



JÖNKÖPING UNIVERSITY
International Business School

The Effect of Tourism on GDP

BACHELOR THESIS WITHIN: *International
Economics*

NUMBER OF CREDITS: *15 credits*

PROGRAMME OF STUDY: **International
Economics**

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JÖNKÖPING August 2018

Bachelor's Degree Project in Economics

Title: The Effect of Tourism on GDP
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Date: 2018-08-30

Key terms: International economics, Tourism, GDP, GDP per capita, Cross-section study

Abstract

International tourism plays a huge role for many countries in the world. The significance of tourism differs between countries, however increase in tourism tends to lead to gross domestic product growth. The purpose of this paper is to measure those general effects of tourism on gross domestic product per capita. The theory part is focused on determinants of economic growth and GDP and the literature review examines general effects of tourism as well as the effect of tourism on specific countries and regions. The data is cross sectional and was gathered from 111 countries provided by World Bank. The results of this thesis show that international tourism seems to have positive relation with the level of gross domestic product per capita. However, the study also found that tourism specialisation tends to have negative relation on level of gross domestic product per capita and that countries that are most specialised in tourism are quite small states, usually located in the Caribbean Sea.

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1. Introduction

The causes of economic growth vary greatly depending on the country in question. The development of various sectors might be the cause of increasing economic level, although the development is closely connected to the host countries' resources. An interesting sector to examine in relation to economic growth is tourism, as it is dependent on individuals who earn wages in a specific country yet choose to spend their disposable income in other countries. The tourism sector has become important in many countries. Rapid expansion of international tourism has made it a key income source to develop newly industrialised countries (Dwyer & Forsyth, 2016).

Millions of people travel each year to various destinations all over the world in order to relax, explore and spend time with fellow travellers (Economic Impact World, 2018). Those destinations are often heavily dependent on the revenues that tourism enables. The vastly globalising world has provided new tourism destinations in all over the world, since the development of information flow and travel methods has enabled better connections all over the globe. New countries are able to benefit from people who visit them and from the money they spend. Through the revenue that tourism enables, local communities may accumulate income to the infrastructure; support industries such as the hospitality industry and promote local businesses.

Tourism is a significant source of income for so called "tourist destinations". Tourism also helps to maintain the quality of service and other aspects for those places via reputation of the location. A good reputation is extremely important for location that aim to attract tourism and thus it aids in generating revenues and keeping people employed. However, tourism can be a harm to the local environment and affect the host country negatively. Tourism fluctuates during certain seasons which can lead to overcrowding and other negative externalities such as crime, pollution and waste. Moreover, price levels can increase in the tourism destinations, because of the increased demand (Theobald, 2005).

Furthermore, tourism implements an opportunity to expand cultural affluence, awareness and expand knowledge of the world. Tourism also prevents unemployment and increases investments in host location (Dwyer, Forsyth, 2006). Countries with rich history and strong cultural heritage attracts large amounts of people and income as they may offer an unique travel destination and experience (Timothy, 2007). Countries like France, Spain, the United Kingdom and Italy are major tourism destinations in Europe, whereas Far East and eastern destinations are popular in Asia. Moreover, countries with close connection to the sea and located in warm climate zone may attract tourists especially from northern Europe since warm beach destinations offer a different environment to those living in colder climates. According to World Bank (2016), France is the most “visited” country in the world with 84.5 million international tourist arrivals.

Tourism can be separated into intra-national and inter-national, depending on whether tourism occurs within or outside the borders. However, this study focuses on inter-national tourism, hence tourism between countries. Tourism can also be separated to various types according to what is the main purpose of the trip, such as leisure and business trips. According to Global economic impact and issues (2017) 76.8 % of all trips made were leisure travel and 23.2% business travel. According to World Travel & Tourism council, travel and tourism contributes 8.3 trillion US dollars in revenue, which is 10.4% of global GDP. Travel and tourism area covers 313 million jobs and huge 882 billion-dollar investments. The sector increases 4.6% in 2017 comparing the just 3% growth in global economy (Economic Impact World, 2018). Hence, the considerable importance, relevance and size of the industry makes this an important topic of study and it contributes to the specific purpose of my research.

It is widely accepted that tourism plays a significant role in many countries’ economic situations, as it often is one of the main industries in terms of size. The significance of the tourism industry globally has granted plenty of different studies on tourism. Currently most of the studies have attempted to answer underlying questions using small datasets covering countries dependent on tourism. However, there is a lack of studies that analyse the international tourism flows globally, with the most focusing on specific case studies revolving around individual countries (Culiuc, 2014).

The purpose of this thesis is to examine the relation between tourism and gross domestic product per capita via cross sectional study, using as many countries as possible. The impact of tourism is here examined in economic terms. As there may be various reasons for economic growth in different countries, closely examining the interesting aspect of tourism can unveil one of those reasons. Tourism as a topic of interest is particularly compelling as it requires success from two parties, the tourist's willingness to travel and spend disposable income as well as the specific attractiveness of the destination. The contribution to the topic is to present results on whether tourism is related positively to gross domestic product per capita and are countries specialised on tourism more positively or negatively linked to GDP per capita. The purpose and the relevance of the research leads to the following research questions: Is international tourism significantly linked to positive increase of GDP per capita? The results concluded that this was the case.

By researching literature, second hand data, articles, online resources, and other data on tourism and its effects I will provide the foundation, followed by a regression analysis. The data used will be cross sectional data. The thesis will be based on quantitative data from secondary sources, such as from World Bank. The empirical part of the thesis will be formed from the secondary data and I will provide a model and run the analysis. Before using a source, I first consider if the data is reliable, relevant and objective, before forming my own analysis on it. The literature review includes literature on GDP, economic growth, tourism and its economic impact. After that I will provide outline of methodology, analysis of the data, results, analyse part and the conclusion.

2. Literature review

In this chapter I will provide the key literature on the topics in question. Firstly, I will start with the concept GDP and economic growth, before examining sectors that contribute to it and the underlying mechanism between tourism and GDP. Then I will look closer to tourism, finding relevant theories and models. After, I will focus on country studies on the

topic that explores specific regions and countries. Lastly, I will formulate the hypothesis tested on the empirical part.

2.1 GDP & economic growth

The gross domestic product measures of all the value of final goods and services produced within the country, normally for one year. It is the sum of total output generated within the country borders. There are few different approaches how GDP is viewed, for example the sum of all the compensation for the employees and the surplus of the companies, also the consumptions made by households, companies, government and tourists. It essentially is a measurement for displaying the value of all the economic activity produced by a single area, which is usually within a country's borders (Callen, 2017).

Economic growth is a process where steady increase of goods and services that the economy can produce occurs, hence growth in aggregate productivity traditionally measured in terms of gross domestic product (GDP). Growth rates between countries depend initially on each country's existing level out output. Poor countries would tend to grow faster per capita than rich countries, since a country's growth rate tends to be more sensitive to its initial level of per capita output, hence the greater its initial level of human capital (Barro, 2001).

2.2 Economic growth determinants

Cooper and Barro (1997) conducted research on general determinants of GDP growth across countries and found that improved living standards through higher initial schooling and life expectancy, lower fertility, lower government consumption, stronger institutions, lower inflation, and improvements in the terms of trade were all variables that directly could be linked to GDP growth. Countries with already high levels of political freedom and real per capita GDP would have lower benefits related to improvements in any of the variables (Cooper & Barro, 1997).

Moreover, Barro (2001) states that human capital and education are important determinants of economic growth. He declares that economic growth is positively related to starting level of average school attainment at secondary and higher levels. He found that different instrumental variables were significant on his research such as total years of schooling, pupil-teacher ratios and dropout rates (Barro, 2001).

Furthermore, according to Solow (1956), national output is produced through two factors of production, capital and labour. He also highlights importance of the technological change, real wage and national saving's rate. Solow argues that country's permanent economic growth is achieved mainly through technological progress. Moreover, poor countries tend to grow faster than rich countries, due to the lags of diffusion on knowledge and the fact that normally they have not reached their steady states (Solow, 1956).

Moreover, international trade tends to have significant effect to country's economic growth and GDP (Dowrick, 2004). However, paper states that specialization in primary exports is bad for growth. Trade openness benefits mostly the rich economies and only little for less developed economies. He found that most of the benefits of trade are attained via productivity growth (Dowrick, 2004). Frankel and Rose (2002) found in his study that one percent of increase in country's overall trade (relative to GDP) increases gross domestic product per capita by one third of a percent. Hence, trade openness seems to have a significant effect on GDP per capita (Frankel & Rose, 2002).

Asheghian (2016) states that the major determinants for the GDP per capita growth were value added growth and domestic investment growth. According to this study, there was no causal relationship found between foreign direct investment (FDI) and GDP per capita growth. This implies that GDP growth for countries is a process from within, with focus on dependant on domestic variables rather than foreign (Asheghian, 2016). However, Agraval and Khan (2011) disagree and state that FDI can have a significant contribution to positive increase in economic growth in the country if its employed correctly. Weber (2011) also states that FDI is one of the main drivers in economic growth in his Eastern Europe study.

2.3 Underlying mechanism between Tourism and GDP

Brau et al (2007) discuss the effects of tourism countries through underlying mechanisms in their work. They stated that allocation of labor is one of these mechanisms, hence when a country faces higher relative endowment of natural resources, it allocates more labor into the tourism sector and comparative advantage in tourism is obtained (Brau et al, 2007). According to them, relative value of tourism services grows over time, hence they develop at a lower rate. They concluded that the underlying mechanism indicates a tourism-led high steady-state growth of a sustainable nature. Instead of physical expansion, the growth is driven by increasing appreciation of tourism services (Brau et al, 2007).

Dwyer et al (2000) stated in their study that effects of tourism to the host country could be described as “injection of new money”. There are three types of such impacts: direct, indirect and induced. The direct impact reflects as an increased sales revenue. Indirect impact means direct supplies that consume inputs from other firms in the region. Induced impact happens when recipients of the direct and indirect expenditure spend their increased incomes. This sets off a process of multiple purchases by firms, that increases GDP and employment (Dwyer et al, 2000).

Furthermore, Dwyer et al (2000) stated that the impact of increased tourism on income depends on many factors. These key mechanisms that determine the magnitude of economic contribution are such as: factor supply constraints, exchange rate appreciation and current government economic policy. According Dwyer et al (2000), through factor supply constraints, the tourist industry increases its output by adding labor, land, capital plant and equipment. This leads to increasing labor demand for the tourism sector and increases wage rates. Also, the price level increase attracts more resources into the tourism sector and additional land is required for capital infrastructure, such as hotels, roads and airports. Hence, provision of infrastructure could be considered a key mechanism between tourism and economic level.

2.4 Literature on tourism

Dwyer (2006) states that tourism is not a new branch of economics, but rather an industry or sector which applies developments in general economics. In this respect tourism is like any other industry. Dwyer also state that tourism economics draws in several branches of economics and econometrics such as demand modelling, taxation theory, environment economics, human capital theory, industrial organisation, trade theory and general equilibrium modelling (2006). According to Dwyer and Forsyth (2006), tourism is also looked at as a traded service. Many countries have tourism as their most traded export and import. Moreover, Tohidy and Ardahaey (2011) examine the general economic impact of tourism industry. They state that tourism can be viewed as a bundle of goods and services joint together with a fixed proportion. According to them, tourism cannot be viewed as an industry per se, but instead a collection of interrelated industries that supplies products not only for tourist but for other customers as well such as hotels, travel agents, airlines among others.

According to Culiuc (2014), macroeconomic variables and economic ties have a significant impact on tourism arrivals. The elasticities of bilateral tourism linked to the GDP of the origin and destination country is extensive, however smaller than the good and services trade (Culiuc, 2014). Culiuc (2014) states that stronger the trade ties with the country, the stronger the tourism flows. This however can be explained by the number of business trips made between the countries. The real exchange relates also positively, hence appreciation of the origin's currency increase the bilateral tourism while vies versa if the same happens to the destination country's currency.

Holzner (2011) studied the Dutch Disease effect in tourism dependent countries in the long run. Dutch disease is economic situation when increase of specific sector affects another sectors negatively. He gathered data from 134 countries during the period of 1970-2007. He found that there is no danger regarding the phenomenon and also that tourism dependent countries are not facing real exchange distortion and deindustrialisation, however there is evidence that tourist dependent countries face higher than average economic growth rates (Holzner, 2011). Similarly, Bojanic and Lo (2016) studied how tourism effects economic development using all of the countries that report tourism and economic data. They state

that tourism reliance has a moderating outcome on the relationship between tourism development and economic level for all countries, but mostly at higher stages of economic development. The result was supported by the work by Skerritt and Huybers (2005). They studied the same subject using an aggregate production function framework and marginal factor productivity between tourism sector and rest of the economy. Their sample was 37 developing economies and the results showed the same that Bojanic and Lo found.

Furthermore, Lee and Chang (2008) examined the causal relationship between tourism development and economic growth for OECD and non-OECD countries throughout the years 1990-2002. They focused in their paper to panel cointegration technique to re-investigate the long run co-movements. Additionally, on world scale, a cointegrated relationship between GDP and tourism development was proved. They stated that tourism development in non-OECD countries was superior. The paper also proved that the greatest impact among the researched nations was in Sub Sahara countries, when using tourism receipts as a variable. For the long run effect, Lee and Chang (2008) found that the panel causality test proved that there was unidirectional relationship from tourism development to economic growth in OECD countries. The relationship between non-OECD countries was bidirectional, although, only weak relationships were found in Asia.

Dwyer, Forsyth and Spurr (2003) estimate the economic impact of tourism with regard to growth and special events. They found expenditures made by international tourists increases GDP, economic growth and employment, while also supporting the allocation of scarce resources in host country. However, Industrial structure and the proportion of the country's population that visit in and outside the country will determine the economic impacts and growth (Dwyer, Forsyth & Spurr, 2003). Furthermore, Sofronov (2017) researched the economic impact on global tourism and states that over growth over a long period in tourism sector will be significant, if the investment and development occur in open and sustainable matter. He also states that the role of tourism becomes more important, hence new country barriers emerge to trade and movement of people.

The International monetary fund published tourism paper states that all else equal, an increase of one percent in tourism revenues out of total exports contributes 0,5 percent increase in annual GDP growth. They provided the concept of tourism specialisation, meaning that the country has a large value of tourism receipts from total exports (IMF 2009).

Brau et al (2007) state that tourism has become one of the fastest growing traded good or service during last decade. They also found that countries where tourism sector is significant are growing faster than all group of countries what they have investigated. Tourism appeared to be independent determining factor for growth, since in most cases the countries were very open to trade. They also found from sample of 143 countries that countries with more than 10% GDP growth are significantly connected to tourism. Hence like previous studies they found that tourism specialization is highly correlated with economic growth the difference between previous studies was that they found that smallness per se was not a positive factor for growth according to them.

2.5 Country studies

In order to demonstrate the impact on tourism on economic growth, the connection is explored in various of examples. All these examples conclude that there was a positive effect on economic growth in separate studies. Narayan (2004) aimed to delineate the long run impact of 10% growth in tourist expenditure on its economy. He found that in Fiji's economy, the tourism growth will increase GDP by 0.5% by using computable general equilibrium model (Narayan, 2004). Furthermore, he stated that real consumption will face increase of 0.72% and real national welfare will increase 0.67% (Narayan, 2004). The effects will appreciate the exchange rate and because of the increase of domestic price level and wages the traditional exports will decline. Finally, he concluded that in Fiji's case, the increase in tourism and non-traditional exports compensate the decline in non-traditional exports produced by increase of tourism. (Narayan, 2004)

Li et al. (2013) studied the long run and short run relationship in tourism and selected macroeconomics variables and economic growth. They studied whether tourism is important factor in economic growth in Malaysia from 1974-2010. They found that in the long run almost all the variables are significant and related to economic growth. However, they showed that only government tourism expenditure is positively correlated to economic growth (Li, Mahmood, Abdullah & Chuan, 2013). Furthermore, Jin (2011) studied the economic impact of tourism on the economic growth in Honk Kong. He states that tourism boost economic growth, there was no proof of a long-time effect (Jin,2011). Moreover, Ma

et al. (2015) argue that tourism development has a substantial effect on urban economic growth in China, they also state that the effect does not decrease the economic gap between cities. They found that tourism growth generated significant spill overs, but the direct effect on local economies was minor (Ma, Hong & Zhang, 2015).

Pratt (2015) investigated the economic impact of tourism in Small Island Developing States. According to him, in most cases tourism implies economic growth (Pratt, 2015). He uses different models (input output analysis, linkage analysis and CGE) to calculate the macroeconomic and sectoral impact (Pratt, 2015). As a result, Pratt (2015) found that the sector generates large amount of economic activity, although income that stays in the host country is significantly small. He also suggests that maximising economies of scale could maximise the benefits from tourism (Pratt, 2015). However, Burberry (2004) stated in his work that for developing countries, tourism is more often seen as a so-called saviour for those countries. He focused on his work in case of Mauritius and found using causality tests that tourism has promoted growth and its major services export to the country but most importantly tourism had significant positive effect on country's economic development (Burberry, 2004).

This literature review will be the foundation to my empirical part. Moreover, I will choose the empirical variables according to the theoretical framework. According to theory, gross domestic product and economic levels increase with tourism. Hence, one can assume that countries with plenty of tourism have a higher gross domestic product per capita. Moreover, the hypotheses can be formulated as follows:

H1: Tourism per capita is positively related to gross domestic product per capita.

&

H2: Tourism specialisation is significantly linked to gross domestic product per capita.

3. Empirical Findings

3.1 Data

In this thesis I will use data from 111 countries all over the world. The countries studied are the ones that have the necessary data available. The full list of the countries is provided in the appendix (0-1). The study is missing countries such as Libya, North Korea, Somalia, because the current conflict or government type is preventing from providing values for each variable. Small countries such as Oceanian small states were also lacking the data values, hence not all of them are included. However, the 111 countries that are provided are more than the minimum sum of observations needed, hence they give enough degrees of freedom. The study is aiming to find updated results, hence the data is gathered from the latest data available. Some of the data was still missing from the year 2017, thus 2016 is used instead. The data used is cross sectional data and the thesis will be based on quantitative data from World Bank.

3.2 Variables

Variables that affect economic level are chosen from the previous research and studies (Barro, 2001; Barro, 1991). The dependent variable in this thesis will be *gross domestic product per capita*. It is being used in previous studies as an indicator of economic levels. The independent variables used in the thesis are: International tourism receipts (% of total exports), International tourist arrivals per capita, trade openness, foreign direct investment net inflow and compulsory educational years. The variables are calculated and gathered for the year 2016. Expected sign of coefficient is provided in parenthesis after independent variables. The list of the variables follows.

Dependent Variable:

Gross Domestic Product Per capita

The dependent variable in this thesis will be real domestic product per capita. The thesis will try to estimate the effect of tourism on economic growth, hence gross domestic product per capita will be used as dependent variable. The values are provided by the World Bank and the values are measured in current U.S dollars. Variable is calculated by GDP divided by midyear population. The values are from the year 2016.

Independent Variables:

International Tourism Receipts (% of total exports) (+/-)

The concept shows the expenditure of international inbound visitors. It is also including their payment to national carriers for international transport and any other payments made then or afterwards for goods and services received in the destination country (International tourism, receipts (% of total exports), 2018). The values show the percentage share that international tourism receipts are from the total exports. Additionally, this value can determine how specialised, concentrated and dependent the country is on tourism. Hence, I consider the indicator to give another perspective to measure tourism. The expected sign of coefficient is left open, since there is no certainty that it is negative. The values are provided by the World Bank and are from the year 2016.

International Tourist Arrivals per capita (+)

International tourist arrivals indicate how many inbound tourists travel to the country, excluding the tourist who's usual residence is in the country. The value is divided by the population of the country making it per capita. The period of stay cannot exceed 12 months. This variable is provided to measure the tourism quantitatively. One can assume according to the literature, that the expected sign of coefficient should be positive. The values are provided by the World Bank. The values are from the year 2016.

Trade Openness (+)

Trade openness indicates the share of the imports and exports of goods and services from the gross domestic product. Trade variable is measured with the formula: Exports (% share from GDP) + Imports (% share from GDP) = Trade. Hence it indicates the importance of

the trade for the country. A country is more open and influenced by trade when the number is large. The expected sign is assumed to be positive according the literature. The values are measured as a percentage and provided by World Bank. The values are from the year 2016.

Foreign Direct Investment Net Inflow (+)

Foreign direct investment net inflows indicate the investment inflows coming outside the country, usually from the foreign enterprise. The investment is acquired a lasting management interest from the foreign investor. The values are sum of equity capital, reinvestment of earning, other long-term capital and short-term capital. (Foreign direct investment, net inflows (% of GDP), 2018). According to literature, the expected sign is assumed to be positive. The values are measured as a percentage share from the gross domestic product and provided by World Bank. The values are from the year 2016.

Compulsory Education (+)

Compulsory education indicates the duration of compulsory education years that the citizens are legally obligated to complete. It aims to estimate the basic educational level of the country and how important the national education is seen from the government. The expected sign is expected to be positive according literature. The values are measured in school years and provided by World Bank. The values are from the year 2016.

3.3 Descriptive statistics

Below I will provide the descriptive statistics for different variables, values are display in the table 2. There is variation in GDP per capita between the 111 countries, Mozambique having the lowest GDP per capita in the sample with 382.1 US dollars. The largest per capita value is in Luxembourg with 100738.7 US dollars. International tourist arrivals per capita or also diversifies rapidly. Ethiopia has the lowest value with 0,0085 whereas Iceland has the largest value with 5,34 international arrivals per capita. Smallest values for international tourism receipts (share of total exports) is in Democratic republic of Congo, as the tourism sector

only covers 0.04% from total exports. The country that is most specialised in tourism is Grenada with 86% of total exports are covered by tourism sector.

Trade openness is according to Dowrick (2004) a good measurement for economic success. “Trade” is estimating the regression, where large countries with plenty of natural resources tend to have low values and small rich countries have the largest. In the sample, Brazil has the lowest trade openness with value 24.6% and the largest value is in Luxembourg with 407.4%. “Education” is measuring the compulsory school years in the country. One could assume that the lowest values are in so called “poor” countries and largest in “rich” countries, however this seems to vary more by geographical location. Southeast Asia and Africa have the lowest values with 5-7 years of compulsory schooling and Europe has the largest values with 15-12 years. All other descriptive statistics for the dependent and independent variables are provided in the table 2.

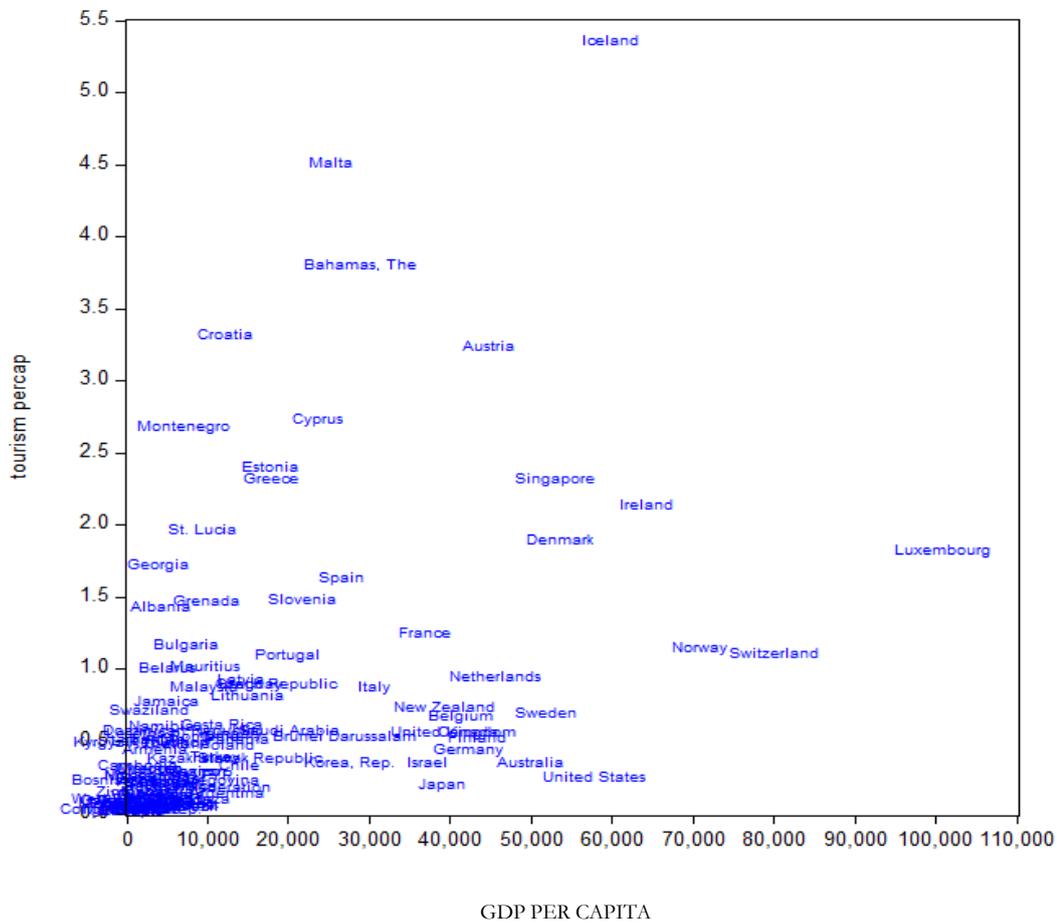
Table 0-2 in the appendix constraints the ten countries with largest arrivals per capita. Iceland has the largest value with over five times more tourist arrivals than the population per year. It is followed by Malta, Bahamas, The Croatia, and Austria with more than three times the population. The top ten countries seem to have same features, most of them are quite small states with rich environment that appear to attract tourists. For example, Iceland’s geological activity has provided many tourist attractions such as geysers and the northern lights. Cultural dimension is relevant, especially in countries such as Malta, Austria and Greece. Eight out of ten of the countries on the list are located in Europe and five by the Mediterranean, where countries face cyclical mass tourism during summer months.

The high GDP per capita seems to be an important pattern with these countries. The top ten countries have an average of 28976 US dollars as GDP per capita, for comparison the data set average is 16610 US dollars and world’s average considerably less than that. The scatterplot (3) shows that seven out of ten countries with largest GDP per capita have international tourist arrivals more than their population. The cluster of countries in the bottom left evidences that poor countries face insignificant value of international arrivals per capita.

Table2.DescriptiveStatists

	MEAN	MEDIAN	MAX.	MIN.	ST.DEV
GDP per c.	16609.62	8165.868	100738.7	382.07	19840.42
ARRIVALS per c.	0.75656	0.445579	5.342253	0.008506	0.970968
RECEIPTS	15.06266	9.254523	86.06672	0.042542	16.57301
TRADE	90.1736	77.6389	407.4311	24.61372	56.56572
FDI	4.616739	2.877864	54.61486	-37.1657	9.196422
Education	9.754545	10.0	15.0	5.0	2.401

Table3. Scatterplot with countries



3.4 Empirical model

Below I will provide the empirical model used. The study uses cross sectional data for 111 countries and the values are taken from the year 2016. Firstly, I will start the analyses by determining the relationship between international tourism arrivals and real gross domestic product per capita by using ordinary least squares (OLS) method. The equation is the following:

$$\text{Real GDP Per Capita} = \beta_0 i + \beta_1 * \text{International tourism arrivals per capita} + \beta_2 * \text{International tourism receipts} + \beta_3 \text{ Education level} + \beta_4 * \text{Trade Openness} + \beta_5 * \text{Foreign direct investment Net Flow} + \epsilon$$

Hence, I will test relation between tourism and GDP per capita, the coefficient β_1 and β_2 will be the most important. I will expect that the β_1 coefficient will be significant and positive. I will also examine the relation of tourism specialisation on GDP per capita. Where International tourism receipts (share of export) is added to investigate the effect of these variable on GDP per capita. The meaning of the other variables is controlling the unobserved changes that could affect real GDP per capita, hence one can analyse the effect of tourism more clearly. Finally, this part will be followed by section called *Results*, which will provide the outcome from the regressions and it will determine the relation between tourism specialisation and GDP per capita. Based on the conclusion, it is possible to see if the tourism has a positive effect on economic levels in 2016.

3.5 Results

After selecting the variables, linear regression is run. The ordinary least squares is the method used. Firstly, I will provide the model with initial results. The more detailed discussion of the results will be provided in the analyse part. Finally, after that there will be conclusion part followed by reference list and appendix.

The ordinary least squares method is used in an attempt to see the relation of tourism on economic levels. This model will focus mostly on the international tourism arrivals as the independent variable. There will be also other independent variables in the equation. The

coefficient between the dependent variable and the independent variable with standard errors is presented in table (4). I found that the regression indicates that international tourism arrivals has positive relation on GDP per capita. **Results state that if international tourism arrivals per capita increase by one unit, the gross domestic product per capita of the country increases by 9684 US dollars.** The result is also significant at a one percent level. Hence, study states that international tourism arrivals is a significant variable to determine increase in economic levels and the result is supported by the theory and the literature.

On the other hand, tourism receipts (share of exports) seems to have negative relation on GDP per capita. **One unit increase in share of international tourism receipts from total exports leads to GDP per capita decrease by 390 US dollars.** This result is significant at the level of 1%. This result is interesting and will be more analysed in the discussion part.

I also found that education years have positive relation on GDP per capita. That result is quite predictable, according the theory. Indeed, the results show that education years seems to have largest relation on GDP per capita with coefficient 1729,111. Moreover, one can also see that education are significant indicators to economic level at the significant level of 1%. The results show that FDI and trade openness are not significant variables. The R-squared indicates that 38% of the variation in dependent variable can be explained by the model. Finally, I can conclude that international tourism has a positive relation on economic level, measured with international tourist arrivals as indicator to international tourism and gross domestic product per capita indicating to economic level. Also, I can conclude that tourism specialisation is significantly linked to gross domestic product per capita. The results show that the variable is negatively related to gross domestic product per capita.

table4. OLS results.

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>
-----------------	--------------------	-------------------

Constant	-6390,386	7589,028
Arrivals per cap	9684,278*	1973,221
Receipts	-390,3377*	104,4215
Trade openness	43,27029	38,69653
FDI inflow	169,8746	206,5982
Schooling	1729,111*	649,1738

<i>R- squared</i>		<i>0.379269</i>
<i>Adjusted R-squared</i>		<i>0.349426</i>
<i>N</i>		<i>111</i>

*=Significant at 1% level

4. Analysis

It can be seen from the results part that international tourist arrivals per capita have a positive relation to gross domestic product per capita. The variable is significant at level of one percentage, hence one can conclude that tourism and especially tourist arrivals has a positive relation on GDP per capita. Hence, increasing amount of international tourist will increase the economic level in the country. The literature and previous studies concur with these results. This study agrees with researchers such as Dwyer (2003), Narayan (2004) and Li (2013). Dwyer at all (2000) stated that one mechanism between GDP and tourism is “injection of money”, hence when international tourist uses money in the host country, it set off a process of multiple transactions that increases GDP.

Moreover, Dwyer at all (2000) stated that other factors behind the result could be exchange rate appreciation or expansionary fiscal policy, these both could occur when international tourist arrival increases. More international tourism could lead to increase the value of host

currency in terms of others. Also, according to Dwyer et al (2000) the increasing tourism could lead to the increasing government spending, such as new roads, airports etc. Such investment leads to increase of economic level. Finally, the factor supply constraints is a key determinant, according to Dwyer et al (2000). Increasing international tourism in the host sector, leads to a price increase that attracts more capital into the sector. More capital requires more labor, land and equipment, which in total increases the economic level and GDP. These seem to be few of the underlying mechanisms behind the results.

Moreover, I found that tourism specialisation causes globally a decreasing relation on gross domestic product per capita. One unit increase of the share of international tourist receipts from the total exports leads to a decrease of GDP per capita. I found that the result is significant at level of one percent. The result can be explained by the fact that countries with large value from the international tourism receipts tends to lack other significant export, hence the countries are not normally as industrialised and global superpowers with huge amount of exports.

Dwyer and Forsyth (2006) stated that tourism is also viewed as a traded service. These results indicate that many countries in the world are very dependent on tourism and tourism is most traded good or service in those countries. Brau et al (2007) stated that allocation of labor was one of the mechanisms between tourism and GDP. According to them, when a country faces higher relative endowment of natural resources, it allocates more labor into the tourism sector from other sectors. However, Dwyer et al (2000) describe the tourism sector as a low skilled industry, hence it could affect a country negatively when specialised on. That could explain the negative relation between tourism specialisation and GDP.

Furthermore, by looking at the data from table 0-3 in the appendix, I found that the 10 countries with largest values from the international tourism receipts variable, are mostly located in the Caribbean Sea, such as Grenada, St Lucia, Bahamas and Jamaica. Hence the countries that are most specialised in tourism are all relatively small. Those ten countries have average of 8877 US dollars for GDP per capita, which is almost half of the data set average. As I mentioned in the literature part Holzner (2011) and Brau et al. (2007) found that countries dependent on tourism face higher than average economic growth rates and

Solow (1956) states that poorer countries have higher than average economic growth rates. These two studies could be connected to my results, since I discovered that countries that are dependent on tourism are relatively poor.

Such result is significant, however it should not abolish the results from tourist arrivals. Tourism has a positive relation on GDP per capita, although the new results demonstrate that total tourism specialisation tends to lead to decreasing GDP per capita and economic level. One could assume that the result could be different if the study would only investigate specific parts of the world, for example the Caribbean or Oceania.

4.1 Delimitations and limitations

As this paper is limited by time as well as the chosen frame, certain aspects could not be touched upon or elaborated. Additionally, some considerations or biases that may have affected my results have not been further considered due to lack of time or by choice. For instance, this study shows that GDP increases when international tourism arrivals increases. However, GDP can also be considered to cause tourism arrivals to increase, hence left and right-side variables are jointly determined. If this is the case, the study faces simultaneity. This could lead to simultaneity bias in the results. If I could have continued the work, the possible issue could have solved using instrumental variable regression., however as time was limited, I can only acknowledge the existence of such issue.

The empirical study was made in order to find evidence of the positive relation, that was eventually found. However, there could be some improvements for the model. It is possible that some variables were omitted unintendedly or purposefully due to the vast number of variables that may be considered impactful. The potential variables that could have been added include variables such as capital per capita, corruption index, country's government stability etc. This issue could lead to omitted variable bias and biased results which could be solved by adding the omitted variables into the model. Should this work be continued or elaborated on, this could be another issue to fix, however because of the mentioned

limitations and delimitations, only the added control variables are included in the final version of the study.

The study aims to provide evidence at a general scale, not to prove and measure the total effects of tourism, which would require a more elaborate and more detailed study. Moreover, this research is focuses on the short-term results, since it uses cross sectional data instead of the panel data. Thus, the thesis does not provide evidence for a long-run effect. By the conscious choice of not dividing countries into different groups based on income or development, the study cannot achieve a more detailed view from tourism. One could have divided the examined countries into developing and developed countries, or to separate OECD countries or added regional dummy-variables. This is a could be studied in further research as this study only focuses on the 111 countries as a one group.

Measuring the effect of tourism globally only measures the general effect and how the countries differ from one other, hence tourism will have a different effect depending on the country and what kind of tourism occurs there. Hence, a detailed and accurate study of the more detailed topic would most likely be a case study. Additionally, this study is missing some of the small island states, since they were missing data. As I have not included those countries, the overall results are arguably weaker, since according to previous studies many of those countries are significantly dependent on tourism, hence they have a large impact on results (Pratt, 2015 & Narayan, 2004).

Additionally, researchers should investigate the smaller factors that determine tourism. For example, the right government policy can increase the output from tourism by setting different levels of taxes on tourism. Government decisions can influence how much country is benefitting from tourism and how much tourism occurs. Countries have different levels of investments invested into the tourism sector, for example some countries prefer strong tourist market campaigns. Conflicts and crime will also determine the amount of tourism and could possibly make the sector rapidly fluctuate. All these factors need to be added, if one is attempting to investigate the total effects of tourism. Finally, after acknowledging delimitations and limitations, the results of this thesis could suggest that there should be more attention paid to possible positive effects of tourism.

5. Conclusion

This final part of the thesis will provide the short conclusion of the study. The purpose of this thesis was to measure and investigate the relation of tourism on gross domestic product. Research on tourism is commonly concentrating on case countries, whereas this thesis focused on tourism as national effect. I used cross sectional dataset with 111 countries and values from the year 2016. The independent variables were selected according to the previous studies and literature. The dependent variable used was selected to demonstrate the economic level. The relationship between tourism and gross domestic product was measured using ordinary least squared method. I used the specific model to estimate different tourism dimensions. Data gathered was provided by World Bank. It was found from the result that tourism has a positive relation on GDP per capita, however tourism specialisation has a negative relation. It was found that both variables were significant in the model, hence they were significant enough to measure economic level and GDP.

The nature of humans is to enjoy themselves and experience new things. Tourism is a vast industry in the world, which provides plenty of income to the people. Previous studies state that tourism tends to have a positive relation on economic growth and GDP. This study also found similar results. However, as tourism is a large phenomenon and difficult to measure, one can have evidence for short-term effect. In conclusion, this thesis shows some evidence and interesting results for the link between tourism and gross domestic product. There is a shortage of similar kind of studies and only few that are as general and using as many countries as this study. More studies and research will hopefully be provided for a better view of tourism and its relation on economic growth and GDP and thesis is a minor contribution to that.

Future studies could be more detailed and specific for country or group of countries. If measuring similar kind of the general effect, one needs to add more variables into the regression and creating a panel data study with many years. There could more studies on

efficiency of tourism between countries, one can think that tourism plays different role in developing and develop countries. The role of multinational companies such as hotel chains like Marriott and Hilton promoting tourism could be another interesting factor to research. The future studies could focus towards quality of tourism rather of quantity. However, due to the growing globalisation, the role of tourism will continue to grow, hence there should be more research made on tourism.

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7. Appendix

Table 0-1 Countries included in the study

Albania	El Salvador	Luxembourg	Serbia
Angola	Estonia	Macedonia, FYR	Singapore
Argentina	Ethiopia	Madagascar	Slovak Republic
Armenia	Finland	Malaysia	Slovenia
Australia	France	Malta	South Africa
Austria	Gambia, The	Mauritius	Spain
Azerbaijan	Georgia	Mexico	Sri Lanka
Bahamas, The	Germany	Moldova	St. Lucia
Belarus	Greece	Mongolia	Swaziland
Belgium	Grenada	Montenegro	Sweden
Bolivia	Guatemala	Morocco	Switzerland
Bosnia & Hertz.	Hungary	Mozambique	Tanzania
Brazil	Iceland	Namibia	Thailand
Brunei Darussalam	India	Nepal	Tunisia
Bulgaria	Indonesia	Netherlands	Turkey
Cambodia	Ireland	New Zealand	Uganda
Canada	Israel	Nicaragua	Ukraine

Chile	Italy	Nigeria	United Kingdom
China	Jamaica	Norway	United States
Colombia	Japan	Panama	Uruguay
Congo, Dem. Rep.	Kazakhstan	Paraguay	West Bank and Gaza
Costa Rica	Kenya	Peru	Vietnam
Croatia	Korea, Rep.	Philippines	Zambia
Cyprus	Kyrgyz Republic	Poland	Zimbabwe
Czech Republic	Lao PDR	Portugal	
Denmark	Latvia	Romania	
Dominican Republic	Lebanon	Russian Federation	
Ecuador	Lesotho	Rwanda	
Egypt, Arab Rep.	Lithuania	Saudi Arabia	

Table 0-2 Top10 arrivals per cap.

Country	Arrivals per cap	GDP per cap (\$)
1. Iceland	5,342252988	59764,71
2. Malta	4,494556694	25145,39
3. Bahamas	3,788033699	28785,48
4. Croatia	3,30806073	12149,19
5. Austria	3,220648617	44757,63
6. Cyprus	2,723640637	23541,49
7. Montenegro	2,670724711	7028,935
8. Estonia	2,391719043	17736,8
9. Singapore	2,303076196	52962,49
10. Greece	2,302488431	17890,57

source: World Bank

table 0-3 Top10 tourism receipts %

Country	Tourism receipts (%)	GDP per capita (\$)
Grenada	86,06672	9841,764
St. Lucia	78,86032	9364,822
Bahamas	77,85612	28785,48
Jamaica	57,53588	4878,576
Montenegro	55,01012	7028,935
Albania	52,93651	4124,982
Gambia	50,52577	473,1904
Croatia	38,8269	12149,19
Lebanon	38,40312	8257,294
Georgia	38,02124	3865,786

Source: World Bank

Table 0-4 Correlation table

	GDP	TOURISM	RECEIPS	TRADE	FDI	SCHOOL
GDP	1.000000	0.435735	-0.200235	0.389082	0.183963	0.214982
TOURISM	0.435735	1.000000	0.324337	0.428452	0.130475	0.021120
RECEIPS	-0.200235	0.324337	1.000000	-0.122137	-0.007712	-0.058403
TRADE	0.389082	0.428452	-0.122137	1.000000	0.561839	-0.102297
FDI	0.183963	0.130475	-0.007712	0.561839	1.000000	-0.135914
SCHOOL	0.214982	0.021120	-0.058403	-0.102297	-0.135914	1.000000

Table 0-5 Variance inflation factor (VIF) test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	12303838	4.637186	NA
TOURISM	3893600	2.519654	1.562389
RECEIPTS	10903.84	2.337325	1.274707
TRADE	1230.867	5.313003	1.487749
FDI	42682.84	1.927219	2.039288

Table 0-6 OLS model

Dependent Variable: GDP
 Method: Least Squares
 Date: 06/05/18 Time: 15:15
 Sample: 1 111
 Included observations: 110

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6390.386	7589.028	-0.842056	0.4017
FDI	169.8746	206.5982	0.822246	0.4128
SCHOOL	1729.111	649.1738	2.663556	0.0090
TRADE	43.27029	38.69653	1.118195	0.2661
TOURISM	9684.278	1973.221	4.907853	0.0000
RECEIPTS	-390.3377	104.4215	-3.738099	0.0003
R-squared	0.379269	Mean dependent var		16609.62
Adjusted R-squared	0.349426	S.D. dependent var		19840.42
S.E. of regression	16002.92	Akaike info criterion		22.25193
Sum squared resid	2.66E+10	Schwarz criterion		22.39923
Log likelihood	-1217.856	Hannan-Quinn criter.		22.31168
F-statistic	12.70886	Durbin-Watson stat		1.632272
Prob(F-statistic)	0.000000			