

THE IMPACTS OF TOURISM ON SMALL ISLAND STATES

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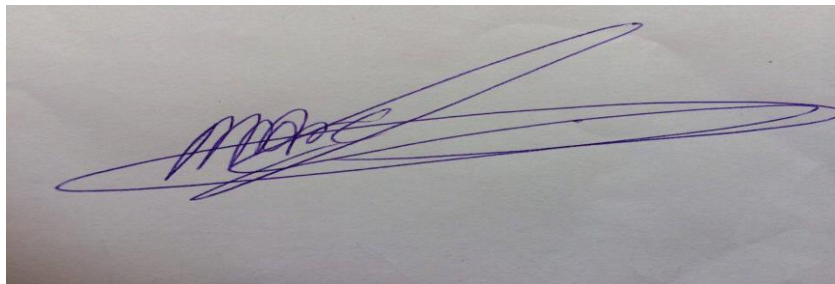
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To my father, Louis (1951-2007).

Abstract

This study assesses the impacts of tourism on 136 countries using three indicators respectively relating to the economic, the environmental and the social impacts. The impacts on small island states are then compared with those on other states.

The economic impact is measured as tourism expenditure over GDP, the environmental impact is measured as tourist inflow over land area and the social impact is measured as a ratio of visitors to the local population. Furthermore, the study evaluates whether governance, measured by the Worldwide Governance Indicators (2013), has an effect on such impacts. The multiple regression method is used for this purpose.

The results indicate that small island states tend to be impacted by tourism, economically, environmentally and socially to a higher extent than other countries.

One implication of this study is that although tourism is an important source of revenue for small islands, this industry has very high social and environmental impacts. As McElroy and de Albuquerque (1998, 2000) suggest, tourism endangers the environment at large with constant infrastructure development. Tourism may also have high social negative impacts relating, amongst others, to overcrowding, traffic congestions and increased demand on health services (St Bernard, 2002).

The main conclusion of this dissertation is that small island states are advantaged because they generate income and employment and foreign exchange from tourism, but this may come at a high environmental and social price.

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TABLE OF ACRONYMS

FRNHTC	Financing Requirements of Nature and Heritage Tourism in the Caribbean
IPCC	Intergovernmental Panel on Climate Change
ITI	Index of Tourism Impact
IS	Island State(s)
LNIS	Large Non-Island States(s)
LIS	Large Island States(s)
SIS	Small Island State(s)
SNIS	Small Non-Island State(s)
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
UNESCO	United Nations Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
VSIS	Very Small Island State(s)
WGI	World Governance Indicators
WTO	World Trade Organisation
WTTC	World Travel and Tourism Council

1. INTRODUCTION

1.1. Research objectives

The objective of the dissertation is to assess the impacts of tourism on small island states (SIS)¹ by utilising appropriate indices, building on the tourist penetration index as proposed and elaborated by McElroy (1998, 1999, 2003). In addition, the study will attempt 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.

1.2. Research questions and hypothesis

The main hypothesis of the research 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.

1.3. Research method

The methods that will be utilised in this dissertation 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 SIS. The second method is the regression process so as to establish whether

¹ SIS will be used as an abbreviation for Small Island State or Small Island States (in plural) thereon. Likewise, IS will be used for Island State or Island States (in plural).

there is correlation between tourism penetration and good governance. A more detailed explanation of the methodology is given in Chapter 4.

1.4. Layout of the dissertation

The dissertation is organised as follows. Chapter 2, which follows this introduction, will present a literature review on themes relating to the subject of the dissertation. Chapter 3 will describe the methodology that will be used to construct the penetration composite index and to assess whether this is related to good governance. Chapter 4 will present the results with a discussion on the main findings. Chapter 5 will conclude the dissertation with some important implications.

2. LITERATURE REVIEW

2.1. Introduction

In this chapter the areas of study that are discussed include a number of themes that are directly related to the title of this dissertation. These include the definition of SIS the major economic, social and environmental challenges faced by these states, the concept of sustainable island tourism, the indices used to measure tourism impact, and the relation between tourism impact and governance.

2.2. Definitions of SIS

Islands have been defined in many ways. One definition relates to their geographical and geomorphological topography, namely that of being a mass of land surrounded by water, relatively detached and/or remote from the mainland (Nurse *et al.*, 1998).

The size of countries has been a matter of debate (Downes, 1988). Amongst the many definitions of SIS, some relate to population size whilst others prefer to calculate size in terms of land area. For example, if Iceland is measured in terms of population, it is considered as a SIS but in terms of land area it measures the size of England and would therefore not qualify for such a category.

Small states have been defined as politically independent countries with a population of 1.5 million or less (Commonwealth, 2016; World Bank, 2016). However, other authors use different population cut-off points for small states, from half a million inhabitants to 2.7 million (Crowards, 2002) for example, or any state with less than one million (1,000,000) people may be referred to as a micro state (Stienmetz and Wievel, 2010).

Apart from population size, small states – and particularly, islands – tend to be characterised by their wide-ranging vulnerabilities and specific economic conditions (Briguglio, 1995) together with environmental pressures and climate change impacts, particularly sea-level rise (IPCC, 2014: chapter 29). Such features set SIS apart from other countries and this theme will be explored in more detail in this chapter.

2.3. Small Island economies: characteristics and challenges

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

Economic challenges of small island states

The literature on economic challenges in SIS focusses on the issue of vulnerability. Vulnerability indices have been constructed (Briguglio, 1995, Atkins *et al.*, 2001; Briguglio and Galea, 2003; Crowards, 2002; UNDESA, 2011) and defined “in terms of inherent features which render countries exposed to external shocks, including high degrees of trade openness, exacerbated by high degrees of export concentration and dependence on strategic imports” (Briguglio, 2014a).

Small states, as expected have small economies with lack of natural endowments, leading to highly open economies (Easterly and Kraay, 1999, Briguglio, 1995). Due to their small domestic market, small states have to depend highly on exports, in a very undiversified market (Briguglio, 2014b). 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).

SIS are often restricted to excessive dependence upon a few dominant economic activities (Everest-Philips, 2014). In some instances, islands such as those in the Caribbean, are dependent on a single or a very few major exports such as bananas, sugars, textiles or tourism to generate foreign exchange earnings (Atkins *et al.*, 2001). This renders these countries highly exposed to adverse external economic shocks (Easterly and Kraay, 1999², Briguglio *et al.*, 2008).

Transport costs in SIS tend to be relatively higher per unit as they are constrained to use air and sea transport for their imports and exports. In addition, due to their small size, SIS import and export small quantities of goods, thereby facing the problem of overhead cost indivisibilities in transport (Briguglio, 1995). Due to their high dependence on imports, domestic prices in SIS are, as a result, to a large extent determined by importation prices (Armstrong, 2004).

Furthermore, being isolated and remote from the mainland means that provisions are subject to weather outcomes (Schulz, 2004). Uncertainty of supply looms for remote SIS since they are side-lined from the main commercial routes, giving rise to delays and unreliability in transport services in industrial supplies (Briguglio, 2004). Large quantities of stocks are often held to counter related problems, augmenting costs associated with stock-keeping, including tied-up capital and rent for warehousing (Sharma and Brimble, 2012).

² Trade shocks are described by Easterly and Kraay (1999) as significantly more harmful to SIS than other countries. Their results are established by two factors: that (i) the share of trade in GDP is especially large in SIS and (ii) exports (products exported and export markets) are likely to be more specialised than those of large states.

The small domestic market of SIS can also give rise to monopolistic and oligopolistic market situations, given that a small-sized domestic market still needs to achieve a certain minimum efficient scale of operations for the export market, often giving way to a small number of operators to dominate the market (Vella, 2011).

Globalisation carries some negative effects also for SIS, as it subjects them to the inflation and exchange rate policies of their suppliers (Schulz, 2004). To the extent that monetary policy fails to regulate effectively the supply and cost of credit, as the money supply of such open economies is essentially determined by the trade balance (Briguglio, 2004). “It is procyclical, rising and fuelling inflation in boom times and falling and prolonging the downturn in recessions. This exacerbates their susceptibility to potential adverse external shocks beyond their control” (McElroy, 2000: 49).

Environmental challenges of SIS

SIS also face special 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).

Furthermore, SIS face dangers arising from natural disasters and 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, 2014b).

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 (Pellinga and Uittob, 2002; IPCC, 2014).

McElroy and de Albuquerque (1998) underline the brutal deforestation of islands, due to tourism-induced development, leading to the erosion of upland forests. Building expansion in such areas has affected water streams, the silting of wetlands as well as dredging and anchoring. Large-scale beach resorts result in altering coastlines, lagoon pollution, the depletion of endemic species and archaeological artefacts, as well as contributing to beach loss (McElroy and de Albuquerque, 1998).

SIS's also face problems associated with coastal erosion triggering questions regarding security when potential visitors come to pick their destinations (McElroy, 2003).

Moreover, many small islands are highly vulnerable to the effects of climate change and sea-level rise (UNFCC, 2007). They are frequently located in regions prone to natural disasters of a hydro meteorological and geological nature. Due to the problem of overhead costs indivisibility, their adaptive capacity to climate change is generally low (IPCC, 2014). This is this is especially problematic for SIS due to the fact that a large proportion of the population in SIS tend to settle and work on the coastal areas (UNFCC, 2007).

Tuvalu, as SIS in the Pacific Ocean, is often given as an example of the high vulnerability of SIS to climate change. Rural populations have migrated to the cities to find work, mainly due to climate change damages – bringing almost half of Tuvalu's population to Funafuti atoll (UNFCCC, 2007). Similarly, Papua New Guinea saw the movement of Cartaret islanders to Bougainville as a consequence of inundations from high water levels and storms (UNFCCC, 2007).

These negative impacts depict a 'boomerang effect' instigated by tourism; as the required infrastructural development for it to prosper causes damage the natural resources tourists seek, as an outcome (Hsiao *et al.*, 2002). This includes reefs in tropical and pacific areas as well as mangroves and forests as for local and endemic flora. Fauna is also affected as species become endangered or extinct (McElroy and de Albuquerque, 2000). In fact, Butler (1991) argues that tourist destinations tend to pass through various stages of increasing visitor density, scale, external control and socio-ecological damage until their attractiveness wanes.

The social challenges faced by SIS

Social vulnerability may be defined in terms of the extent to which a society is exposed to external shocks, together with internal shocks relating to health, education, resources allocation and communications (St Bernard, 2002). Social pressure arises from shock or stress derived from economic strife, environmental changes, government policies or internal events and forces resulting from a combination of factors (Briguglio, 2002).

Everest-Philips (2014) argues that the social complexities by which SIS are constrained include small but growing populations with high inequalities, a deep divide between urban elites and the rural poor, high youth unemployment and deep pockets of

poverty. UNEP (2014) has connected disruptive gender relations to crime and violence to reduced opportunities for youth to migration in SIS. Lack of social cohesion brings about the loss of traditional societal (e.g. family, gender, class, culture, and generational) structures and values as the process is often influenced, reinforced, and hastened by external shocks and globalisation (UNEP, 2014).

Limited capacities in the public sectors lead to constraints relating to social development, such as relatively high costs of tertiary education and restricted opportunities for high-skilled employment (Everest-Philips 2014). Youth unemployment forces emigration for greater opportunities, leading to a “brain drain” situation in which developing SIS lose skilled people (UNEP 2014:51).

Health and education are also a challenge faced by SIS. When measuring vulnerability in SIS, St Bernard (2007) found that SIS, including Belize, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines, maintain poor standards in their social institutions, education management and health infrastructure. Sickness, including diabetes, obesity, and heart disease are afflicting SIS as they embrace the poor dietary habits and nutrition choices of the developed world (UNEP, 2014).

2.4. The rise of tourism as a dominant economic activity in SIS

Throughout the 20th century, as observed by McElroy (2003), tourism quickly became an industry highly relied upon by SIS. From the 1950s onwards, SIS around the world entered the process of decolonisation, with some achieving greater newfound autonomy powers and others outright political independence. From the 1960s, more than thirty tropical and temperate islands across the five major oceanic basins have become politically independent (2003).

Small island economies diversified into non-traditional activities such as offshore finance and ship registry (Baldacchino and Milne, 2000) as well as focusing on creating tax havens and ultimately, grabbing the opportune bandwagon of international tourism (Baldacchino and Milne, 2000).

Throughout the decades, tourism has reoriented the economic strategies of SIS away from traditional exports such as sugar and copra toward tourism expansion, related infrastructure and financial services (McElroy, 2003). The results have transformed insular landscapes across the Caribbean, Mediterranean and North Pacific, and created the so-called “Pleasure Periphery” of North America, Europe and Japan respectively (McElroy, 2003).

The single comparative advantage of SIS, according to McElroy and de Albuquerque (1998), is the exclusive natural and cultural heritage they can offer as tourist destinations. It is therefore not surprising that SIS have turned to tourism as a sector to develop. According to the FRNHTC (1993), tourism is considered to secure three significant economic features of activities in relation to the economy of SIS: generation of income, employment, and foreign exchange earnings.

Why small island states are attractive for tourists

Islands can truly excel as prime destinations, as explained by Vella (2009), making tourism a viable industry regardless of the size of the island or its production capacity. The notion that tourism can contribute significantly to the economic development of SIS continues to flourish as the industry has consistently demonstrated growth in recent years (Vella 2009)

As islands are characterised by their degree of isolation, peripherality and boundedness (King, 2009), Lovegrove (2012) argues that these secluded territories offer, however small or large, an appealing cut-off from the mainland and from the social climate a tourist usually comes from. Depending on their seclusion and remoteness, together with their geographical position islands induce curiosity in people due to their small ecological and social differences (Lovegrove, 2012).

Apart from the natural attractions that have long been drawing tourists to islands, such as the sun, sea and beaches, tourism has taken on a more personal and wide-ranging experience for the visitor (King, 1993). In particular, the geographical fascination of islands and their historic and cultural roots (King, 1993). Some will visit islands for favourable weather conditions (Vella, 2009) or possibly for the sports (and often also extreme sports) due to rock formation or water currents (Reid and Reid, 1997). This adventure sports would include rock climbing, abseiling, surfing and other boardsports (Buckley, 2002).

Factors related to health-benefits and wellbeing are often attributed to SIS. Major attractions for tourists include ecological attributes such as warm temperatures, clear waters and low health risks (Uyarra et al, 2005). Marine wildlife attributes, including coral, fish variety and abundance or terrestrial features such as beach characteristics or diverse wildlife.

2.5. Sustainable Tourism

Environmental and social degradation associated with tourism have led to many publications on sustainable tourism (e.g. Baum, 1999; Briguglio 2008; Stabler, 1997). Such a concept suggests major changes in the way tourism functions as an industry,

with particular attention to bio-cultural assets whilst fortifying the visitor experience. “[I]t requires satisfying the demands of tourism’s four major stakeholders: improved life quality for the hosts, profitability for travel interests, quality experience for guests, and a similar legacy of heritage and well-being for future generations” (Laws, 1995; Sollow, 2000).

According to Vella (2009), tourism has modernised itself to offer alternative touristic accomplishments and integrate economic growth with less environmentally harmful activities. The aim of sustainable tourism is to maintain and develop the environment’s quality, the natural and cultural heritage of tourism destinations, ensure long-term cost-effectiveness for the sector and wide-distribution of economic benefits among the local community (Ballet, 2011; Castri, 2002).

Sustainable tourism is often associated with certain types of tourism such as agro-tourism, eco-tourism, religious tourism, gastronomy-related tourism, health-tourism, sight-seeing, bird-watching, hiking, diving, sport-related tourism, historical indulgence and educational-related tourism (Vella, 2009 and Castri, 2002).

The implementation of self-regulation and labelling are an intrinsic part of sustainable tourism (Briguglio, 2008). In order to reduce the impact on the environment and make substantial financial savings, good environmental practices should be promoted (e.g. laundering of linen on request only, time-switching of electric lightning and air conditioners) (Briguglio 2008). Eco-labels, recognised as credible certification schemes can be employed for accommodation services and reward housings with good environmental performance, thus using tourism itself to protect the environment and

helping environmentally-minded tourists to choose their accommodation (Briguglio, 2008).

Another solution includes government intervention with legal controls and planning (Briguglio, 2008). Placed within the legal framework of SIS, proactive measures for the enhancement of the environment and to ensure the efficient use of resources can improve the quality of life of islanders and reduce haphazard tourism development (Briguglio, 2008). Impact assessments to examine individual project proposals are also indispensable (Briguglio, 2008).

Further measures could include economic instruments (Briguglio, 2008). Internalising costs with instruments such as taxes, fees and subsidies can be used to alter prices in order to cover environmental costs and allow the market itself to reduce environmental damage (Briguglio, 2008). These measures are especially advantageous as they provide an incentive for tourism operators to economise on environmentally damaging activities and ensure an efficient allocation of resources, thus promoting sustainable use. (Briguglio, 2008).

Setting standards and setting up effective monitoring procedures provides quality and quantity standards of good practice (Briguglio, 2008). Examples of this includes limiting the number of tourists in beaches or places of interest and capping maximum levels of pollution arising from waste, fuel and noise.

Albeit, the concept of sustainability should not be restricted to leisure only as argued by UNESCO (2016). All tourism activities of whatever motivation – holidays, business travel, conferences, adventure travel and ecotourism should respect both the local people and the traveller, cultural heritage and the environment. It seeks to provide

people with an exciting holiday that is also of benefit to the people of the host country. (UNESCO, 2016).

2.6. Indices to measure tourism impact

Measuring the economic impact of tourism

As explained above the literature often depicts SIS as highly dependent on tourism to generate income, jobs and foreign exchange inflows.

Very often the contribution of tourism to the economy is measured in terms of tourist expenditure. This however includes an imported content and therefore it is more appropriate to measure such contribution in terms of domestic value added.

According to the Glossary of Statistical terms (2002), tourism value added can be defined as a measurement that is related to a production process taken as a whole: a combination of inputs, capital goods, labour and technology, in order to obtain a combination of outputs. The value added is the difference between the value of output and the value of inputs (United Nations, 2008)

Tourism value added is the process of foreign exchange, done through the direct touristic consumption for the production of goods and services in the tourism sector (Vellas, 2011) in the purchase of local goods, use of accommodation, entertainment, food and beverages, shopping and other attractions (Jacobssen *et al.*, 2003).

Whilst it is generally agreed that the concept of 'value added' consists of the net value of primary income generated in the process of production, tourism value added is

henceforth the value added generated in the processes of production in their response to tourism consumption (Liberos, 2004).

The economic impact of tourism is manifested both in the direct and the indirect economic effects within the tourism sector (Vellas, 2011), represented by typical tourist-purchased products and the intermediate consumption for the production of goods and services in the tourism sector respectively (Vellas, 2011). Direct expenditure by tourists “occurs on a range of local goods and services, including accommodation, entertainment, food and drinks, shopping and attractions” (Jacobssen *et al.*, 2003).

Measuring the social impact of tourism

As for the social impact, the literature strongly suggests using the number of visitors entering a country to measure tourism impact. McElroy’s study on 51 islands, entitled *Tourism Development in Small Islands Across the World*, quotes that “the most common measure of tourism’s socio-cultural impact is the ratio of visitors to the local population” (2003:233) and Sutton’s assessment on social pressure in islands used visitor inflow for “external validity to the research techniques used for measuring social impacts” (1993:256).

Measuring the environmental impact of tourism

The Tourism Penetration Index (TPI), as presented by Mc Elroy and de Albuquerque in 1998 and 1999, attempts to measure the environmental impacts in SIS as a consequence of tourism as a component of their (TPI). The impact is measured by the

number of hotel rooms per square kilometre of land area to measure environmental pressure (McElroy and de Albuquerque, 1998).

The sample includes a number of islands, including 18 islands from the Caribbean, 9 from the Pacific Ocean, 4 from the Indian Ocean (Comoros, Maldives Reunion and Seychelles), 2 from the Mediterranean (Cyprus and Malta) and 2 from the Atlantic Ocean (Bermuda and Cape Verde).

TPI scores help confirm what is expected from historical observation. The 35 islands are loosely ranked from most penetrated (St. Maarten) to least penetrated (Kiribati). Generally, the more traditional, developed, and accessible Caribbean and Mediterranean destinations populate the top half of the rankings while the more isolated, less visible, and recently emerging Pacific and Indian destinations populate the bottom half (McElroy and de Albuquerque 1998).

2.7. Good Governance in SIS

As a general rule, governance consists of a number of traditions associated with a specific country and the institutions by which authority in a state is exercised (World Bank Group, 2016). The role of the government plays a major part in the overall development of SIS (Springer, 2011) as the combination of the governing body together with the legal institutions and the public services as essential elements of governance and “accountability to the state’s citizens and application of the principles of justice and effectiveness”.

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).

Even when compared to natural disasters, such as floods, hurricanes or earthquakes, these do not have the magnitude of impact as that associated with political instability when the visitor comes to make a travelling choice (Fletcher and Morakabati, 2008). Political turmoil in a country endangers economic aspirations to attract tourists (Ritcher, 1992). Consequently, it is important for destination marketers to “understand perceptions and attitudes in order to devise promotional strategies to address concerns and to alter negative and reinforce positive perceptions” (Baker, 2014: 59).

A country should provide leadership, establish effective public sector institutions with full accountability and transparent decision-making, use suitable legal and financial instruments to balance economic growth priorities with impacts on social structures, livelihoods and the environment (Springer, 2002). There should be adequate and reliable outreach mechanism for emergency management, a strong local governance system, widely available socioeconomic resources and opportunities, as well as infrastructures (Springer, 2002).

2.8. Conclusion

In conclusion, this chapter has given definitions of SIS and presented their economic, environmental and social challenges. SIS's characteristics are what puts them apart from other countries, in particular, their economic vulnerability, their fragile ecosystems as well as their proneness to succumb to natural disasters and climate change and the social pressures arising from economic shocks and environmental degradation.

It can be seen from the literature that tourism quickly developed as a major industry in SIS and contributes highly to their GDP. Islands' attractiveness plays a major role in this development, particularly because of their beautiful landscapes, temperate climates and a fascinating culture and history. The tourism industry is undeniably significant for SIS as underlined by McElroy and de Albuquerque (1998) and Briguglio (2008, 2010), and has been proven a preferred industry to invest in, optimising financial returns and foreign exchange earnings.

However, tourism poses environmental and social pressures on the receiving country. Tourists require the construction of hotels and apartments for accommodation and many common or private systems of transportation for mobility. Other components and utilities include the provision of water and electricity heating and cooling systems and the agricultural strain due to nourishment provisions. Such developments impose a weight on the country of visit, which adds up to the existing demands of the local population. This is especially true in acutely seasonal destinations where the impact is greater, as large numbers of people require a large amount of resources in a relatively short period of time.

It thus appears that sustainability is the moral and strategic key when considering the tourism industry in SIS. Whilst meeting the tourism's infrastructural demands and growth, the environmental and social aspect should not be undermined. Natural resources, together with the often fragile and endemic genera of countries are running a constant risk of being depleted or annihilated. This may not only have a negative impact on the domestic communities but may also damage the future sustainability of places of interest for the tourists themselves (McElroy and de Albuquerque, 1998).

Finally, it has been noted that good governance is an important factor in the overall development of SIS. Whilst governing to secure the sustainable progress of a state, special attention should be given to violence, crime and terrorism to increase the chances of potential visitors to a country. Tourists rightly fear for their safety and will turn their back from a country they feel endangers them.

There has also been reference to studies on how they assess tourism impact. Tourism expenditure and tourism inflow can safely be taken as an index to measure tourism impact. These data analyses are at the basis of this study, further elaborated in the methodology chapter.

3. METHODOLOGY

3.1. Introduction

This chapter presents the methodology used to obtain the results relating to the research questions set in the introductory chapter. The hypothesis on which this dissertation is based is that SIS tend to have higher impact of tourism than larger countries in economic, environmental and social terms than other countries and that good governance affects tourist flows. These assumptions will be tested quantitatively.

3.2. Developing an index of tourism impact

The Index of Tourism Impact (ITI) computed in this dissertation is made up of three sub-indices, namely, tourism's impact on the economy, its impact on society and its impact on the environment.

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, as pointed out in the literature review. 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.

Capping the population is important to avoid other countries or continents, such as England or Australia, to form part of the pool of what this study considers as islands. As although these are pieces of land surrounded by water, they do not characterise the fundamental socio-economic challenges smaller islands face, such as discussed in the literature review.

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. Appendix 1 shows the list of countries for which data was available, classified according to the above-mentioned groups, together with the population of these respective states in ascending order. The sample includes 136 states, 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, the Bahamas, Barbados, Belize³, Cape Verde, Dominica, Grenada, Iceland, the Maldives, Malta, Saint Kitts and Nevi, Saint Vincent/Grenadines, the 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.

3.3. Constructing the ITI: methods applied

³ Belize is not an island but has been included in small island studies (e.g. St Bernard 2007) due to its socio-economic and environmental characteristics.

Three indicators are used to analyse the economic social and environmental impacts of tourism.

The economic impact

Ideally, the economic impact should be measured by the value added component of tourism expenditure as a ratio of GDP. In this way, the import content of tourism expenditure is excluded. However, this data is not available in international databases for a sufficiently large number of countries. As an alternative, the indicator used in this dissertation is the ratio of tourist expenditure to GDP (TEXP/GDP).⁴

The data is sourced from the WTO Compendium of Tourism Statistics (2013).

The social impact

The social impact is very challenging to measure because visitors may have various impacts on the host community including: increase in population density, increase in traffic, increase on infrastructure demand, increase in resources demand (such as food and water), as it is pointed out in the literature review.

The social impact indicator in this study is represented by the ratio of tourism to the population. Admittedly, this is a simplistic way of measuring the social effects of tourism, however it sheds a light on the number of tourists that add to population

⁴ It should be pointed out that a country with a low import content in tourist expenditure, for which a given TEXP/GDP is X%, would have a higher tourism economic impact than another country in which the TEXP/GDP ratio is also X% but has a higher import content.

pressure. Ideally, one should also include the number of days that tourists stay in the country. In this way, one can measure the tourist equivalent as $(T \cdot D) / (P \cdot 365)$ where T is tourism inflow, D is length of stay days and P is the local population.

Due to lack of data for a sufficient amount of countries on the length of stay, the social impact indicator is simplified as the ratio of tourism to population.

The data is sourced from the WTO Compendium of Tourism Statistics (2013).

The environmental impact

Again, in this case, the environmental impact depends on a number of factors. These are difficult to measure due to the multiple environmental impacts including degradation of beaches, increase in transport and increase in waste. Therefore, direct methods such as deforestation and the annual rate of arable land loss, or per visitor water and electricity consumption are precluded from the data in view of the unavailability of the data.

This study focuses on the number of tourists over land area as the environmental indicator. A more refined index may include the number of tourist beds as a ratio of land area or the number of tourist establishments as a ratio of land area. However, here again, data is lacking.

The data is sourced from the WTO Compendium of Tourism Statistics (2013).

3.4. The Index on Tourism Impact (ITI)

The ITI is calculated as the average of the three indicators above. Since the indicators are measured in different units, they need to be rescaled. The method chosen is the 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.

3.5. Governance and tourism impact

Constructing the ITI: governance analysis

In this dissertation, the tourism impact is correlated with a country's governance. As an indicator of governance, the political stability and absence of violence/terrorism dimension of the Worldwide Governance Indicators (WGI) (2013) is used as a report to measure a state's governance score. The reports consists of a succinct investigatory set of data outlining the views on the quality of governance and established the statistical data used in this study.

The data is collected from businesses and enterprises, citizens and non-governmental organisations (NGOs). The resulting estimates of governance are scored with a value of approximately -2.5 to 2.5, with higher values corresponding to better governance.

Using the WGI's political stability and absence of violence/terrorism dimension allows this study to capture perceptions of the extent to which respondents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence. The data is again rescaled using the Max-Min formula so that it takes a value from zero (0) to one (1).

3.6. 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. Firstly, 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 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.

The second approach consists of using simple 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.

The third approach involves using multiple regression analysis, meaning that the tourism impact is regressed on three variables, namely, population size, governance and a small island dummy. The comparison with the governance score is to assess whether governance impacts a high tourism penetration. This is in line with the discussion included in the literature review, where it is argued that one of the attractions of tourism is political stability. Again, this approach is used for the

economic, social and environmental indicators individually and for the average of the three indicators. As per for the following equation:

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

where ITI is an index of tourism impact, POP is the log of population, GOV is an index of governance and DUM is a dummy variable taking a value of 1 for SIS and a value of 0 for the other states. U is an error term.

It is expected that:

α_1 is negative indicating that the tourism impact increases as population gets smaller.

α_2 is positive, indicating that good governance is associated with tourism attraction.

α_3 is positive, indicating that SIS tend to be more highly impacted in the three indicators than other countries.

α_0 is a constant and no meaning is attached to it.

Again, in this case, this approach is used for the economic, social and environmental indicators individually and for the average of the three indicators.

4. RESULTS

4.1. Introduction

This section presents the results of the impact of tourism on different countries, applying the methodology described in Chapter 3. Briefly, the economic, social and environmental impacts of tourism are respectively measured by an indicator, and the three indicators are averaged to estimate the overall impacts⁵ on the state's economy, on its people and on its environment. These indicators are then compared to population size and the governance of each country.

4.2. 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).

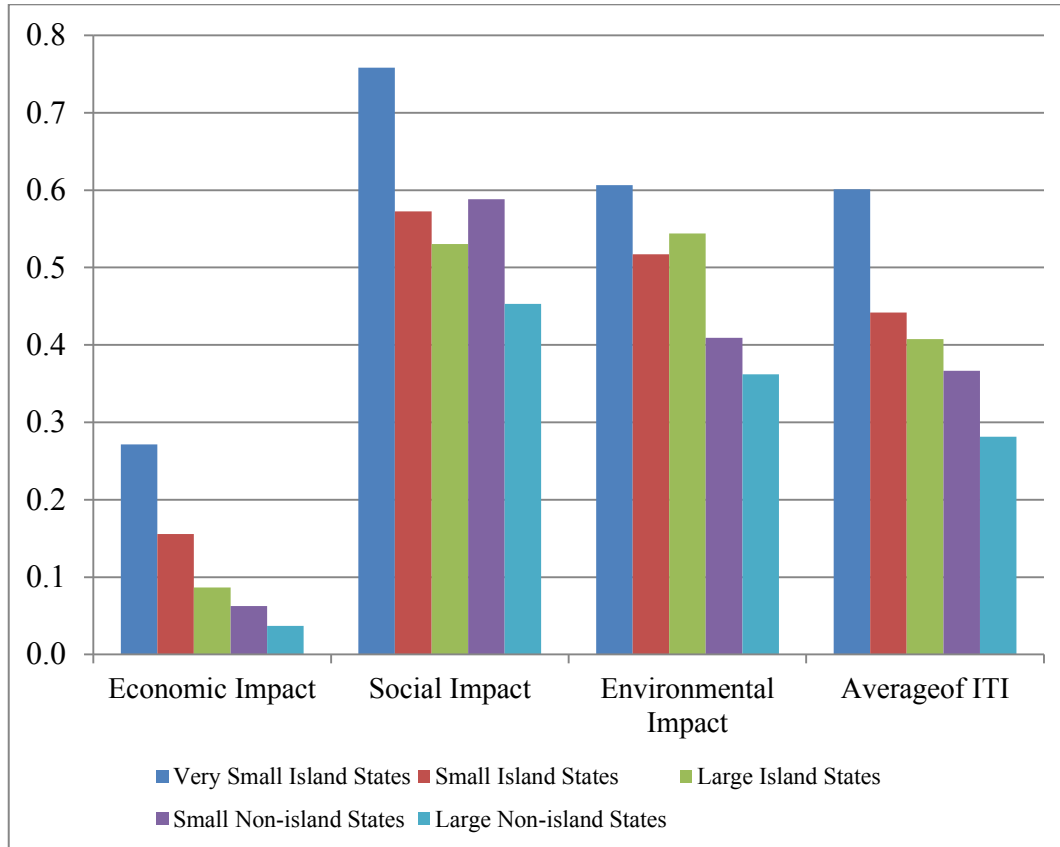
Table 1: The impact of tourism in five categories of countries.

	Economic Impact	Social Impact	Environmental Impact	Average of ITI
Very Small Island States	0.271	0.758	0.607	0.601
Small Island States	0.156	0.573	0.517	0.442
Large Island States	0.087	0.530	0.544	0.408
Small Non-island States	0.063	0.588	0.409	0.367
Large Non-island States	0.037	0.453	0.362	0.282

⁵ The classification of countries according to their impact and their average is found in Appendix 2, whilst the ranking of all countries, including their respective scores in the economic, social and environmental indicators are shown in Appendix 3.

All variables are measured as indicated in Chapter 3

Figure 1: The Impacts of Tourism in Five Categories of Countries



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 people (5,000,000) 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.

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

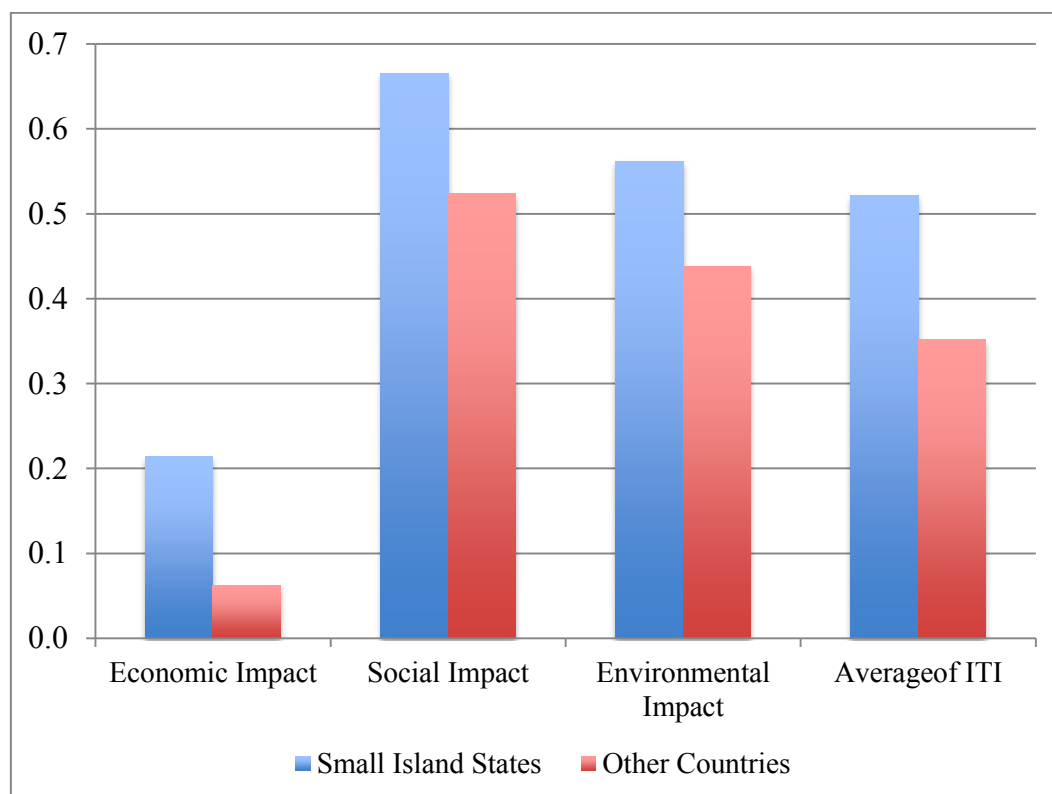
that the social pressure on such states is felt more strongly than in the other categories.

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. In Figure 2, one will see 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



4.3. Simple Regression analysis

This impact on different groups of countries is further tested by means of simple regression analysis, whereby each of the tourism impact scores is regressed on the log of population size. Most countries with a small population size are small island states. It should be noted that there are a few small states which are not islands.

The economic impact

Figure 3: Economic indicator and population size

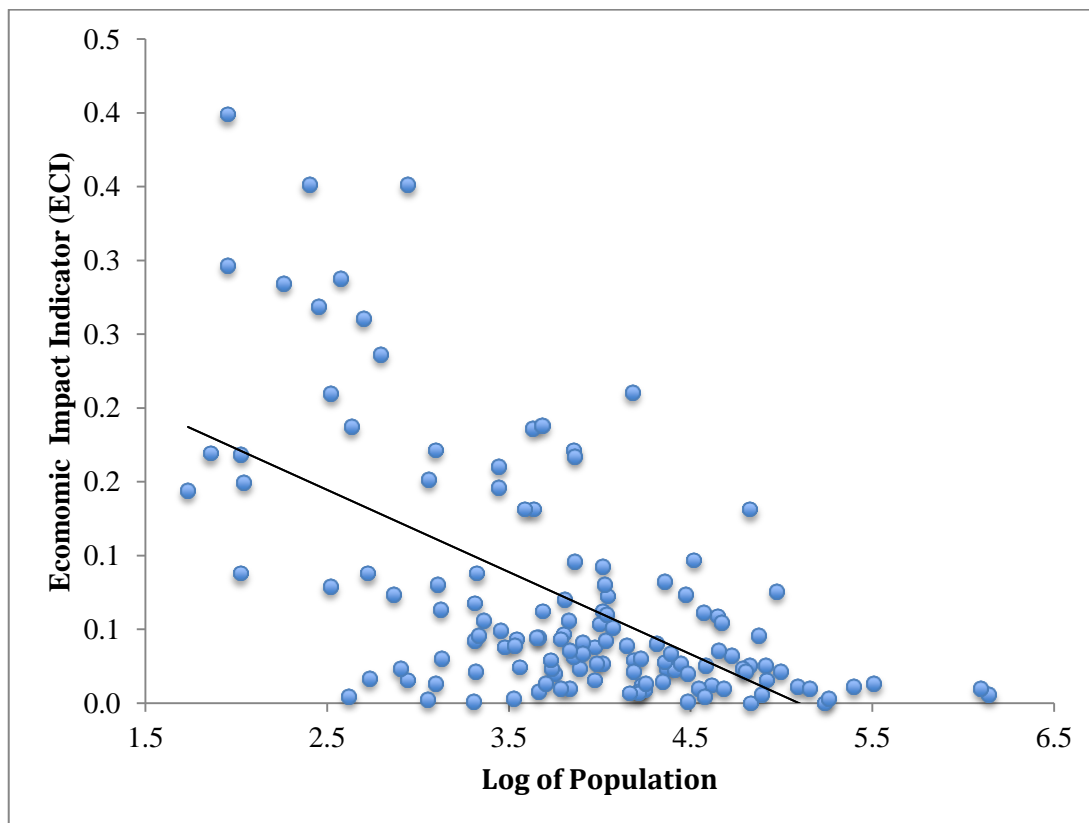


Figure 3 shows that there is a negative correlation⁶ between population size and the economic impact of tourism, indicating that there is a tendency that the economic impact is higher for small countries. There is nonetheless a wide dispersion around the trend line, revealing that there are many exceptions to this tendency.

The social impact

This indicator measures tourism pressure on society, calculated by the ratio of tourism to the population. This is used to shed light on the number of tourists that add to population pressure.

⁶ The equation for this relationship is $ECI = 0.2837 - 0.0557 \text{LogPop}$. $R^2 = 0.35$

Figure 4: Social impact and population size.

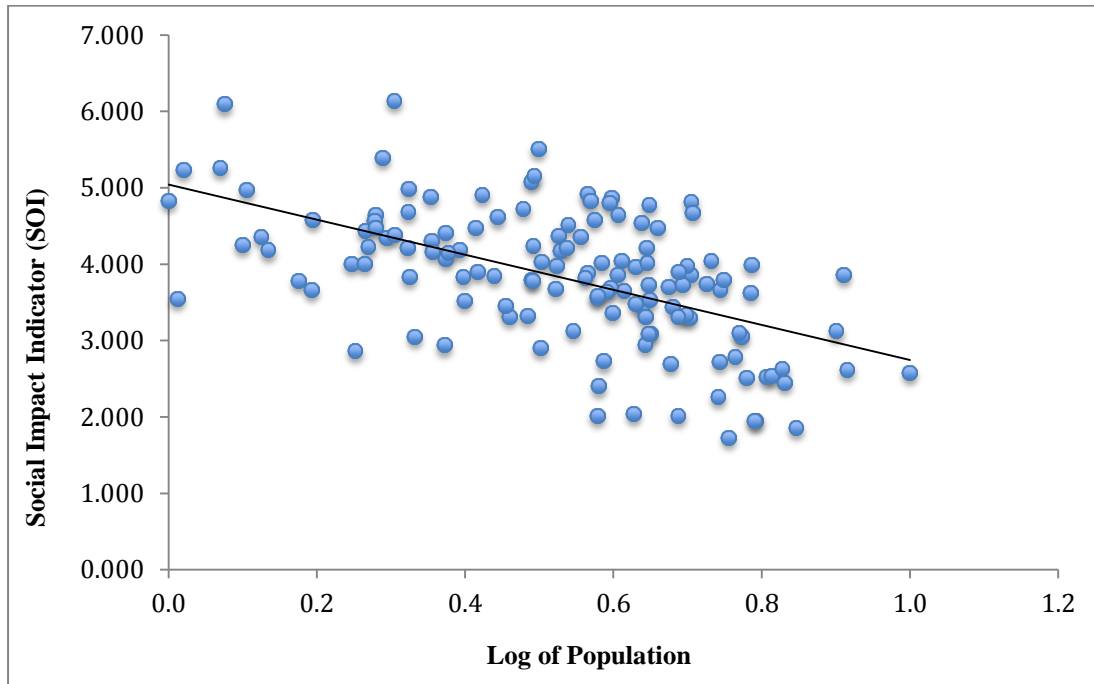


Figure 4 shows that there is a slight tendency that smaller countries are more socially affected than larger countries as the social impact is higher. Again, however, there is a widespread dispersal around the trend line for both figures, showing that there are exceptions to the tendencies.⁷

The environmental impact

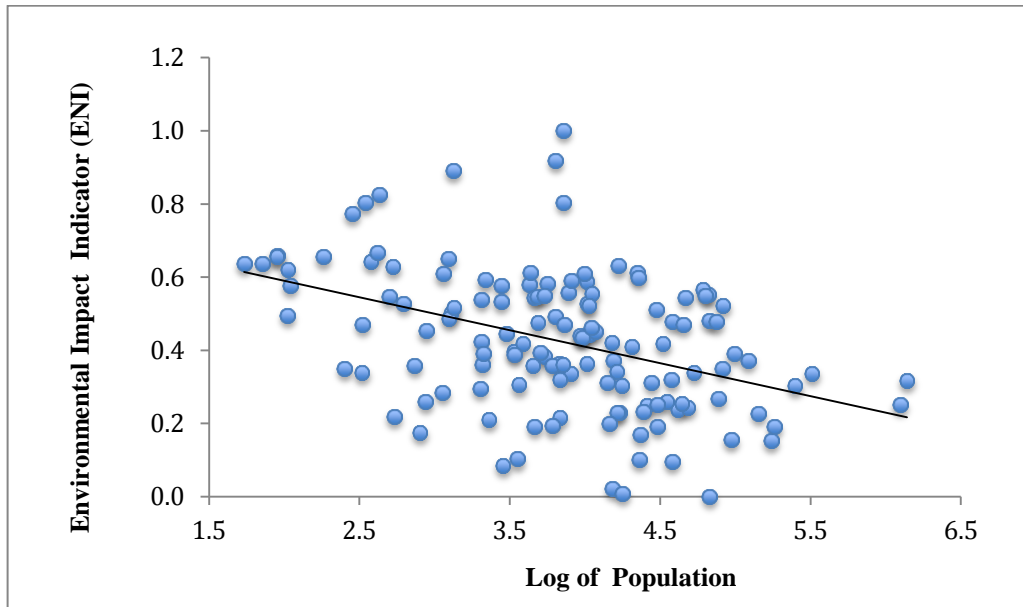
The third indicator calculates the number of tourists over land area of the respective countries. Figure 5 reveals that there is again a negative relationship between the environmental impact and population size.⁸ Smaller countries tend to have a higher

⁷ The equation for this relationship is $SOI = 5.04 - 2.29 \text{ Log POP}$; $R^2 = 0.31$

⁸ The equation for this relationship is $ENI = 0.7701 - 0.09 \text{ LogPOP}$; $R^2 = 0.18$

environmental impact. Widespread disparity around the trend lines show that there are many exceptions to this tendency.

Figure 5: Environmental indicator and population size



The Average Impact Tourism Index (ITI)

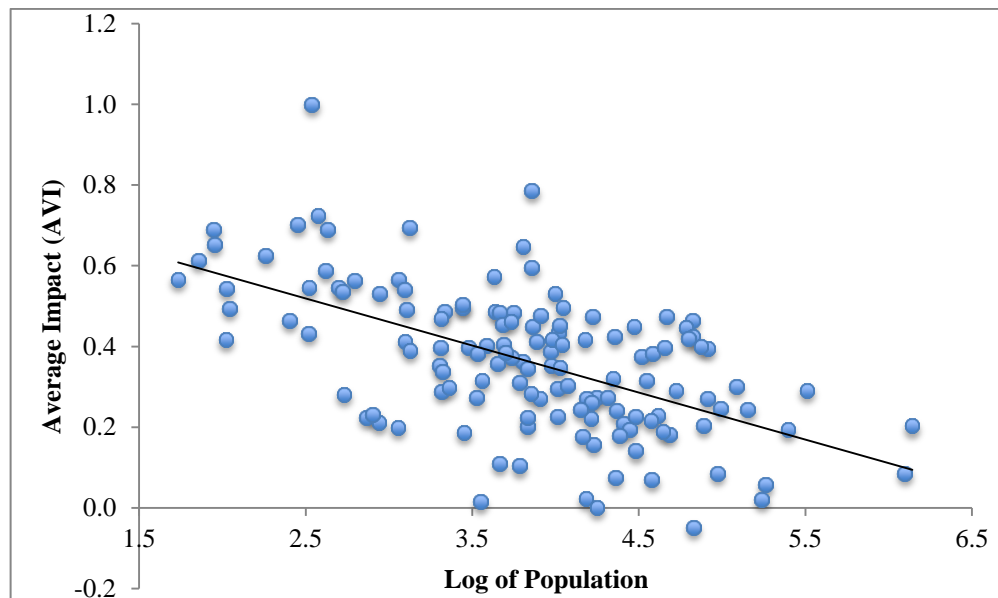
The ITI, calculated as the average of the three impact indicators are measured in different units and have been rescaled. The method chosen is the MAX/MIN formula, defined as:

$$\text{XRSI} = (\text{XI} - \text{Xmin}) / \text{Xmax} - \text{Xmin})$$

Where XRSI is the rescaled observation for country I, Xmin is the minimum value for all observations. Xmax is the maximum for all observations and Xi is the observed value.

The tendency for the average of all three indicators, as shown in figure 6, is that smaller countries are more impacted than larger countries.⁹

Figure 6: Average ITI and population size



4.4. Multiple regression analysis

The simple regression analysis presented in the previous section is not likely to be appropriate to test the hypothesis that VSIS and SIS are more highly impacted than other, larger groups of countries, since there are many other variables that affect tourism. We have identified political stability as another major factor in this regard and for this purpose political stability is included in the equation the tourism impact. In addition we have also included a dummy variable to represent small island states, by assigning a value of 1 to these states and a value of 0 to the other states.

⁹ The equation for this relationship is $AVI = 0.811 - 0.1167 \text{ Log POP}$; $R^2 = 0.33$

It is assumed that:

- (a) Small countries island states tend to have a higher impact of tourism, everything else remaining constant;
- (b) Well-governed and politically stable countries, be they small or large, island and non-island will attract more tourists than badly-governed ones, everything else remaining constant.
- (c) Among the small countries, small island states tend to be particularly impacted.

The equation is therefore specified as follows:

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

where ITI is an index of tourism impact, POP is the log of population, GOV is an index of governance and DUM is a dummy variable taking a value of 1 for SIS and a value of 0 for the other states. U is an error term.

As explained in the previous chapter we expect: $\alpha_1 < 0$; $\alpha_2 > 0$ and $\alpha_3 > 0$

The regression analysis was carried out for the three indicators and their average (ECI, SOI, ENI and AVI). The results obtained are shown in Table 2

Table 2: Results of the regression estimated coefficients

		α_0	α_1	α_2	α_3	R^2
Equation 1: Economic (ECI)	Coefficients	0.31	-0.05	-0.09	0.12	0.48
	<i>t statistics</i>	5.52	-4.57	-2.65	4.58	
Equation 2: Social (SOI)	Coefficients	0.56	-0.08	0.43	- 0.0009	0.48
	<i>t statistics</i>	4.89	-3.60	6.54	-0.02	
Equation 3: Environmental (ENI)	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: AVG ITI	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 most of the estimated coefficients have the right sign, and almost all of them are statistically significant at the 95% level.

The correlation coefficients are also on the high side.

In conclusion, the regression results indicate that small islands do indeed have a higher tourism impact compared with NIS, particularly those that do not experience political instability problems.

5. IMPLICATIONS AND CONCLUSIONS

5.1. Summary of Results

In this dissertation, 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 Trade 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.

5.2. Implications of the results

SIS face various economic, social and environmental challenges due to their size and location. If it is true that SIS tend to be highly dependent on tourism, as indicated by

their economic indicator in this study's results, this suggests that they derive economic benefits due to the revenue from tourism and the employment it generates.

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, 1990). 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. There are serious bottlenecks relating to governance in many small island countries. Practices of bad governance not only adversely affect economic performance, but also weaken the ability of a country to withstand external shocks (Reddy, 2006). In the context of tourism, good governance is crucial for attracting visitors, as facts like political instability create a negative impression, portraying a particular country as unsafe to visit.

In conclusion, the main deduction of this dissertation 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. In order to thrive economically in the industry, SIS carry the burden of heavy strains on their people and the depletion of scarce resources and land space.

5.3. Further research

In writing this dissertation, the author encountered various problems, mostly due to absence of data. Also, when data was available, there were inconsistent measurements. For this reason, we had to exclude a number of countries and the sample consisted of 136 countries out of 180 independent countries. Our sample excluded some small islands states for which data was not available. This gap in data, if filled, would enable further research on this subject.

Also, it would be useful if the indicators are refined further. For example, the social impact in this study was simply the ratio of tourism to the population. This can be refined by weighting the index by region density, given that tourists are not spread equally over different regions of countries.

Likewise, the environmental impact can be refined to assess the damage that tourism causes on the environment. Another area of research could focus more deeply while certain islands do not attract tourists – this study tries to associate this with bad governance, however, the results are not conclusive.

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APPENDICES

Appendix 1: Classification of countries (data from The World Bank, 2016).

1a. Very small island states classified by population in ascending order

No.	Type	Country	Population (000s)
1	VSIS	Saint Kitts and Nevi	54.19
2	VSIS	Dominica	72.00
3	VSIS	Seychelles	89.17
4	VSIS	Antigua and Barbuda	89.99
5	VSIS	Tonga	105.32
6	VSIS	Grenada	105.90
7	VSIS	Saint Vincent/Grenadines	110.00
8	VSIS	St Lucia	182.27
9	VSIS	Vanuatu	252.76
10	VSIS	Barbados	284.64
11	VSIS	Iceland	329.54
12	VSIS	Belize	331.90
13	VSIS	Maldives	345.02
14	VSIS	Bahamas	377.37
15	VSIS	Malta	429.00
16	VSIS	Cape Verde	498.90

1b. Small island states classified by population in ascending order

No.	Type	Country	Population (000s)
1	SIS	Comoros	734.92
2	SIS	Fiji	881.07
3	SIS	Cyprus	1141.00
4	SIS	Mauritius	1244.40
5	SIS	Trinidad & Tobago	1341.15

1c. Large island states classified by population in ascending order

No.	Type	Country	Population (000s)
1	LSIS	Jamaica	2783.89
2	LSIS	Singapore	6399.00
3	LSIS	Dominican Republic	10403.76
4	LSIS	Taiwan	22684.00
5	LSIS	Madagascar	22924.85

1d. Small non-island states classified by population in ascending order

No.	Type	Country	Population (000s)
1	SNIS	Brunei Darussalam	417.78
2	SNIS	Luxembourg	530.38
3	SNIS	Suriname	539.28
4	SNIS	Montenegro	621.38
5	SNIS	Guyana	799.61
6	SNIS	Djibouti	872.93
7	SNIS	Timor-Leste	1132.88
8	SNIS	Swaziland	1249.51
9	SNIS	Estonia	1287.25
10	SNIS	Bahrain	1332.17
11	SNIS	Botswana	2021.14
12	SNIS	Latvia	2050.32
13	SNIS	Slovenia	2060.00
14	SNIS	Lesotho	2074.47
15	SNIS	Macedonia	2107.16
16	SNIS	Qatar	2168.67
17	SNIS	Namibia	2303.32
18	SNIS	Albania	2774.00
19	SNIS	Mongolia	2839.07
20	SNIS	Lithuania	3016.93
21	SNIS	Kuwait	3368.57
22	SNIS	Uruguay	3407.06
23	SNIS	Moldova	3559.00
24	SNIS	Oman	3632.44
25	SNIS	Panama	3864.17
26	SNIS	Croatia	4289.71
27	SNIS	Georgia	4340.90
28	SNIS	New Zealand	4505.76
29	SNIS	Central African Repu	4616.42
30	SNIS	Ireland	4627.17
31	SNIS	Lebanon	4821.97
32	SNIS	Costa Rica	4872.17

1e. Large non-island states classified by population in ascending order

No.	Type	Country	Population (000s)
1	LNIS	Norway	5042.67
2	LNIS	Slovakia	5411.74
3	LNIS	Finland	5426.32
4	LNIS	Denmark	5619.10
5	LNIS	Nicaragua	6080.48
6	LNIS	Sierra Leone	6092.00
7	LNIS	El Salvador	6340.45
8	LNIS	Lao People's Dem. Re	6769.73
9	LNIS	Paraguay	6802.30
10	LNIS	Togo	6816.98
11	LNIS	Serbia	7164.00
12	LNIS	Hong Kong SAR	7203.84
13	LNIS	Bulgaria	7222.94
14	LNIS	Jordan	7273.80
15	LNIS	Israel	7733.14
16	LNIS	Honduras	8097.69
17	LNIS	Switzerland	8114.76
18	LNIS	Belarus	9356.68
19	LNIS	Azerbaijan	9413.42
20	LNIS	Sweden	9571.11
21	LNIS	Hungary	9954.94
22	LNIS	Haiti	10317.46
23	LNIS	Benin	10323.47
24	LNIS	Portugal	10608.16
25	LNIS	Czech Republic	10702.20
26	LNIS	Tunisia	10996.52
27	LNIS	Greece	11127.99
28	LNIS	Rwanda	11776.52
29	LNIS	Senegal	14133.28
30	LNIS	Zambia	14538.64
31	LNIS	Cambodia	15135.17
32	LNIS	Mali	15301.65
33	LNIS	Guatemala	15468.20
34	LNIS	Malawi	16362.57
35	LNIS	Kazakhstan	16440.59
36	LNIS	Netherlands	16759.23
37	LNIS	Burkina Faso	16934.84
38	LNIS	Chile	17619.71
39	LNIS	Niger	17831.27
40	LNIS	Sri Lanka	20480.00

41	LNIS	Cameroon	22253.96
42	LNIS	Australia	23342.55
43	LNIS	Yemen	24407.38
44	LNIS	Mozambique	25833.75
45	LNIS	Nepal	27797.46
46	LNIS	Malaysia	29716.97
47	LNIS	Peru	30375.60
48	LNIS	Venezuela (Bolivaria	30405.21
49	LNIS	Morocco	33008.15
50	LNIS	Canada	35181.70
51	LNIS	Uganda	37578.88
52	LNIS	Sudan	37964.31
53	LNIS	Poland	38216.64
54	LNIS	Argentina	41446.25
55	LNIS	Kenya	44353.69
56	LNIS	Ukraine	45238.81
57	LNIS	Spain	46770.00
58	LNIS	Colombia	48321.41
59	LNIS	South Africa	52980.00
60	LNIS	Italy	60990.28
61	LNIS	United Kingdom	63384.17
62	LNIS	France	66545.35
63	LNIS	Thailand	67010.50
64	LNIS	Congo Dem Rep	67513.68
65	LNIS	Turkey	74932.64
66	LNIS	Iran (Islamic Republ	77447.17
67	LNIS	Egypt	82056.38
68	LNIS	Germany	82726.63
69	LNIS	Ethiopia	94100.76
70	LNIS	Philippines	98393.57
71	LNIS	Mexico	122332.40
72	LNIS	Russian Federation	142833.69
73	LNIS	Nigeria	173615.35
74	LNIS	Pakistan	182142.59
75	LNIS	Indonesia	249865.63
76	LNIS	United States	323845.66
77	LNIS	India	1252139.60
78	LNIS	China	1385566.54

Appendix 2: Classification of countries with impact results (data from The World Bank, 2016).

With the ratio of tourism expenditure over GDP (indicator 1), the ratio of visitors over the population and the ratio of number of tourists over land area (indicator 3) and their overall average in ascending order according to category.

2a. Very Small Island States and impact indicators

No.	Type	Country	Re-scaled indicator 1	Re-scaled indicator 2	Re-scaled indicator 3	Average ITI
1	VSIS	Antigua and Barbuda	0.297	0.792	0.659	0.583
2	VSIS	Bahamas	0.288	1.000	0.667	0.651
3	VSIS	Barbados	0.269	0.831	0.772	0.624
4	VSIS	Belize	0.210	0.807	0.470	0.495
5	VSIS	Cape Verde	0.261	0.677	0.547	0.495
6	VSIS	Dominica	0.169	0.846	0.637	0.551
7	VSIS	Grenada	0.168	0.687	0.622	0.493
8	VSIS	Iceland	0.079	0.779	0.340	0.399
9	VSIS	Maldives	1.000	0.813	0.803	0.872
10	VSIS	Malta	0.187	0.828	0.824	0.613
11	VSIS	Saint Kitts and Nevi	0.144	0.755	0.636	0.512
13	VSIS	Saint Vincent/Grenadines	0.149	0.627	0.576	0.451
14	VSIS	Seychelles	0.399	0.790	0.654	0.614
12	VSIS	St Lucia	0.284	0.741	0.654	0.560
15	VSIS	Tonga	0.088	0.578	0.495	0.387
16	VSIS	Vanuatu	0.351	0.580	0.349	0.427

2b. Small island states and impact indicators

No.	Type	Country	Re-scaled indicator 1	Re-scaled indicator 2	Re-scaled indicator 3	Average ITI
5	SIS	Comoros	0.074	0.252	0.358	0.228
4	SIS	Cyprus	0.152	0.773	0.609	0.511
3	SIS	Fiji	0.351	0.643	0.453	0.482
2	SIS	Mauritius	0.172	0.650	0.649	0.491
1	SIS	Trinidad & Tobago	0.030	0.546	0.518	0.364

2c. Large island states and impact indicators

No.	Type	Country	Re-scaled indicator 1	Re-scaled indicator 2	Re-scaled indicator 3	Average ITI
1	LSIS	Dominican Republic	0.093	0.584	0.528	0.402
2	LSIS	Jamaica	0.161	0.639	0.577	0.459
3	LSIS	Madagascar	0.082	0.125	0.102	0.103
4	LSIS	Singapore	0.070	0.748	0.916	0.578
5	LSIS	Taiwan	0.028	0.556	0.599	0.394

2d. Small non-island states and impact indicators

No.	Type	Country	Re-scaled indicator 1	Re-scaled indicator 2	Re-scaled indicator 3	Average ITI
1	SNIS	Albania	0.146	0.680	0.533	0.453
2	SNIS	Bahrain	0.064	0.900	0.890	0.618
3	SNIS	Botswana	0.001	0.703	0.296	0.333
4	SNIS	Brunei Darussalam	0.004	0.915	0.668	0.529
5	SNIS	Central African Repu	0.008	0.193	0.020	0.074
6	SNIS	Costa Rica	0.062	0.596	0.474	0.377
7	SNIS	Croatia	0.186	0.785	0.581	0.517
8	SNIS	Djibouti	0.016	0.372	0.259	0.215
9	SNIS	Estonia	0.080	0.769	0.501	0.450
10	SNIS	Georgia	0.132	0.590	0.439	0.387
11	SNIS	Guyana	0.023	0.502	0.176	0.234
12	SNIS	Ireland	0.045	0.744	0.544	0.444
13	SNIS	Kuwait	0.003	0.399	0.398	0.267
14	SNIS	Latvia	0.042	0.643	0.425	0.370
15	SNIS	Lebanon	0.188	0.522	0.547	0.419
16	SNIS	Lesotho	0.021	0.460	0.361	0.281
17	SNIS	Lithuania	0.038	0.630	0.445	0.371
18	SNIS	Luxembourg	0.088	0.743	0.627	0.486
19	SNIS	Macedonia	0.088	0.484	0.392	0.321
20	SNIS	Moldova	0.043	0.012	0.105	0.053
21	SNIS	Mongolia	0.049	0.454	0.085	0.196
22	SNIS	Montenegro	0.236	0.764	0.529	0.510
23	SNIS	Namibia	0.056	0.599	0.211	0.288
24	SNIS	New Zealand	0.045	0.614	0.357	0.339
25	SNIS	Oman	0.025	0.578	0.305	0.302
26	SNIS	Panama	0.132	0.578	0.417	0.376
27	SNIS	Qatar	0.046	0.698	0.591	0.445
28	SNIS	Slovenia	0.068	0.687	0.539	0.431
29	SNIS	Suriname	0.017	0.587	0.219	0.274
30	SNIS	Swaziland	0.013	0.647	0.487	0.382
31	SNIS	Timor-Leste	0.002	0.332	0.286	0.207
32	SNIS	Uruguay	0.039	0.649	0.389	0.359

2e. Large non-island states and impact indicators

No.	Type	Country	Re-scaled indicator 1	Re-scaled indicator 2	Re-scaled indicator 3	Average ITI
1	LNIS	Argentina	0.012	0.444	0.237	0.231
2	LNIS	Australia	0.023	0.526	0.170	0.240
3	LNIS	Azerbaijan	0.038	0.523	0.440	0.334
4	LNIS	Belarus	0.016	0.630	0.441	0.362
5	LNIS	Benin	0.027	0.246	0.244	0.172
6	LNIS	Bulgaria	0.096	0.704	0.518	0.439
7	LNIS	Burkina Faso	0.012	0.269	0.230	0.170
8	LNIS	Cambodia	0.211	0.528	0.422	0.387
9	LNIS	Cameroon	0.014	0.293	0.225	0.178
10	LNIS	Canada	0.010	0.638	0.260	0.303
11	LNIS	Chile	0.009	0.492	0.302	0.267
12	LNIS	China	0.006	0.304	0.318	0.209
13	LNIS	Colombia	0.010	0.323	0.238	0.190
14	LNIS	Congo Dem Rep	0.000	0.000	0.000	0.000
15	LNIS	Czech Republic	0.042	0.503	0.442	0.329
16	LNIS	Denmark	0.020	0.725	0.583	0.443
17	LNIS	Egypt	0.026	0.423	0.351	0.266
18	LNIS	El Salvador	0.047	0.490	0.306	0.281
19	LNIS	Ethiopia	0.076	0.105	0.155	0.112
20	LNIS	Finland	0.023	0.648	0.382	0.351
21	LNIS	France	0.026	0.704	0.563	0.431
22	LNIS	Germany	0.016	0.565	0.523	0.368
23	LNIS	Greece	0.072	0.732	0.555	0.453
24	LNIS	Guatemala	0.029	0.392	0.373	0.265
25	LNIS	Haiti	0.062	0.265	0.362	0.230
26	LNIS	Honduras	0.041	0.417	0.337	0.265
27	LNIS	Hong Kong SAR	0.172	0.911	1.000	0.694

28	LNIS	Hungary	0.054	0.786	0.608	0.483
29	LNIS	India	0.010	0.075	0.248	0.111
30	LNIS	Indonesia	0.011	0.289	0.303	0.201
31	LNIS	Iran (Islamic Republ	0.006	0.353	0.265	0.208
32	LNIS	Israel	0.023	0.565	0.554	0.381
33	LNIS	Italy	0.023	0.648	0.566	0.413
34	LNIS	Jordan	0.167	0.606	0.469	0.414
35	LNIS	Kazakhstan	0.008	0.537	0.229	0.258
36	LNIS	Kenya	0.059	0.279	0.253	0.197
37	LNIS	Lao People's Dem. Re	0.056	0.562	0.363	0.327
38	LNIS	Malawi	0.007	0.322	0.342	0.224
39	LNIS	Malaysia	0.074	0.660	0.536	0.423
40	LNIS	Mali	0.021	0.134	0.022	0.059
41	LNIS	Mexico	0.011	0.488	0.373	0.291
42	LNIS	Morocco	0.097	0.539	0.418	0.351
43	LNIS	Mozambique	0.022	0.373	0.250	0.215
44	LNIS	Nepal	0.027	0.265	0.313	0.202
45	LNIS	Netherlands	0.030	0.645	0.630	0.435
46	LNIS	Nicaragua	0.043	0.491	0.359	0.298
47	LNIS	Niger	0.013	0.100	0.008	0.040
48	LNIS	Nigeria	0.000	0.020	0.152	0.057
49	LNIS	Norway	0.013	0.675	0.394	0.361
50	LNIS	Pakistan	0.003	0.069	0.191	0.088
51	LNIS	Paraguay	0.010	0.397	0.216	0.208
52	LNIS	Peru	0.020	0.414	0.252	0.229
53	LNIS	Philippines	0.021	0.324	0.391	0.245
54	LNIS	Poland	0.026	0.574	0.479	0.360
55	LNIS	Portugal	0.080	0.645	0.521	0.415
56	LNIS	Russian Federation	0.010	0.493	0.227	0.243
57	LNIS	Rwanda	0.051	0.374	0.451	0.292
58	LNIS	Senegal	0.039	0.377	0.312	0.243
59	LNIS	Serbia	0.031	0.439	0.360	0.277
60	LNIS	Sierra Leone	0.010	0.176	0.193	0.126
61	LNIS	Slovakia	0.029	0.693	0.550	0.424
62	LNIS	South Africa	0.032	0.478	0.339	0.283
63	LNIS	Spain	0.055	0.707	0.545	0.435
64	LNIS	Sri Lanka	0.040	0.355	0.410	0.268
65	LNIS	Sudan	0.004	0.194	0.096	0.098
66	LNIS	Sweden	0.027	0.699	0.435	0.387
67	LNIS	Switzerland	0.033	0.688	0.591	0.437
68	LNIS	Thailand	0.132	0.569	0.481	0.394
69	LNIS	Togo	0.036	0.324	0.319	0.226
70	LNIS	Tunisia	0.060	0.611	0.462	0.378
71	LNIS	Turkey	0.046	0.597	0.477	0.373
72	LNIS	Uganda	0.061	0.278	0.320	0.220
73	LNIS	Ukraine	0.036	0.606	0.469	0.370
74	LNIS	United Kingdom	0.021	0.594	0.549	0.388
75	LNIS	United States	0.013	0.499	0.336	0.283
76	LNIS	Venezuela (Bolivaria	0.001	0.279	0.192	0.157
77	LNIS	Yemen	0.033	0.305	0.231	0.190
78	LNIS	Zambia	0.007	0.356	0.199	0.187

Appendix 3: List of countries according to ITI rank

Type	Country	Rank
VSIS	Maldives	1
LNIS	Hong Kong SAR	2
VSIS	Bahamas	3
VSIS	Barbados	4
SNIS	Bahrain	5
VSIS	Seychelles	6
VSIS	Malta	7
VSIS	Antigua and Barbuda	8
LSIS	Singapore	9
VSIS	St Lucia	10
VSIS	Dominica	11
SNIS	Brunei Darussalam	12
SNIS	Croatia	13
VSIS	Saint Kitts and Nevi	14
SIS	Cyprus	15
SNIS	Montenegro	16
VSIS	Belize	17
VSIS	Cape Verde	18
VSIS	Grenada	19
SIS	Mauritius	20
SNIS	Luxembourg	21
LNIS	Hungary	22
SIS	Fiji	23
LSIS	Jamaica	24
SNIS	Albania	25
LNIS	Greece	26
VSIS	Saint Vincent/Grenadines	27
SNIS	Estonia	28
SNIS	Qatar	29
SNIS	Ireland	30
LNIS	Denmark	31
LNIS	Bulgaria	32
LNIS	Switzerland	33
LNIS	Spain	34
LNIS	Netherlands	35
SNIS	Slovenia	36
LNIS	France	37
VSIS	Vanuatu	38
LNIS	Slovakia	39
LNIS	Malaysia	40
SNIS	Lebanon	41

LNIS	Portugal	42
LNIS	Jordan	43
LNIS	Italy	44
LSIS	Dominican Republic	45
VSIS	Iceland	46
LSIS	Taiwan	47
LNIS	Thailand	48
LNIS	United Kingdom	49
VSIS	Tonga	50
LNIS	Sweden	51
LNIS	Cambodia	52
SNIS	Georgia	53
SNIS	Swaziland	54
LNIS	Israel	55
LNIS	Tunisia	56
SNIS	Costa Rica	57
SNIS	Panama	58
LNIS	Turkey	59
SNIS	Lithuania	60
LNIS	Ukraine	61
	Latvia	62
LNIS	Germany	63
SIS	Trinidad & Tobago	64
LNIS	Belarus	65
LNIS	Norway	66
LNIS	Poland	67
SNIS	Uruguay	68
LNIS	Morocco	69
LNIS	Finland	70
SNIS	New Zealand	71
LNIS	Azerbaijan	72
SNIS	Botswana	73
LNIS	Czech Republic	74
LNIS	Lao People's Dem. Re	75
SNIS	Macedonia	76
LNIS	Canada	77
SNIS	Oman	78
LNIS	Nicaragua	79
LNIS	Rwanda	80
LNIS	Mexico	81
SNIS	Namibia	82
LNIS	South Africa	83
LNIS	United States	84
LNIS	El Salvador	85
SNIS	Lesotho	86
LNIS	Serbia	87
SNIS	Suriname	88
LNIS	Sri Lanka	89
LNIS	Chile	90
SNIS	Kuwait	91

LNIS	Egypt	92
LNIS	Honduras	93
LNIS	Guatemala	94
LNIS	Kazakhstan	95
LNIS	Philippines	96
LNIS	Russian Federation	97
LNIS	Senegal	98
LNIS	Australia	99
SNIS	Guyana	100
LNIS	Argentina	101
LNIS	Haiti	102
LNIS	Peru	103
SIS	Comoros	104
LNIS	Togo	105
LNIS	Malawi	106
LNIS	Uganda	107
SNIS	Djibouti	108
LNIS	Mozambique	109
LNIS	China	110
LNIS	Iran (Islamic Republ	111
LNIS	Paraguay	112
SNIS	Timor-Leste	113
LNIS	Nepal	114
LNIS	Indonesia	115
LNIS	Kenya	116
SNIS	Mongolia	117
LNIS	Colombia	118
LNIS	Yemen	119
LNIS	Zambia	120
LNIS	Cameroon	121
LNIS	Benin	122
LNIS	Burkina Faso	123
LNIS	Venezuela (Bolivaria	124
LNIS	Sierra Leone	125
LNIS	Ethiopia	126
LNIS	India	127
LSIS	Madagascar	128
LNIS	Sudan	129
LNIS	Pakistan	130
SNIS	Central African Repu	131
LNIS	Mali	132
LNIS	Nigeria	133
SNIS	Moldova	134
LNIS	Niger	135
LNIS	Congo Dem Rep	136

