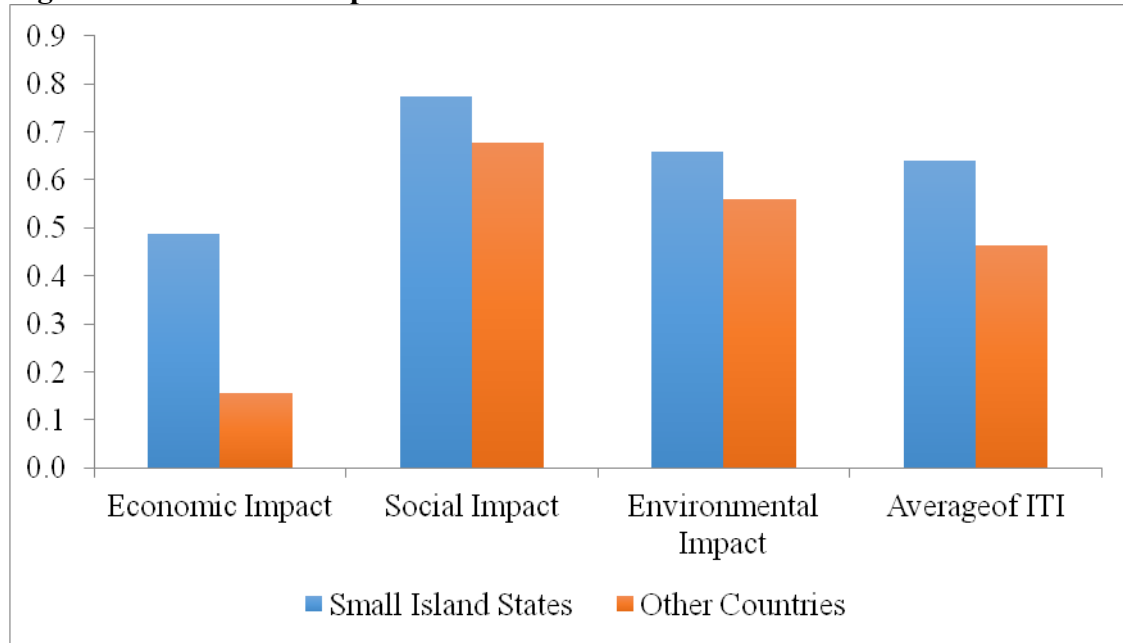


With regard to the second indicator, namely the social impact indicator, measured as the ratio of inbound tourists to the population, VSIS score the highest again, meaning that the social pressure on such states is felt more strongly than in the other categories. The SNIS and the SIS come second and third.

The third indicator, namely the environmental impact indicator, measured, as the number of inbound tourists over land area is again highest for VSIS. The second are the LIS and the third are the SIS. All these three categories of islands exceed by far the environmental pressure of tourism of non-island states in this indicator also.

The tourism impact is mostly felt in island states, predominantly in the economic indicator in which results show the highest discrepancy. It can be seen from Figure 2, that when re-grouped together and averaged, the small-island category are more impacted economically, socially and environmentally than the other category of countries.

**Figure 2: The relative impact of tourism on small islands**



## 5.2. Regression results

The estimation of the regression equation shown above are presented in Table 2:

**Table 2: Results of the regression estimated coefficients**

		$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$R^2$
Equation 1: Economic impact	Coefficients	0.31	-0.05	-0.09	0.12	0.48
	<i>t statistics</i>	5.52	-4.57	-0.65	4.58	
Equation 2: Social impact	Coefficients	0.56	-0.08	0.43	-0.001	0.48
	<i>t statistics</i>	4.89	-3.60	6.54	-0.02	
Equation 3: Environmental impact	Coefficients	0.33	-0.03	0.28	0.10	0.29
	<i>t statistics</i>	2.85	-1.31	4.12	1.86	
Equation 4: Average of three impacts	Coefficients	0.36	-0.05	0.28	0.10	0.46
	<i>t statistics</i>	3.72	-2.75	4.93	2.41	

It can be seen that from Table 2 that most of the estimated coefficients have the right sign and are statistically significant at the 95% level. All the equation 4 suggests that the overall impacts are higher for small countries, as indicated by the negative sign on the coefficient on the population variable ( $\alpha_1$ ). The coefficient on “small islandness” ( $\alpha_3$ ) suggests that the impact on small islands is likely to be higher than other groups of countries (with the exception of Equation 2, where the effect is not significant). The effect of good governance, as indicated by the coefficient  $\alpha_2$ , suggests that this leads to higher tourism inflows than otherwise.



In conclusion, the regression results indicate that small states do indeed have a higher tourism impact compared with other group of countries and this is particularly so for small island states.

Ironically, good governance is likely to exacerbate the impacts, but this is understandable, as political instability often discourages tourism.

## **6. IMPLICATIONS AND CONCLUSIONS**

### **6.1. Summary of Results**

In this study, two main hypotheses have been tested, namely (a) that SIS in general tend to be more economically, socially and environmentally impacted by tourism than larger countries, and (b) that good governance is an important factor in attracting tourists.

Using a quantitative approach, indices have been constructed to measure three major impacts: the economic impact, the social impact and the environmental impact. Information gathered from secondary data, available from published sources such as the World Tourism Organisation (WTO) and the World Bank have been used.

In order to test the relationship between the tourism impact taking into consideration country size (noting that many small states are also small islands) and political stability, the multiple regression approach is used where the dependent variable is a function of more than one explanatory variable. In this case, the dependent variable is tourism impact and the explanatory variables are population and political stability.

The results confirm the hypothesis that small islands states tend to have higher tourism impacts. In addition, results also confirm that tourism impact seems to be positively related to political stability.

### **6.2. Implications of the results**

SIS face various economic, social and environmental challenges mostly due to their small size. This study has shown that small island states are highly impacted by tourism. One may ask, in this regard, does tourism add to these disadvantages? The answer is that these states derive economic benefits as indicated in this study. Not only does the industry generate jobs directly affiliated to tourist activity, such as in airports, seaports, hotels, restaurants, transport companies, travel agencies, souvenir shops and restaurants, but work is also generated (or augmented) indirectly in other sectors, including agriculture, fishing, banking, printing, and other activities with which tourists come in contact, including sections of the public sector (Briguglio, 2008). The large proportion of tourism-related employment in SIS means that a large proportion of national income originates directly and indirectly from tourism, and this, in turn, induces further income, giving rise to a multiplier effect (Archer 1989). Tourism is also economically important because it is a source of foreign exchange and SIS can register relatively large balance of payments deficits in the absence of proceeds from tourism.

There are also a number of advantages which are not directly economic, but which have an impact on the material well-being of the local population. These include a renewed interest in local arts and crafts, improvements in educational, leisure, communication, medical and other facilities in the host countries, a general awareness of the man-made and natural aesthetic assets, and a broadening in the outlook of the islanders. This is especially true in their context of market scarcity and a low diversification in industries (McElroy and de Albuquerque, 1998). Tourism's economic factor highly helps less diversified SIS economies that tend to suffer from intense trade openness, growth costs and volatility of growth rates (Easterly and Kraay 1999).

On the other hand, there are also very high environmental and social impacts. As McElroy and de Albuquerque (1998) suggest, tourism endangers the environment at large with constant infrastructure development, deforestation and the erosion of upland forests. As a result, water resources are also affected and poisoned, followed by the silting of wetlands, loss of virgin land and the depletion of endemic species. Tourism also impacts society at large with a strain on resources and exposure to internal shocks relating to health, services and resources allocation (St Bernard 2002).

The issue of governance plays a crucial role in the overall economic performance of small states, and it also has an impact on tourism inflows. In the context of tourism, good governance is crucial for attracting visitors, as facts like political instability create and a negative impression, portraying a particular country as unsafe to visit.

In conclusion, the main implication of this study is that SIS are advantaged because they generate income, employment and foreign exchange from tourism. In addition, good governance boosts the industry as it attracts more tourists. However, earnings from tourism come at a high social and environmental price.

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