

# **Impact of International Students on a Small Economy: Evidence from North Cyprus**

**Hossein Saboori**

Submitted to the  
Institute of Graduate Studies and Research  
in partial fulfillment of the requirements for the degree of

Master of Arts  
in  
Marketing Management

Eastern Mediterranean University  
February 2022  
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

---

Prof. Dr. Ali Hakan Ulusoy  
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Arts in Marketing Management.

---

Prof. Dr. Melek Şule Aker  
Chair, Department of Business  
Administration

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Master of Arts in Marketing Management.

---

Prof. Dr. Sami Fethi  
Supervisor

---

Examining Committee

1. Prof. Dr. Sami Fethi

2. Assoc. Prof. Dr. Dilber Çağlar

3. Asst. Prof. Dr. Mehmet İslamoğlu

## ABSTRACT

In the recent years there has been a mass influx of international students to various education hubs across the globe. The resulting concentration of the students in their destinations of choice have increased the market share of the goods and services provided in such towns and economies.

This thesis examines the empirical relationship between the enrollment of international students within universities in North Cyprus, and economic growth during the period between 1977- 2020. the Augmented model of Dobb Douglas production function is conducted to establish if international students kindle the expansion of the economy process. The Ordinary Least Square (OLS) methodology is used to evaluate the model's significance and the comparative relevance of various factors such as capital investment and labor force that could cause an effect on the Turkish Cypriot economy.

On the basis of the findings, approximated, power of explication endorses the opinion that international students in the long and short run, it may be a helpful booster of the home economy. Additionally, there is a unidirectional flow from international students to economic growth in the long run.

**Keywords:** Higher Education, Economic Growth, The Ordinary Least Square, North Cyprus

## ÖZ

Son yıllarda, dünya çapında çeşitli eğitim merkezlerine uluslararası öğrenci akını oldu. Öğrencilerin tercih ettikleri destinasyonlarda yoğunlaşması, bu tür kasaba ve ekonomilerde sağlanan mal ve hizmetlerin pazar payını artırmıştır. Bu tez, adanın üniversitelerinde öğrenim gören uluslararası öğrenciler ile ekonomik büyüme arasındaki ilişkiyi 1977-2020 yılları arası kuzey Kıbrıs ekonomisi için ampirik olarak incelemektedir. Uluslararası öğrencilerin ekonomik büyüme sürecini etkileyip etkilemediğine genişletilmiş Cobb Douglas modeli çerçevesinde inceler.

Olağan En Küçük Kare (OLS) tekniği, modelin geçerliliğini ve Kıbrıs Türk ekonomisi üzerinde etkisi olabilecek sermaye yatırımı ve işgücü gibi farklı değişkenlerin göreceli önemini test etmek için uygulanmaktadır. Tahmin edilen ampirik sonuçlara dayanarak, açıklayıcı güç, uluslararası öğrencilerin hem uzun hem de kısa vadede yerel ekonominin iyi bir destekleyicisi olabileceği görüşünü yönündedir. Ek olarak, uzun vadede uluslararası öğrencilerden ekonomik büyümeye doğru tek yönlü bir akış vardır.

**Anahtar Kelimeler:** Yükseköğretim, Ekonomik Büyüme, En Küçük Kareler Yöntemi, Kuzey Kıbrıs

## **DEDICATION**

This research is dedicated to all international students in North Cyprus, whose thoughts and works are greatly fundamental to the realization of the values of a holistic and global workforce and economy in North Cyprus.

## **ACKNOWLEDGMENTS**

First in foremost I acknowledge the Almighty God, for his benevolent manifestation of peace and wellness through the period of this research. I am also grateful to my parents for their ceaseless prayers, and my entire family for the support endeared to me. My sincere appreciations to my supervisor Prof. Dr. sami Fethi for his guidance and insights especially on microeconomics that has been pivotal in shaping this research. Special gratitude to the team of esteemed scholars and researchers at Eastern Mediterranean University, for ensuring that I completed this research in a timely manner.

# TABLE OF CONTENTS

ABSTRACT.....	iii
ÖZ .....	iv
DEDICATION .....	v
ACKNOWLEDGMENTS .....	vi
LIST OF TABLES .....	ix
LIST OF FIGURES .....	x
LIST OF ABBREVIATIONS .....	xi
1 INTRODUCTION .....	1
1.1 Background of the Study .....	1
1.2 Emergence of the Higher Education Sector in North Cyprus .....	4
1.3 Statement of the Problem .....	6
1.4 Aim of the Study .....	7
1.5 Research Questions .....	7
1.6 Significance of the Study .....	7
1.7 Limitation of the Study.....	8
1.8 Structure of the Study.....	8
2 LITERATURE REVIEW.....	9
2.1 Introduction on Chapter.....	9
2.2 Historical Development of TRNC.....	13
2.2.1 The Geographical Positioning of Cyprus .....	15
2.2.2 The Economy of Cyprus.....	17
2.2.3 Political Landscape of Cyprus .....	19
2.2.4 Development of Tourism Industry in TRNC.....	22

2.2.5 Complexities and Reactions to Sustainable Tourism Development in Cyprus	25
2.2.6 Higher Education as an Aspect of Tourism	26
2.2.7 Challenges facing Higher Education in Northern Cyprus	30
2.2.8 Higher Education in North-Cyprus during the Covid-19 Pandemic	32
2.3 Growth Theory and Cobb-Douglas Production Function	33
2.4 Empirical Evidence from the Literature	35
2.5 Conclusion	39
3 BRIEF ECONOMY ON NORTH CYPRUS	41
3.1 Introduction	41
3.2 Research Design	42
3.3 Ethical Consideration	43
4 DATA, MODEL AND METHODOLOGY	44
4.1 Data	44
4.2 Model	44
4.3 Methodology	45
5 INTERPRETATION OF THE RESULTS	46
6 SUMMARY FINDINGS, CONCLUSION AND RECOMMENDATION	51
6.1 Summary Findings	51
6.2 Conclusion	53
6.3 Recommendation	55
REFERENCES	58



## LIST OF TABLES

Table 1: Sectorial Distribution of GDP 2015.....	18
Table 2: Tourist Arrivals and Net Income in TRNC.....	25
Table 3: Descriptive Statistics.....	45
Table 4: First Correlation Test.....	46
Table 5: Granger Causality.....	46
Table 6: Ordinary Least Square model.....	49

## LIST OF FIGURES

Figure 1: The map of Cyprus.....	15
Figure 2: Normality.....	51

## **LIST OF ABBREVIATIONS**

EMU	Eastern Mediterranean University
GDP	Gross Domestic Product
LEU	Lefke European University
TRNC	Turkish Republic of North Cyprus

# Chapter 1

## INTRODUCTION

### 1.1 Background of the Study

There are various issues that affect the academic landscape in different economies and different countries in the World which includes the social, economic and political aspects of the education system. However, the education itself also influences other aspects of the livelihoods of the population in the various ways which are social, political and economic. In the current study the researcher will investigate how the immigration and the creation of an education or an academic hub in the Northern Cyprus have influenced the domestic economy therein. This is because of the growing numbers of the academic tourist who have been coming into the Northern Cyprus and benefitting from the universities and the technology that has been put in place in order to allow these people to be able to get the best education that the North Cyprus has to offer.

The two phenomena under investigation that is the changes in the economy and the changes in the international education of the academic tourists are some of the issues that continue to attract the attention of the different groups, academicians and the researchers. In the current study the researcher will investigate the relationship between the international student's migration and the changes or the impact of the same on the domestic economy in the North-Cyprus. The early universities or those that were formed many years ago in Cyprus are those that have some connection or

relationship with the government. In the year 1979 the Eastern Mediterranean Institute was the university that was first established in the Northern Cyprus (MEB, 2016). The increase in the number of universities in the country continued to be experienced with more and more increase in the university population was observed especially in the 1990's, this was especially after the establishment of the Lefke European University in the year 1990. The Eastern Mediterranean Institute and the Lefke European University were the universities that were known to have governmental association or affiliation.

The "Neoliberal Policies" that were established by the government brought about or converted Northern Cyprus into a university Island. The government's statements on either the "Populism and Nepotism" or "Cultural Resources Dependence" influenced the evolution of the island from the scientific studies to policies while leaving out the demographic structure of the population therein. Since the year 1990, the population of the universities in the Island has increased rapidly to about 15 to date, this is without those that are in the pipeline or are yet to get approval to be operational after the launch. The data available for 2015-2016 shows that there are about 84,663 University students in Northern Cyprus and this number continued to increase in the year 2017 to about 93,292 courtesy of the Ministry of Education (MEB, 2017). The approaches which are not scientific and have been applied in the TRNC universities brought about low educational culture.

There are many studies which have been done and which are in the available literature which means that the same have been explored significantly. Most of these studies have been done on the association between the economic growth and the international

trade between the concerned countries. This cannot be said to be the same for the studies that have been done to investigate the association between the economic growth and the international tourisms (Gunduz, Hatemi-Jb 2005). There are unverified questions which queries which beg the question of whether the economic growth has a statistically significant relationship with the tourism growth. In the tourism literature the relationship between the tourism and the growth in the economy has been exhausted due to the man studies which have been done between these two variables. The export revenues and the major foreign exchange earners are mostly the issue of international tourisms especially for those countries that are known to be tourist destinations. The current account deficits are also compensated by use of the international tourism funds or revenues that is acquired from such activities in the market.

Therefore, in many countries the issue of tourism complements the source of case as it serves as an alternative source of funds and as a form of export because it brings in income from external sources. The issue of higher education is crucial because it gets to change a location and the financial dynamics of a given country courtesy of academic tourism. Thus, the higher education can be considered to be a global phenomenon. Million and millions of people pursue their education oversees each year. The higher education can thus be considered to be an academic or student tourism that s able to wealth of the local citizens, the income if any and the employment. The development of the economy or the academic structures of a country are both important for the growth of the country.

## **1.2 Emergence of the Higher Education Sector in North Cyprus**

The Country has for many years been facing a level of embargos and the isolation that is political by most parts of the world with an intention of being forced to comply with some of these issues that are not of great interest to Northern Cyprus. This was one of the major reasons why the country was forced to look at interest into the service sector because not much embargos and injunctions could have been done or instituted by the rest of the world on the country. Therefore, this became one of the major sectors because it was beneficial to the domestic economy. The focus of the tourism and the higher education as the main sectors of purpose in the Northern Cyprus became real in the 1980s when the transition period from the manufacturing towards the service sector started to take shape. The embargoes also affected the tourism industry in Northern Cyprus which made it difficult for the country to be able to attract the necessary foreign exchange or revenues to be able to stimulate the domestic economy and subsequent growth by use of the necessary amount or the required amount.

The local economy responded by attraction of the tourists from abroad towards the local Casinos that were opened on the island. There are many Casinos that have now been opened and are able to attract the tourists mostly from the South of Cyprus, from Turkey and from other parts of the world. This was a good strategy because it could be seen that in the year 2008, the contribution of the tourisms on the gross domestic product or the revenues was composed of 9.69% in the years 2008 (SPO, 2010). The issue of gaming and gambling has also been used as a form of attraction of the tourists and those foreigners who would want to spend their time gambling in Casinos and gaming centers. There is no legalized gambling in both the South Cyprus and Turkey which makes North Cyprus a haven for gamblers who want to spend their money. In

the year 2008 those tourists that visited Northern Cyprus were approximately 808,682, 80% of these tourists were from Turkey who visited the Northern Cyprus.

It was in the year 1990 that the demand for higher education in the North Cyprus appeared to have increased especially from the foreign or international students mostly from Turkey and other overseas countries that is African Countries and the Middle East. North Cyprus boasts to have about six well established and recognized universities that include: the largest and the oldest university that was developed and instituted in the year 1979 that is the Eastern Mediterranean University (EMU), Lefke European University (LEU), the Near East University (NEU), Girne American University (GAU), North Cyprus campus of Middle East Technical University (University from Turkey) and Cyprus International University. There were about 45,634 students where about 20.40% of these students were Turkish Cypriots, there was also a portion of about 6.65% who were from other countries overseas and finally there were about 72.95% of the total students who were from the mainland Turkey (SPO). Since the year 1982 there has been an inflow of the international or the foreign students who have been coming to North Cyprus for higher education.

These numbers have continued to increase over the years with overseas students coming from more than 68 countries across the world. In the international arena the country's image and its reputation has been enhanced because there the country has accredited Universities and internationally recognized institutions. The infrastructure expansion and the growth at the Universities in North Cyprus have continued with an unprecedented rate and are now at a favorable comparison with the peers in the international arena. Therefore, it means that the higher education sector or industry in



North Cyprus is one of the most important sectors and cannot be ignored due to its significant contribution of the domestic revenues and in terms of the foreign exchange, it has also led to the growth of the none recognized island state.

### **1.3 Statement of the Problem**

There are different factors that impact the economy that is those that are within the control of the policy makers in the domestic economy or the local economy and the local authority that is the federal bank or the central banks and the treasury but there are also those that are not within the control of the local authorities and as such only certain measures can be put in place to reduce the effects of such pressure. In this case the government through the central banks and the monetary policy committee or the federal banks come together to make sure that there are strategies which are able to secure and safeguard the local economy from harm or from severe effects from the economic threats and competition. However, even with this in mind and with all the infrastructures and the measures or strategies that are made to help the economy fight the hazards and the risks in the market or the international market; these issues still get their way into the economy or they spillover their influence of the economies especially the small economies like that is the developing countries and countries such as the north Cyprus.

The immigration of a group of people or a significant group of people is bound to have some effects on both the origin and destination that is where that group is moving to and where it has left. This means that in terms of cultural effects, social and economic effects on the land they settle in. Therefore, in this study the main issue or phenomenon under investigation is the incidence of academic immigration or the change in inflow

of foreign students into the domestic economy of North Cyprus and how the same impacts on the economy therein.

#### **1.4 Aim of the Study**

The aim of this study is to investigate the impact of international students on a small economy specifically the North Cyprus.

#### **1.5 Research Questions**

What is the influence of the international students on the small economy specifically the Northern Cyprus accordance with capital investment, labor force?

#### **1.6 Significance of the Study**

The current study will assess how the international students impact on the domestic economy of the Northern Cyprus; this means that there will be creation of the literature that can be applied by other researchers in future and that which can be used to fill the gap in literature by other researcher or as a form of review. The current study applies recent information and will be done in consideration of the current year's data which means that the information and findings will be based on more recent information with application of new technology, the emerging issues among other things. Therefore, the current study will be important and crucial to the policy makers in future because it can be used in formulation and development of future policy. This also means that the same can also be used by the government or public policy makers to create better platform and facilities for the international students in order to encourage their stay if they affect the domestic economy positively.

On the other hand, such policy may be reduced if the impact of the international students in the local economy is negative. Because it would mean that such a group

only serves the domestic economy negatively or in a reducing effect as opposed to enabling it to grow.

### **1.7 Limitation of the Study**

In relation to the shortcoming that researcher expected that there will be availability of the data and that the data will be in the form of real time data. However, it might be difficult to get the real time data as it may be and as such the data that will be applied will be the historical data. The other limitation that will affect the study is the access of the information from all students for using as variables in the study. It will be done by consideration of those variables that can be found readily available like in the public platforms like expenditure of the students and the accommodation expenditures as examples.

### **1.8 Structure of the Study**

Chapter 2 explains the concept of literature review, chapter 3 summarizes the brief information on North Cyprus economy, chapter 4 defines data, model and methodology, chapter 5 interprets the results and finally chapter 6 summaries concluding remarks.

## **Chapter 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction on Chapter**

One of the most significant and popular issues to research on in industrialized economies is the relationship between international commerce and economic growth. International trade (including services) expansion, aids economic growth in a number of ways (omotor, 2008). There is a substantial amount of research available that examines the empirical relationship between international trade and economic growth based on exports, imports, and trade. However, little study has been done on the link between international tourism and economic growth (Gunduz and Hatemi-Jb, 2005). Additionally, research findings on the relationship between international tourism and economic growth remain ambiguous and inconclusive (Katircioglu, 2009).

The question here is the expansion of the tourism industry has a direct impact on a local economy or not? International tourists and export earnings are one of the main earners of foreign exchange. They also contribute to the reduction of current account deficits. Tourism expenditure acts as an alternate type of export and helps many nations improve their balance of payments (Oh 2005).

Budget deficits, on the other hand, profit from foreign tourism because it contributes to every area of the economy through tax income. Since international tourists bring foreign currency with them and it's one of the sources of foreign currency, this money

that is obtained through tourists, can be imported for services and goods (McKinnon, 1964).

In many countries, tourism is an important source of economic growth, employment, revenue, and foreign currency inflow (Vaugeois, 2000; Basu, 2003). It is often regarded as the primary source of economic development and progress in many developing countries (Hodur, Leistrit and Wolfe, 2005; Haller, 2012). The tourist business has a large beneficial influence on Spain's GDP, accounting for around 5.9% of the country's GDP, according to Balaguer's scientific findings. In fact, Spain is one of the largest recipients of the tourism industry. Therefore, examining the relationship between the tourism industry and the economy of different regions can be important and it is better to pay more attention to (Balaguer and Cantavella-Jordá, 2002).

Researchers looked at the influence of foreign tourist revenues on Turkey's long-term economic growth. They discovered bidirectional causation between international tourism and economic growth, implying that an increase in international tourists encourages growth in the Turkish economy and that an increase in the Turkish economy stimulates an increase in worldwide tourism (Ongan and Demiroz, 2005). (Katircioglu, 2009) proved that there is a long-term relationship of excellence between international tourism and the economic growth of Southern Cyprus, In the case of South Cyprus, however, the TLG theory was not proven (Dristakis, 2004), used causality analysis to investigate the impact of tourism on Greece's long-term economic growth and discovered evidence of bidirectional causality between foreign tourism and economic growth. One of the most significant worldwide phenomena is higher

education. In underdeveloped countries, education is frequently considered the primary means of escaping poverty.

Every year, millions of people travel to other countries to study at higher education institutions. on the other hand, international students, can be considered tourists, who play an important role in the national income, business, and the riches of the locals Furthermore, the ability of international students to contribute to the development of local enterprises and the growth of the local economy is critical for emerging countries. (Cortés-Jiménez and Pulina, 2010).

Higher education is regarded as one of the most important aspects of a country's economic growth and competitiveness. Basic education (at both the basic and secondary levels) may be sufficient for the creation of simple goods and services while also allowing people to utilize technology in the job. Higher education, on the other hand, is more likely to generate graduates with the ability to design new technologies and who will go on to work in the economy, helping to turn the country into a knowledge-based economy. Higher education promotes economic growth through providing technology and innovation, as well as delivering high-skilled employees to the job market.

Many economists have presented data in favor of higher education's potential benefit on both emerging and established economies. People invest in education abroad when they have a sufficient income, and other factors that can affect are such as parent's education level, geographical location of residence, family occupation, and social conditions (Beneito et al. 2001).

From an economic point of view: inequalities of income and the relation between market labor and education level can affect education (Ram, 1989). Other aspects to consider include the destination country's political and economic situation, the institution's geographic location, the cost of education and living, scholarships, and the degree's validity (Ram, 1989).

As previously indicated, empirical research on the relationship between international tourism and economic growth is limited and less rigorous in the literature. This holds true for the empirical association between higher education and country economic growth. There have been few studies that have used the most recent econometric approaches to provide empirical research on the link between education and economic growth a new vigor.

The economy of small islands is usually very closed and limited and depends on the tourism industry, fishing and agriculture. This is because usually, small islands don't have efficient diverse reserves of natural resources. The economy of many islands is dependent on aid from other countries, and the islands usually do not have a strong manufacturing industry and therefore they are highly dependent on imports (Prasad, 2008).

(Prasad 2008), has also studied that the islands usually adopt a series of their own political and economic strategies according to their economic conditions and geographical location in order to reduce their economic vulnerability as much as possible. The services sector, particularly tourism and financial markets, is the emphasis of these economic initiatives. For both small and large countries, international tourism is a significant source of foreign exchange. Small countries,

especially small islands, rely on tourism more than larger countries. Because their economies are based on only a few sectors, larger countries have stronger economies. Export-oriented services frequently reflect the distinct characteristics of small islands.

On many small islands, tourism is the driving force behind economic and industrial development. The tourism industry can create jobs and is one of the major sources of foreign exchange furthermore it's a source of attracting foreign investors. Smaller economies, on the other hand, are heavily reliant on tourism due to their small size and lack of human capital. As a result, the growth of sustainable enterprises outside of tourism is hampered (Jayawardena and Ramajeasingh 2003).

## **2.2 Historical Development of TRNC**

Political stability is a significant determinant for international students in settling on a certain education center or destination. It is therefore necessary to understand the historical journey of Cyprus international and municipal politics, which continues to shape the region as a major education destination across the globe.

The Cypriot Island has been occupied as far as 6000BC. It lies strategically at the midpoint of Asia, Europe and the Middle East thus making it a paramount center in the history of man civilization. Various domains such as the Ottoman Empire and the British Empire have tactfully dominated the island in their conquest of the territories within the Middle East and bordering the Mediterranean. The island stands out as the third biggest island within the Mediterranean Sea, stretching 224Km and with a width of 96Km (Bradt, 2006) encompassing an area of about 9,255km<sup>2</sup> and neighboring Turkey, Egypt and the Greek island.



In 1974, the island that was partitioned into two states, South and North Cyprus. The Northern part is well known as the Turkish Republic of North Cyprus (TRNC) and occupies a relatively smaller part of about 37% of the total land mass of the island (Bradt, 2006). Under international law, TRNC has not assumed recognition as a state, while the South State of Cyprus has assumed state recognition and consequently gained membership to the European Union beginning from the year 2004 when it accented to the founding treaty. As a result of the membership to the EU, South Cyprus has been able to fully exploit her economic potential especially through tourism and has thus been more developed than TRNC. Prior to the cessation, there was a civil war that lasted for span of a decade. The repercussions of the throes of the civil war were detrimental to the socio-economic welfare of the Cypriots, especially on trade, export market and the financial industry. There was also a disorientation of the social welfare of the Cypriots, with opposing sides harboring resentments over the deaths and massive loss of property that was witnessed during the war. Thousands of people along the border were either forced to move to either side or move out of Cyprus altogether.

## 2.2.1 The Geographical Positioning of Cyprus

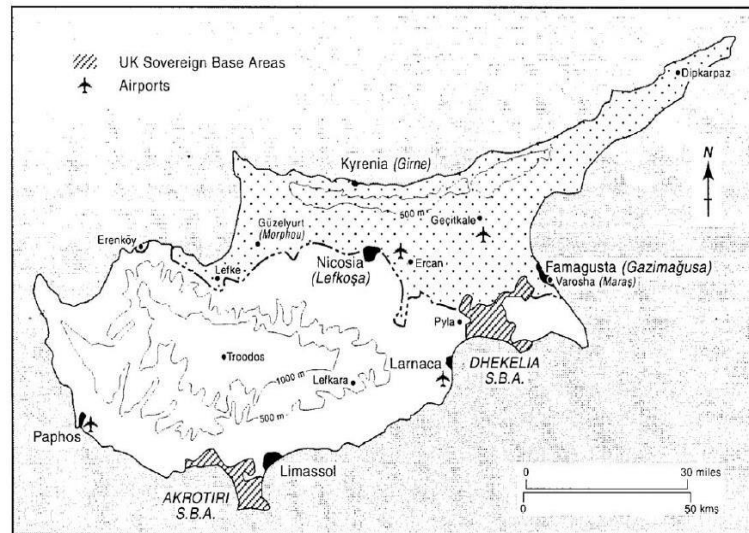


Figure 1: The map of Cyprus (Source: Alipour & Kilic, 2005)

Another aspect that influences the choice of Cyprus as a global education center attracting myriads of international students over the years, is its breathtaking landscape and natural features.

The Island is bestowed with a wide range of physical features such as extensive plains and long mountain ranges as well as a greatly prolonged and coastline. The Kyrenia Mountain located on the northern part of the island are the largest ranges, with a span of about 160 km alongside the shoreline having the maximum peak, Selvili Tepe, sticking about 1000 m above the sea level. The broad plain Mesaoria, that when translated from Turkish means “located amidst two mountains”, is seen on the opposite direction of the Bespamark Range which is on the Kyrenia Mountain. This part of the mountain has the most fertile soils of the island, providing an ample environment to practice agriculture, which is an important support industry for tourism. The prevalent crops grown on the area include wheat and barley as well (turkish Lefkosa). Owing to

the cessation of Cyprus that shadowed the civil war between the North and South Cyprus, the capital city has been divided into two.

South Cyprus has also a good share of the mountainous landscape, with the location of the Trodos Mountains lying squarely within her territorial boundaries. The highest point on the Trodos Mountain of South Cyprus is Mount Olimpos, standing at 1.958M above sea level, almost twice as high as Selvili Tepe in the Turkish Republic of North Cyprus.

The Climatic conditions of the island are characterized by the usual long and hot summers distinct to the Mediterranean, and short, slightly cold winters. The average temperature for the year is about 20.250c (Bradt, 2006). This therefore infers that tourists can enjoy the warm sunshine all throughout the year, without the interference of harsh winters. There is also an extremely rich life of flora and fauna especially during the autumn when flowers blossom. During mid-year commencing from early June to September, the island witnesses a surge in tourist activities to enjoy not just the climatic conditions and biodiversity, but also the breath-taking sandy beaches, and the sea. For the lovers of snow, the mountainous terrain offers for snow viewing especially during the spring which occurs from March to early May. This period is also the most favorable for botanists and ornithologists as it signifies the return of birds from Africa. Hiking across the mountains, one can see a large number of differing kinds of Orchids, wild tulips, narcissi, cyclamens and anemones. The Island is also endowed with a unique diversity of 22 prevalent classes of plants and 7 species of birds, offering an exclusive destination for all lovers of birds and plants across the world.

### **2.2.2 The Economy of Cyprus**

As already advanced, education is a key parameter of the economic output of a given region, through educational tourism.

Since the cessation of Cyprus in 1974 and the consequent partitioning of the island, North Cyprus has experienced immense challenges in the international export market due to the lack of recognition as a state. Her biggest and vital most export country is the Turkish republic which is about 65Km away. The other important export markets are in the Middle East and EU.

Though agriculture is not the backbone of the economy of TRNC, it presents her biggest and most fundamental export commodity which is citrus. There are ten major economic activities of TRNC, with trade and tourism occupying 20%, of the total GDP. Of the 20%, the sister industry of hospitality which involves baths, hotels, restaurants and cottages take about 8.9% of GDP as illustrated under the table below. There is also an extremely high rate of inflation, where there is a continued and steady upsurge of the cost for goods and services, taking about 10.2% (Investopedia, 2015). The level of inflation is not only evident in the prices of goods and services, but also in the value of the currency, which was brought into circulation in 2010 due to the depreciating value of the Turkish lira, where compared with other international currencies such as the American dollar and euro.

Commencing from the year 2013, the minimum wage was set at 1,415.0 Turkish lira (1€ = 3.178 ₺ European Central Bank, October 2015). The demographics as depicted in the 2011 census reports shows that the populace of TRNC was about 301, 988 with more than a third of the residents under formal employment (SPO, 2015). The rate of

unemployment then was at 8.4% which was slightly lower than the average rate of unemployment among member states of the EU and that South Cyprus that recorded the highest rate in the year at 15.9% (Eurostat, 2015). The biggest employer was the construction and public service sector recording 19% of the total number of formal employees.

There is also a significant source of income originating from the institutions of higher learning located in TRNC and South Cyprus as well. There are a vast number of international students in Cyprus, including from Turkey and Africa, especially in disciplines regarding hospitality and tourism management. It has been established that the conducive and mostly sunny climate of Cyprus as well as the many tourist destinations lure so many students into studying in Cyprus. During the 2012/2013 academic year, the number of enrolled students in the nine major universities within TNRC was at 60,000 (SPO, 2015). The University of Eastern Mediterranean having been formed about half a century ago, has gained the lion’s share of international student owing to its Popularity. Another key indicator for the growth of the international students’ body is the political goodwill and peace that has been fostered since the partition of Cyprus and the intended annexation of Cyprus to Turkey, which considers the island part of the Turkish territory.

Table 1: Sectorial Distribution of GDP 2015

	SECTOR	%
1.	Agriculture	5.3
2.	Industry	8.4
3.	Construction	4.9

4.	<b>Trade – Tourism</b>	<b>20.1</b>
	Wholesale and Retail Trade	11.2
	Hotels and Restaurants	8.9
5.	Transport – Communication	9.4
6.	Financial Institutions	7.6
7.	Ownership of Dwellings	4.7
8.	Business and Personal Services	11.7
9.	Public Services	17.7
10.	Import Duties	10.2
	<b>GDP</b>	<b>100.0</b>

Source: State Planning Organization, 2015

### 2.2.3 Political Landscape of Cyprus

To clearly understand and appreciate the steps taken towards the development of tourism, specifically educational tourism in (North) Cyprus, it is important to look at the historical underpinnings and the political journey towards the formation of the modern Cyprus. Beginning from the reign of the Ottoman Empire, two communities comprising of Turks and Greeks co-existed together peacefully. After the end of their rule in 1878, the British subsequently took hold of the island and assumed its control and administration. The annexation of Cyprus to Britain led to the procreation of the state as a British Crown Colony in 1925 following the decision by Turkey to join forces with the central powers during the 1st World war against the Triple Entente during the 1st World War. In the middle of the 20th Century, president Makarios III assumed

power as the political and religious leader of Cyprus after coming out of the election victorious. During his tenure, Greece attempted to sabotage his power and influence towards imposing plan “Enosis” which was aimed at joining the island with the Greece. This move was highly opposed by the Turkish Cypriots, who occupied the region during the Ottoman rule, and preferred to be under the crown. In the same period, a terrorist organization named the “National Organization of Cypriot Fighters (EOKA)” planned a number of bombings targeted towards the proponents of Greece annexation. This led to power changing by then governor Sir Hugh Foot and the call for cessation by the Turkish Cypriots who yearned to exercise their right to self-determination. By the year 1958 there was so much tension and strain between the Greeks and Turkish Cypriots on the issue of gaining independence from the crown. Exactly two years later, the Republic of Cyprus was created in 1960 and the Cypriots had the freedom to exercise self-rule. In the same year, the Cypriots promulgated their first constitution that was ratified by their colonial masters, Turkey and Greece as well. Part of the provisions of the constitution was that each of the three countries that signed the constitution had the right to deploy their military where there was an imminent constitutional threat. The first leadership of the newly founded state reflected the diversity of Cyprus inclusive of both Greeks and Turks, with Archbishop Makarios, a Greek Cypriot becoming the president, and Dr. Fazil Kucuk, a Turkish Cypriot deputizing him. The two leaders enjoyed great admiration and respect from the Cypriots and for a time they were viewed as the vanguards of peace and prosperity on the Island. However, in 1963 the great steps taken towards achieving long-lasting peace and unity between the two communities were undermined, following a decision by the majority Greek Cypriots, to propose and implement changes to the constitution, limiting the rights and freedom enjoyed by the minority Turkish Cypriots. These

constitutional amendments would not be in any way opposed since the Turkish Cypriots had the least representation both in parliament executive and population as a whole. In response, they reiterated by walking out of parliament and the event marked the commencement of eleven years of a bloody civil war. Alongside the proposed constitutional amendments was the initial plan Enosis, which was vehemently opposed by the minority Turkish Cypriots. Efforts of the United Nations Peace Keeping Forces to restore order on the island turned futile. As a consequence, for the war, many Cypriots from both communities lost vast amount of property, while many others were driven out of their homes to refugee camps and expatriate in the U.K and Australia. The end of the war was signified by a decision by the formulators of Ankara's foreign policy in 1974, sending about 40,000 troops with the aim of bringing the war to an end. During the summer, the soldiers had liberated about one third of Cyprus declaring it a federal state that consequently gained independence in 1983. The resultant state was named the Turkish Republic of Northern Cyprus and was only acknowledged as a state by the republic of Turkey. The position has remained so with the international community failing to recognize TRNC as a state.

A number of negotiations initiated by the UN and geared towards the unification of the island have not been any close to realizing the much needed peace. In 2004, the island was almost getting unified as a result of proposal by the UN, but the intentions were defeated after the poll results from a referendum, which turned down the move. However, the willingness to come out and vote in mass numbers, registering more than 80% of both communities, indicated a great will to resolve the underlying conflicts, even though the Greek Cypriots voted in majority, against the proposal for unification. There was also a great contention emanating from the notion of property rights



advanced by “Annan Plan” because the dictate of the plan was that the Greek Cypriots who initially lived in the North, would not be able to reposes their property in the region and to reclaim their homes in north. The decision to downsize the land under the possession of the minority Turkish Cypriot from 36% of the total landmass of the island to about 28.5% and to grant common citizenship among the two communities was highly advocated and voted for by the Turkish Cypriots. On the first of May in the same year, the application by the Republic of Cyprus to ratify the EU treaty was upheld, making the state a fully recognized member of the union, with all the legal rights to reap all the benefits accrued to members. Until the present day, the island of Cyprus remains alienated as from the demarcations inaugurated back in 1974. The Turkish Republic of North Cyprus has been registering an upward scale in terms of economic development, export trade, tourism and overall GDP over the last 10 years. This upward trend has also been greatly bolstered by the election of President Mustafa Akinci in 2015, who has been vibrant in renewing negotiations with the south and hopes for a stronger and more united Cyprus.

#### **2.2.4 Development of Tourism Industry in TRNC**

According to statistical data released by the United Nations World Travel Organization (UNWTO, 2015), there has been a progressive rise in the number of new tourist arrivals worldwide. This has also been the case in North Cyprus for the past decade, registering a steady rise in the numbers of new tourist arrivals has portrayed in the table below. Just as is the case in trade, Turkey holds the first place in the international arrivals to the state, accounting to about 75% of the total number of tourist. As discussed in table 1 above regarding the building blocks of the economy of TRNC, the subsectors of trade and tourism are the most essential and greatest contributors, with over 20% input to the total GDP. The government of TRNC and the private sector has

been at the forefront enhancing the key role played by sustainable and strategic planning in tourism activities and destinations, as it is a vital component of this major economic player.

Comparative data drawn from the government agency responsible for State Planning in TRNC depicts a concomitant increase in the positive impact of tourism in the hospitality industry, as a major segment of the industry. Between the years, 2010 and 2013 for instance, the revenue collected from tourism in the latter was recorded at 600 million, accounting to more than a third of what was collected in the former year. In terms of GDP, the subsector represented about 5.2 % of the total GDP in 2010, growing to 8.9 % in the year 2013. This trend has been continuous throughout the past decade, and is expected to grow further towards the year 2030.

In the world of employment, it is not disputed that tourism creates almost a tenth of all the jobs in the world, in line with a report from the World Travel Organization (UNWTO, 2015). In TRNC the growth of the tourism industry has been concomitant with the demand and increase in employment opportunities in the industry and the related sectors in hospitality. In 2018 the number of employees under direct employment in the industry was more than 15,000. This high growth and demand for employment has provided a better mechanism to curb the fluctuations of the work force in the labor market.

Even before the throes of the civil war and the consequent cessation in 1974, Cyprus had been a benchmark of bed capacity and tourism reception, gaining popularity even among world celebrities and international tourist. The bed capacity in Cyprus then, was 10,000. The core of the vast tourism activities and destinations was at the time

located in Varosha, which I based close to the archaic city of Famagusta, which was more of Mecca for travellers in the Middle East area. Following the intrusion and presence of Turkish Army in an operation to end the prolonged civil war in the zone, most of the hospitality support infrastructures such as hotels were neglected, and ever since then, Kyrenia assumed the name of the “pearl of North Cyprus” connoting it as the famous most destination in TRNC. In the modern times, the Bafra area located around the Karpas peninsula is fast gaining popularity with an estimated projection of 3,000 bed capacity to be set up in about six hotels (Altinay & Hussain, 2005). This new infrastructure has involved a lot of intricate planning due to the environmental concerns of the area which has for a long time been a biotope for endangered turtles.

Another part of the tourism industry in Cyprus that cannot easily be dispensed is casino tourism, which is more rampant in the North. This can be attributed to the decision by the Turkish government to close down all casinos in the state back in 1997, making TRNC the only option for ardent gamblers who came all the way from Turkey, to play over the weekends. Currently, there are more than 40 casinos (Scott, 2013) in the North, contributing hugely to the economy of the region. As discussed and illustrated on the table below concerning the origin of tourist into Cyprus, Turkey has been top of the list owing to the casino guest frequenting the area.

Table 2: Tourist Arrivals and Net Income in TRNC

YEAR	NUMBER OF TOURIST ARRIVALS			GROWTH	NET TOURISM INCOME
	<i>Turkey</i>	<i>Other</i>	<i>Total</i>	<i>Index</i>	<i>(million \$)</i>
2015	638,700	161,676	800,376	100	616,1
2016	741,925	160,465	902,390	112	705,8
2017	801,326	220,763	1,022,089	113	759,4
2018	904,505	261,681	1,166,186	114	871,9
2019	923,308	309,445	1,232,753	105	915,1

Source: State Planning Organization, 2020

### 2.2.5 Complexities and Reactions to Sustainable Tourism Development in Cyprus

The natural landscape of Cyprus offers one of the world's richest biodiversity and natural resources ranging from mountainous terrains to sandy beaches and extensive coastline along the Mediterranean. Cyprus's sandy beaches are the natural homeland and rescue centres for the rare and endangered Green and Loggerhead turtles, which are usually seen between the months of May and September. Notwithstanding, the Island provides an essential passage for a vast and varying species of birds, migrating during the springtime to and from Africa. This therefore makes the place the perfect destination for researchers and bird viewing tourist. The hindrances to more development in tourism and hospitality in Cyprus are politically fueled.

A noteworthy point of concern that has been hindering continued enhancement and development of sustainable tourism in the North has been accessibility via air transport. The Nicosia International Airport has not been open for since 1974, as its operations have only been limited to use by the UN officials. The lack of recognition of TRNC as a state has also hindered the access by international flights, requiring that visitors heading to the region have to land in Turkey before proceeding to the region by use of domestic flight or ferry.

More recently, the pangs of Covid 19 pandemic have not left the tourism industry of Cyprus unscathed. With the first two cases reported on the 9th of March, 2020 the government implemented dire measures to curb the spread of the virus. Part of the measures included social distancing and reduced social gathering which led to reduced tourist activities and traffic in the hospitality industry (Raftopoulos, V.,2020).

#### **2.2.6 Higher Education as an Aspect of Tourism**

Education, more admittedly higher education, is one of the most pronounced forms of tourism which certainly contributes to the growth of many economies around the world, accounting to about 10% of the World's Gross Domestic Product. Consequently, the sector is responsible for support of over three hundred million households that are directly dependent on the industry for either formal or informal employment. (WTTC, 2019) The industry is highly dependent on choice of sites and educational programs that are attractive to students tourist who could either, be domestic or international. This therefore calls for well calculated and strategic planning to identify sites and programs that are in line with the global demand of the job markets.

There has been an immense challenge on the choice of educational institutions and the offered, programs owing to the multifarious preferences of students depending on their age, economic power and their level of study, nationality, security and travel ease among others. The sector is also faced with so much competition party because students compare various sites and programs against the cost of accessing similar services and sites elsewhere globally. This competition has also resulted to the scarcity of professors and researchers who are lured away to more competitive and established institutions around the globe, particularly in the United States and United Kingdom (Airey & Tribe, 2006).

The best practices approach that has been drawn around the globe aim at approaching sustainable planning and educational management in a technological manner that enhances the socio-economic development and cultural advancement of international students who are a significant stakeholder (Richins, 2009). There has also been overemphasizes on anti-racism and protection of minorities at both the national and international arena, as a measure upholding universal human rights and dignity as a tool for sustainable planning and development in tourism. This has been highly necessitated by the visible and overarching racism especially against International Students of African ascent and social-cultural problems concomitant with the absence of a framework of sustainable planning. In recent years, there has been a change in a number of jurisdictions, especially in Cyprus, which has arisen as a vanguard of a well-articulated and implanted framework of education planning. (<http://ec.europa.eu/environment/eussd/>).

The World Tourism Organization divides the reasons behind travelling into two main accounts (UNWTO, 2018)

1. Travelling as a result of personal intentions and activities such as to take a holiday or get some leisure, to visit a friend or family member, to seek further education or learn by observance, to obtain better medical attention, for religious purposes such as pilgrimage, or to carry out some shopping for personal utilities.
2. The second reason is touring for the purposes of carrying out business transactions, and professional activities such as meetings and research release (Tureac, C. E., Turtureanu, A, 2010).

The important and competitive advantage of investing on the latter as opposed to the former, is that it is not affected by seasons and attracts tourist with a higher purchasing power, as in most instances, their expenditures are under the care of business corporations, governments or even institutions in the cases of research (Eilat, 2004). This finding calls for collaboration between the government agencies tasked with educational and tourism management, to ensure that educational institutions and research centers are well equipped to attract international students and associated stake holders such as researchers and scholars.

The United Nations World Tourism Organization also classifies tourism on the basis of the origin and the intended destination of the tourist. Under this classification, tourism can either be domestic, where the origin of the tourist is within the jurisdiction of the intended destination, inbound where the movement is to a destination within the boundaries of the state of origin, by tourist who are essentially non-citizens and

outbound where the movement is to a destination outside the boundaries of the state of origin (Butler, 1990). Under this classification, international students can be categorized as outbound tourist as their origins are outside their chosen educational institutions.

In many jurisdictions, tourism management schemes do not put into account and appreciate the impact of international students as a form of tourism in sustaining the venture especially in seasons when international travels register lower numbers (Archer, 1978). As already defined above, domestic tourism is the movement of tourists who are essentially citizens of the state, to destinations within the territorial boundaries of the state. It may also encompass inbound tourism where non-citizens travel within a given state of their residence. From an economic point of view, though domestic tourists do not necessarily pay premium fees as the international travellers, they greatly contribute to the continuous flow of currency within the industry, and the increased job opportunities for the locals (Archer, 1978).

On the issue of awareness on the part of the tourist, it has been averred that where tourist have a higher level of education, they tend to be more sensitive to the environment and bring more income to their chosen destinations (Dolnicar, 2008). Cyprus, though comparatively small in size, has embarked and adopted sustainable planning measures that are conscious of ethical and national ethos as well as environmental management (Farmaki, 2013). It has been argued that the predisposition of “conserving of the natural environs is a criterion for a positively functional economy and social order” (Finkbeiner et al, 2010).



Cyprus has also been conscious to the need for a well-educated and professional workforce in the tourist industry, as a component for sustainable and strategic planning. This comes with the realization and appreciation of the key role offered by the institutions of higher learning in tourism management. Various agencies, such as the World Bank and multistate organizations, such as the European Union and the African Union, have bolstered this viewpoint by stating that the role of higher education cannot be undervalued in the long-term planning of any initiative. The study was conducted by (Farmak, 2016) depicts that Cyprus has become the most preferred destination for international students with an interest in tourism and hospitality related courses due to the highly advanced levels of the industry in the country, and its success as a leading contributor to the economy of the state.

These pillars instituted and adopted in Cyprus constitute the basis and guide point of strategic planning in educational institutions that can be adopted and assimilated in other jurisdictions around the globe. There is an assumption that managerial systems of private entities investing in educational facilities, and the level of training, professional skills and qualifications of the employees in the industry, may be different depending on the jurisdiction, and these differences may have an impact on the overall experience of international students during and after the duration of their courses.

### **2.2.7 Challenges facing Higher Education in Northern Cyprus**

The intrusion of Turkey into North Cyprus and the demarcation of TRNC back in 1974, continues to harbor many repercussions in the region, and to some extent hindering educational development and political sustainability (Altinay, L, 2000). This realization has also been behind President Mustafa Akinci efforts of negotiations, that sustainable peace and coexistence is a quintessential element to reach the level of

tourism including educational tourism as realized in South Cyprus and Turkey. The uniqueness of Cyprus as an island within the Mediterranean is in itself an attractive and competitive edge in touring the destination. These benefits can however be better reaped where there is peaceful coexistence between the two sides, especially because the North side has unique ranges that stands out as dominant tourist destinations. Nevertheless, there continue to be significant tourist arrivals in the de-facto state of TRNC, attributed to the general stability of the area, amidst the continuous mayhem caused by terrorism in the neighboring Middle East states.

The hindrances to more development in education, tourism and hospitality in Cyprus are politically fuelled. A noteworthy point of concern that has been hindering continued enhancement and development of sustainable education in the North has been accessibility via air transport. The Nicosia International Airport has not been open for since 1974, as its operations have only been limited to use by the UN officials. The lack of recognition of TRNC as a state has also hindered the access by international flights, requiring that visitors heading to the region have to land in Turkey before proceeding to the region by use of domestic flight or ferry.

More recently, the pangs of Covid 19 pandemic have not left the educational programs of Cyprus unscathed. With the first two cases reported on the 9<sup>th</sup> of March, 2020 the government implemented dire measures to curb the spread of the virus. Part of the measures included social distancing and reduced social gathering which led to reduced tourist activities and traffic in the hospitality industry (Raftopoulos, V.,2020).

### **2.2.8 Higher Education in North-Cyprus during the Covid-19 Pandemic**

The tourism and hospitality industry has been one of the most affected sectors during the Covid 19 pandemic, and the impacts have brought with them ripples to the international students body. At the onset of the pandemic, the aviation industry was partially or wholly closed down in a number of jurisdictions, hindering travel by international students. The support systems of the industry such as transport and intermodal facilities were subjected to restrictions which hindered the free movement of international students. The United Nations World Tourism Organization (UNWTO) in its 2020 report acknowledges the gross impact of the pandemic on the industry and advances some key measures including financing to revamp the sector. While the sector has not been an alien to crisis ranging from human skirmishes to natural calamities, the Covid 19 pandemic has been different owing to its global nature. This therefore connotes that Cyprus and its educational package for international students has not been an exception to the pangs of the pandemic.

A look into the Cyprian educational institutions and programs for international students however, indicates swift policy making to adopt mitigation and adaptation mechanisms during the pandemic. Recent literature review indicates the uncertainty to the end of the pandemic. Researchers and scientist are also a long way from achieving permanent solutions to the pandemic with many variants and successive waves of the pandemic creating more confusion. This therefore leaves adaptation mechanisms to ensure innovational and technological solutions such as online learning within and outside Cyprus as instituted by various learning institutions in Cyprus.

There is however need to ensure international corporation in addressing the global tourism industry. This can only be achieved through strengthening the UNWTO with financial and structural mandates to help various countries adopt and mitigate the effects of the pandemic on their various tourism offers.

### **2.3 Growth Theory and Cobb-Douglas Production Function**

In the current study Solow growth model will be applied that is the new version of the same with consideration of the changes in the exchange rate and how the same impacts on the domestic economy as one of the auxiliary variables. According to (Mankiw, 1995) human capital refers to the time that has been used or utilized in making of the knowledge that is the quality of the society's textbooks. In this part of the study we break down how the exchange rate influences the education sectors and the physical investments that are applied therein. This is also with the consideration of the number of the laborers therein the education system. Education and the human capital have a significant role in the explanation on the growth of the economy and none of these are new (Denison, 1967) note that the country would be able to utilize the labor force more efficiently when there is increased training and education of the labor force by use of the existing technology.

(Alderman et al.,1996) also emphasized the utilization and investments in education because it was noted that about \$100 billion annually is spent by the developing countries on different human capital investments, health and education. As mentioned in the beginning of this study the issue of higher education is a global phenomenon. The development in education has brought about the change in the living standards in both the developing and the developed countries specifically in Europe which have been observed to increase over the last decades due to the improvement in education. This

only means that the incidence of education has been able to improve the livelihoods of many households in terms of the revenues and the income that they are able to get from their place of work. Those economies with significant development in education can be seen to have a much better or improved growth in the economy as opposed to those that have a lower or less educational development (Romer, 1990) explains when the country or the economy has a large knowledge base in total then the economy would be better off. Temple and Voth investigated if there is a relationship between the equipment investments, human capital and industrialization. It was argued that the industrialization and equipment investments should be connected or followed by the human capital in order to bring about the stimulation of the productivity growth (Temple and Voth, 1998).

In this study we adopt the Cobb-Douglas production function to assess the influence of the international students and the effects of the same on a small economy.

$$Y_t = K^{\alpha} H^{\beta} (A_t L_t)^{1-\alpha-\beta}, \quad (1)$$

In the above equation  $Y_t$  is the real output,  $K$  is the stock of the physical capital available,  $H$  is represented by the letter  $H$ ,  $L$  refers to the raw labour,  $A$  is the Labour-augmenting factor which is used to reflect the technology level and efficiency in the economy while time is shown or indicated by use of  $t$ .

The assumption that is made is that the  $\alpha + \beta < 1$ , this would help in checking the return to scale factor, this means that the constant return to factor inputs jointly while the decreasing returns separately. Raw labour and Labour-augmenting technology are assumed to grow according to the functions as presented below:

$$L_t = L_0 e^{nt} \quad (2)$$

$$A_t = A_0 e^{gt + P E X \theta} \quad (3)$$

## 2.4 Empirical Evidence from the Literature

There are different factors which influence the changes in the numbers of international students and the mobility therein. This can be explained by physical infrastructure and the availability of quality education where such number flock to. The United States of America has been termed to have a comparative advantage over most countries in terms of ability to offer and export higher education services (Chellaraj et al., 2008) and the other countries that are industrialized continue to remain significant partners of the international network of students (Findlay et al., 2012; Weber and Duderstadt, 2012; Findlay, 2011; Weber and Duderstadt, 2008; Chen and Barnett, 2000).

According to (King et al., 2013; Bhandari and Blumenthal, 2011), there are different universities that are competing for the available international students across the world. There are those previous studies in the available literature that are applying the issue of migration theory to international trade and mobility of scholars and the application of international trade services in theories is not very common (King et al., 2013). It is prudent to note that there have been a rise in the international students inflow or immigration to the United Kingdom more specifically from the European Union and the East African Community since the year 2010 (Findlay et al, 2012 and Ackers and Gill, 2009). The comparisons between the United States and the United Kingdom has shown that the United Kingdom have had reduced number of outward migration of the students and education tourists as opposed to the United States where the numbers were much lower.

The Netherlands was also found to have a smaller number of international outward flow of the international students compared to the United Kingdom while the US had lowest levels of numbers (King and Sondhi, 2018; Moed et al., 2013). There has been a one-way street of educated British citizens migrating abroad to significant numbers due to the opposition to migrants and students from the international communities. The largest or the highest net brain drains have been as a result of his migration globally which have also touched or influence the developing countries such as Republic of South Korea, Singapore, China and other NICs. The situation was made worse by the decision by the UK to deny visas to the spouses of the UK citizens that is academicians and the professional in the past few years. The UK economy also stands to lose on the issue of the international students who will be affected by the proposed cap. The competition for the international student's market is not getting any easy with the numbers of the international students increasing from countries such as the Switzerland, Turkey, South Africa, Croatia and Portugal (Riano et al., 2018).

The number of the international researcher and the scholars from both the EU and the ECA is also expected to reduce due to the British exit from the European Union (BREXIT) (Moskal, 2017). This will be brought about by the large cuts or the reduction in the funding of research by the British Universities from the latter. This is also expected to extend to the scientific collaborations between the two regions that is the United Kingdom and the European Union and the mobility between the two will also be affected adversely (Portes, 2019; Lulle et al., 2019; 2018; Hu et al., 2018). There is also the problem of the permanent immigration caps that would affect the international students being counted in the permanent immigration caps (Kone and Ozden, 2017; Schiller and Caglar, 2011). The United Kingdom international student's

inflow had already reduced past the same inflow that is achieved by Canada in the year 2017; this was also overtaken by the Australia in the following year that is 2018 as the preferred destination for the European Union international students.

### **International Student Pull and Push Factors**

There are different studies that have assessed the factors that affect the mobility of the international students which can be divided into two categories that is the push factors and the pull factors. However, for reasons best known to the researcher, most of the previous studies have been able to consider or focus on the pull rather than the push factors. One of the earliest investigations was conducted by (Cummings, 1984) in the national education systems where the world-system approach was contrasted to the development approach. For the study in Germany the pull factors such as the traditions of democracy in the source countries were very important (Bessey, 2012); while the focus was specifically on the critical thinking for the Asian students (Song and McCarthy, 2018).

The Erasmus exchange program notes that the pull factors may include but are not limited to the distance from the country, the cost of living, host country, host country university quality, the birth country, the language and finally the climatic conditions (Gonzales et al., 2011). The different students could work well or desire certain conditions; those students from Korea were more considerate of the host country academic and the presence of a welcoming environment. The issue of improvement of the quality from the abroad was also important o these students (Dubois et al., 2014). In Australia there was setup of strategy and the changes in policy in order to ensure that there is reduction in the effects of brain drain or the same was offset by use of the



different policy coupled with the traditions that are democratic came with the with an impact of increasing or raising the numbers of the students that are from abroad coming in Australia (Burkhauser et al., 2016). There are limited studies which are also scanty on the relationship between the international students and the economic growth in the small economies or the different economies.

There are many strategies and efforts that have been put in place to bring about the attraction of the international students to the different countries including Thailand, North Cyprus among other small economies such as the North Korean economy. These efforts were focused on specific demographic groups and information's mostly from the Southeast Asia (Levatino, 2017). The Universities in Malaysia have also been making efforts to bring in the students from the international scene and encourage them to study in Malaysia, this have not been as successful as would be expected. The students who are taking different course from Australia and are from abroad have also been seen to reduce in numbers because of the tightened immigration policy which also affected the students from India among other students.

In regard to the pull factors there are other studies that have been done in relation to the cross-section of the countries across the world more particular to the country or the regions as discussed by the previous studies in the available literature (Abbott and Stiles, 2016; Bessey, 2012).

It was also established that the student's mobility around the world was influenced by the different factors which includes the changes in the geographic al distance, the housing prices and accommodation, tuition fee, the fluctuations in the rate of exchange, the quality of the universities in the host counties and the increasing

merchandise trade. There was also an earlier study which found that the university location or the economic environment was found to have a positive relationship to the nonresident enrolment (Baryla and Dotterweich, 2001).

In contrast to the pull factors, there are several studies that have been done in relation to the push factors. The higher numbers of the students studying abroad are known to come from the countries or the economies that are having a reduction in the labour force participation rates which includes the Former Soviet Union (FSU) (Chankseliani, 2016). In the UK situation some of the most important items were the economic wealth and the population, visa approvals rates and the bilateral trade (Jena and Reilly, 2013). The social and cultural factors are some of the push factors coupled with the financial interests (Caruso and de Wit, 2015).

## **2.5 Conclusion**

In conclusion there are many studies that have been conducted as presented in the literature review; the review shows that there is limited information or scanty information and literature on the issue of international students and how it influences the small economies. However, the different studies that have been done in the available literature have mostly covered or concentrated on the international tourists and tourism and how it influences the economic growth or the gross domestic products of the different countries or economies.

Further, the exchange rates have also been investigated and how it influences the growth of the economy given the fact that the inflow of foreign exchange in the economies is contributed significantly by the tourists. The growth of the international

student's sectors around the world have also been investigated significantly in terms of its growth and its progress over the years since the traditional economies.

## **Chapter 3**

### **BRIEF ECONOMY ON NORTH CYPRUS**

#### **3.1 Introduction**

This study seeks to find out the relationship between the international students and the economic performance in the small economy specifically the North Cyprus economy, which is characterized as a small island state. This was established back in the year 1983 in an island that was much divided and which was not necessarily appreciated or recognized by any other country in the world except for Turkey that is mainland Turkey. According to the SPO (2010) the population of the small island was over 300,000 and with a per capita income of about 14,421.77 US\$. The foreign trade relationship with the different countries have also been affected by the fact that the country was placed under sanctions for so many years and have not been really or politically recognized as an existing state buy other countries except for Turkey. North Cyprus is strategically placed in the Mediterranean's east. There are many challenges and difficulties that face the international tourism such as the high transportation costs and the unavailability of direct flights to the North Cyprus. One of the motivations for taking or conducting the current study is the is to find out how the revenues, income and the profits that are brought about by the international students impact on the small island economy that is Northern Cyprus.

### **3.2 Research Design**

The study that is referred to as descriptive is the study that is aimed at describing the features of a given group, individual or phenomenon. The descriptive research design will be adopted for this study because the same would be instrumental in explaining the relationship between the variables that is the change in the economic status of the Northern Cyprus and the changes in the number of the international students therein. The descriptive research design will be coupled with the quantitative research methods that will be used in the assessment of the influence of the international students on the economy of the North Cyprus.

The dataset that was adopted for the current study was composed of monthly data that was for the period beginning from the month of March. The different variables that were included in the dataset were composed of secondary data that was collected directly from the source in terms of the proxy and direct data. The different variables that were adopted in this study include international students, total employment, the Gross Domestic Product that is the GDP. The Gross Domestic Product was adopted as the dependent variable. The students that were studying in the Northern Cyprus in the higher education and were mostly from foreign countries (HE) were also adopted as one of the independent variables. The main source of data that was adopted for this study was gathered from the State Planning Organization for the country that is North Cyprus and the same was combined with the data acquired from the World Bank Indicators (2020). There are also different options or the measurements for the variables that are used in tourism in the available literature have been measured by use of the tourism receipts, number of arrivals from abroad among other things like booking and the duration of stay by visitors in hotels from outside the country. The

proxy that was used for the students in the higher education in the Northern Cyprus was the total number of students that are studying in the higher education institutions in North Cyprus. The changes in the economy and the performance were adopted or considered by use of a proxy that is the Gross Domestic Product for the North Cyprus (Katircioglu, 2010). The researchers also noted that the student's tourism can be considered to be part and parcel of international tourism. Even though the exchange rate has not been adopted in this study as one of the variables that influence the change in the economy in North Cyprus, the previous studies have utilized the same as a way of dealing with the problem of the omitted variable. The granger causality will be estimated for the different variables in order to check for the long-run relationship between the explanatory variables and how the same influence the small economy of North Cyprus.

### **3.3 Ethical Consideration**

In this study the researcher adapted the secondary data from the data source that is available and accessible to the members of the public. The results and findings will be reported by use of pools and groups in order to avoid disadvantaging some individuals or students. The reporting of the results and findings by use of groups and pools will also allow the researcher to address different aspects of the study findings without causing victimization of the universities of education institutions of higher learning.

## Chapter 4

### DATA, MODEL AND METHODOLOGY

#### 4.1 Data

In this thesis, based on the regression equation, Gross domestic product in real terms (GDPCON), number of university international student (NUS), labour force (EMP), fix capital formation as a percentage of GDP (KCON).

#### 4.2 Model

Several economic experts and research scientists implemented both the growth theories to highlight the significance of the correlation between financial sector and growth. The linkage between these two aspects has been thoroughly examined by Goldsmith (1969), McKinnon (1973), Shaw (1973) and others who have generated substantial findings that financial development corresponds with growth.

I devotedly emulate Fethi et. al. (2008) to establish my regression model. Let us consider the following the extended version of Cobb-Douglas production function:

(i.e., Solow model)

$$\ln(GDPCON)^* = \ln A_0 + \theta \ln(NUS) + \frac{\alpha}{1-\alpha-\beta} \ln(KCON) + \frac{\alpha+\beta}{1-\alpha-\beta} \ln(EMP)$$

Where all variables were already explained in data section.

### **4.3 Methodology**

Ordinary Least Square (OLS) technique was applied to determine the determinants of economic growth employing yearly data between the periods of 1977 and 2020 according to the Solow growth model. Descriptive statistics, correlation matrix, OLS regression and Granger Causality were used to consider the model under inspection.



## Chapter 5

### INTERPRETATION OF THE RESULTS

The researcher discusses the many outcomes and findings for this study in this chapter, which are provided in tables and figures.

All the data in the Descriptive Statistics table is visible and no abnormal number can be seen, which can indicate the accuracy of our data. The skewness is around zero for (LGDPCON, LNUS, LEMP and LKCON) .

Table 3: Descriptive Statistics

	LGDPCON	LKCON	LEMP	LNUS
Mean	3.9457	3.1841	4.9067	1.6862
Maximum	4.2960	3.5735	5.1483	1.9805
Minimum	3.5770	2.6649	4.6512	1.2041
Std. Dev.	0.22775	0.23951	0.12209	0.25150
Skewness	-0.054128	-0.16249	-0.15444	-0.51396
Kurtosis	-1.3081	-1.0792	-0.43432	-1.3328
Coef of Variation	0.057722	0.075219	0.024883	0.14915

Based on the results in Table shows that the coefficient for the variable Gross Domestic Product and the number of the students were found to have been 0.92 units. This indicates that there was a positive significant linear relationship between the two variables that is the number of international students in North Cyprus and the Gross Domestic Product that is the economic development in the North Cyprus. and high

correlation between dependent variables and independent variables. it seems it is a Multicollinearity however this is the model that we set up so we can not drop any variable from the model.

Table 4: Correlation Matrix

	LGDPCON	LKCON	LEMP	LNUS
LGDPCON	1.0000	0.95740	0.94694	0.92535
LKCON	0.95740	1.0000	0.88248	0.86818
LEMP	0.94694	0.88248	1.0000	0.88666
LNUS	0.92535	0.86818	0.88666	1.0000

Capital, employment and number of student all have a positive impact on economic growth in 10% of the level of significance (LNUS, LEMP, LKCON) all are significant so we are able to reject the null and accept the alternative which means 1 unit of NUS increase 26% unit of LGDPCON and all t-ratios are zero which means all data are very significant.

R-squared :96% change on the dependent variable can be explained by the change on the independent variable R-squared:96% variation of GDP can be explained by the variation of (LNUS,LEMP and LKCON) F-statistic is 642 and probability of F-statistic is zero which is significant in one percentage so it means that we are able to reject the null hypothesis which explains that (LNUS,LEMP,LKCON) they are jointly zero as we are rejecting this so at least one of them is not equal to zero and our model is

working well. and 4% is goes for error terms, the equation that we are using explain the changing quite well.

Table 5: Ordinary Least Square model

Dependent Variable: LGDPCON

Method: Least Squares

Date: 12/12/21 Time: 05:08

Sample (adjusted): 1 44

Included observations: 44 after adjustments

Regressor	Coefficient	Std. Error	T-Ratio
LKCON	0.48141	0.057397	8.3874[.000]
LEMP	0.40137	0.026835	14.9569[.000]
LNUS	0.26304	0.046319	5.6789[.000]
R-squared	0.96907	R-Bar-Squared	0.96756
S.E. of Regression	0.041022	F-Stat. F(2,41)	642.2031[.000]
Mean of Dependent Variable	3.9457	S.D. of Dependent Variable	0.22775
Residual Sum of Squares	0.068996	Equation Log-likelihood	79.6405
Akaike Info. Criterion	76.6405	Schwarz Bayesian Criterion	73.9642
DW-statistic	0.45433		

In the diagnostic test, an error appeared about serial correlation and functional form, in this case, we need to take the dependent variable as an independent variable and repeat the test

```

Diagnostic Tests
*****
*      Test Statistics      *          LM Version          *          F Version          *
*****
*      A:Serial Correlation*CHSQ(1) = 25.7726[.000]*F(1,40)      = 56.5581[.000]*
*      *
*      B:Functional Form   *CHSQ(1) = 7.8324[.005]*F(1,40)      = 8.6624[.005]*
*      *
*      C:Normality        *CHSQ(2) = 2.5033[.286]*          Not applicable
*      *
*      D:Heteroscedasticity*CHSQ(1) = .24711[.619]*F(1,42)      = .23721[.629]*
*****

```

A:Lagrange multiplier test of residual serial correlation  
B:Ramsey's RESET test using the square of the fitted values  
C:Based on a test of skewness and kurtosis of residuals  
D:Based on the regression of squared residuals on squared fitted values

In the new OLS, we found lag value which is our previous economic growth has got impact on the current economic growth

**Table 6: Ordinary Least Square model**

Dependent Variable: LGDPCON

Method: Least Squares

Date: 12/12/21 Time: 05:08

Sample (adjusted): 1 44

Included observations: 44 after adjustments

Regressor	Coefficient	Std. Error	T-Ratio
LKCON	0.14638	0.034448	4.2493 [.000]
LEMP	0.086566	0.025283	3.4239 [.000]
LNUS	0.044667	0.025072	1.7816 [.000]
LGDPCON(-1)	0.75830	0.054737	13.8536 [.000]
R-squared	0.99447	R-Bar-Squared	0.99404
S.E. of Regression	0.017227	F-Stat. F(3,39)	2335.9[.000]
Mean of Dependent Variable	3.9542	S.D. of Dependent Variable	0.22314
Residual Sum of Squares	0.11574	Equation Log-likelihood	115.7190

No serial correlation appears in the new diagnostic test which means our test is done and all results are acceptable.

```

Diagnostic Tests
*****
*   Test Statistics   *   LM Version   *   F Version   *
*****
*   A:Serial Correlation*CHSQ(1) = 1.1590[.282]*F(1,38) = 1.0526[.311]*
*   *   *   *   *   *   *
*   B:Functional Form *CHSQ(1) = 1.2639[.261]*F(1,38) = 1.1507[.290]*
*   *   *   *   *   *   *
*   C:Normality      *CHSQ(2) = 1.8949[.388]*   Not applicable   *
*   *   *   *   *   *   *
*   D:Heteroscedasticity*CHSQ(1) = 3.3154[.069]*F(1,41) = 3.4252[.071]*
*****

```

A:Lagrange multiplier test of residual serial correlation

B:Ramsey's RESET test using the square of the fitted values

C:Based on a test of skewness and kurtosis of residuals

D:Based on the regression of squared residuals on squared fitted values

### Table 7: Causality test

```

Variable Deletion Test (OLS case)
*****
Dependent variable is LGDPCON
List of the variables deleted from the regression:
INPT          LKCON          LEMP
44 observations used for estimation from 1977 to 2020
*****
Regressor          Coefficient          Standard Error          T-Ratio[Prob]
LNUS                2.3080                .033923                68.0352[.000]
*****
Joint test of zero restrictions on the coefficients of deleted variables:
Lagrange Multiplier Statistic    CHSQ(3)= 43.5645[.000]
Likelihood Ratio Statistic       CHSQ(3)= 203.0778[.000]
F Statistic                       F(3,40)= 1333.7[.000]
*****

```

Table 7 also indicates that there is a uni-directional flow from international students to economic growth.

## **Chapter 6**

# **SUMMARY FINDINGS, CONCLUSION AND RECOMMENDATION**

This chapter is composed of the summary findings and inclusions of the study on the relationship between the international students and their number or expenditure on the economy of the small island specifically the North Cyprus.

### **6.1 Summary Findings**

The results and findings of this study established that there was a positive relationship between the higher education on the island and growth in the economy that is the gross domestic product therein. It is important to appreciate the increase in the number of students over the years and the growth in the higher education sector in North Cyprus. In summary the growth led by higher education has been confirmed to have been existent in the estimated model which means that the North Cyprus in the long-term by utilization of the growth models framework results and the granger causality that was estimated in this study.

The main findings for the current study are that the higher education sector in the North Cyprus has an influence in the real income growth of the Gross Domestic Product from the estimated regression model that is the Solow model. The Turkish Cypriot authorities will be able to utilize the current study findings because they can use the same in the administration by the Turkish Cypriot. The Administration should consider

favoring or giving more chance and priority to the institution involved in the support of the higher education because the same has a potential to be able to take the place of the traditional tourism sector in the country courtesy of the problems that are facing the North Cyprus due to politics. The reality is despite the adverse injunctions and sanctions that have been placed against the North Cyprus for more than 40 years the country's Higher education sector is able to thrive and do tremendously well in the existing circumstances.

It is evident that the number of the students has a positive influence, or it increases the Gross Domestic Product levels in the Country. This is because the rise in the number of students leads to a rise in the economic growth; this means that the study is in agreement to the Katircioglu et al., (8888) which found a unidirectional association, this is not the same as the current study because the researchers included the students that are in the domestic higher education students that is the numbers in the time series data that was used.

In contrast to the study by Katircioglu et al., (8888) the variable labour force that was adopted in the model estimated in this study was found to not have a causality effect or influence on the Gross Domestic Product. This means that when the economy is dominated by the service sector where the employee needed or required by the market are of a certain level of academic qualification. There is also the issue of increased expenditure among most international students especially when there is devaluation of the domestic currency which means that the purchasing power parity in the domestic economy that is in North Cyprus is usually strengthened in terms of the currency due to the inflow of the foreign currency by transfer payments for the international students

group. The higher government expenditure can also be supported by the increased tax revenue from the foreign countries that have their students in North Cyprus. Essentially, this means that the increased spending by the government would also lead to bidirectional association between the Gross Domestic Product and the expenditure by the government.

Even more sensible is the fact that when there is increased expenditure on the part of the domestic government the local economy the same would lead to an accumulation of the human capital, the same would lead to improvement in the economy in terms of benefits because there is the issue of human capita that is quality. Notably, the expenditures in the different sectors in the country which includes infrastructure, health and the education sector by the government means that there would be motivation to enroll in the domestic academic institution of higher learning. The technology progress, human capital and the labour force also have a significant influence on the progress in the economy because they are important for takeoff of the economy because these sectors are interrelated. The more educated the workforce or the laborers the higher their performance and the utility offered to the organization in the domestic economy. This also means that when there is improvement in the education sector that is higher education the same is a plus to the domestic economy because the same labour force can be used to change the domestic economy that is in terms of the contribution as independent experts and the increase in the revenues to the domestic economy authority.

## **6.2 Conclusion**

This research is important in shedding light on the various parameters and stakeholders who play major roles towards the advancements of international students in Cyprus.



As already determined, the international student body within the Turkish Republic of North Cyprus has positive impacts on the labor force, expertise and overall performance of the domestic economy. To further solidify TRNC institutions as the destination of choice for international students, and to improve their overall student experience and transition into the local labor force, this research provides key framework and measures for the relevant authorities and stakeholders on their quest to providing a synergy of thought and solutions to some of the short-term and long-term problems. The partnership includes joining other scholars researching on similar topics especially when collecting data so that it becomes easier when the results and the data collected is compared making it more accurate and reliable.

The research conducted demonstrates some level of biasness since the data collected is majorly from international students who are currently enrolled or have graduated from institutions of learning located in TRNC. This is due to the easiness and availability of information in the said institutions as opposed to institutions in the South. Due to the inaccessibility and less budgeting, which has been further reverberated by the Covid 19m pandemic, hindering travel, conferencing and physical interactions, it has been difficult to carry out much of the survey in South Cyprus. There is therefore need for the government to ensure an economic balance between the North and the South making it more accessible even to international students. There is also need for a federation between Greek and Turkey to reduce the political instabilities caused by the two. There is also need to involve all the local members and villagers who are source of diversity and who can offer something different and unique to the international students.

### **6.3 Recommendation**

The current study explores the influence of the international students or the association between the international students and the economy of the small island that is North Cyprus which was presented by use of the Gross Domestic Product therein and the adoption of the Solow growth model approach in the assessment of the association. The main findings of the stud suggested that the international students or their presence have a long-term association or granger causes the changes in the economy or the gross domestic product in the small Island. That the inflow of the higher education students in the North Cyprus has a positive or a direct influence on the domestic economy. The granger causality tests demonstrate that the higher education growth is seen to have a unidirectional causation or causality to the gross domestic product in the long run. Thus, for the Turkish Cypriot economy the HELG hypothesis is affirmed. The main findings or the study revealed that the higher education precedes the Gross Domestic Products. These results and findings are important and crucial because they demonstrate that the traditional tourism industry has been replaced as the major earner of foreign exchange for the country and as such the government should give more credit or attention to the academic or the higher education sector.

There are different types of recommendations that the researcher or the current study has for the country and the economy at large which can be categorized into either direct or indirect. The direct recommendations are those that are directly achievable and those which may have a direct impact on the economy of Northern Cyprus. Some of the most direct recommendations from the study is the fact that the government of North Cyprus can be able to capitalize completely on the academic or the education sector (higher) as a form of a comparative advantage and which would be paramount

because regardless of the form of sanctions the students will still be attracted by the need for education. The higher education sector for the Northern Cyprus have over the years been able to come out clearly as the winning sector for the foreign exchange earner and the support for the small economy of the Island. It is recommended by the study that the government can work towards making the education and the facilities in the North unrivaled so that when researcher and academicians desire only the best they get it at the North Cyprus which will make the country an academic hub.

It is also recommended that since the country appreciates and acknowledges the importance of higher education in the economic progress of North Cyprus the government should put in place measures which would ensure that as this sector grows it is able to support other sectors which needs much support to be able to do comparatively well as the higher education sector. Some of these include the sports among the youths in the North Cyprus and more importantly the issue of manufacturing sector which would also support the economy if it could stand on its own. If this can be achieved, then it means that the government of North Cyprus would be able to have its own people and influence on the global market and competition in terms of major manufacturing of goods and services or the automation of the same. In most academic institutions of higher learning in different countries the government or the administrations therein would usually come-up with state of the art facilities and the academic stationary there would be well thought out but what is forgotten is the accommodation for the students. This is a key issue which the study recommends to be given priority especially if this can be achieved or considered with the community in mind such that here is public private partnership which would allow the locals to

interact and provide alternative housing for the students where the numbers have gone beyond the school or university capacity for accommodation.

It is also recommended that when the local universities are well established, they can think of a way in which they can come-up with plans to setup parallel institutions in other partner countries especially where they have huge support and students or client base so that they can present and provide the services from therein.

## REFERENCES

- Agénor, P.R.: Output, devaluation and the real exchange rate in developing countries. *Rev. World Econ.*(*Weltwirtschaftliches Arch.*) 127(1), 18–41 (1991).
- Alderman, H., Behrman, J.R., Ross, D.R., Sabot, R.: The returns to endogenous human capital in Pakistan's rural wage labour market. *Oxf. Bull. Econ. Stat.* 58(1), 29–55 (1996).
- Al-Qudsi, S.S.: Returns to education, sectoral pay differentials and determinants in Kuwait. *Econ. Educ.Rev.* 8(3), 263–276 (1989).
- Balaguer, J., Cantavella-Jordá, M.: Tourism as a long-run economic growth factor: the Spanish case. *Appl.Econ.* 34(7), 877–884 (2002).
- Becker, G.S.: *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education.* University of Chicago Press, Chicago (1964).
- Beneito, P., Ferri, J., Molto, M.L., Uriel, E.: Determinants of the demand for education in Spain. *Appl.Econ.* 33(12), 1541–1551 (2001)
- Blankenau, W.F., Simpson, N.B.: Public education expenditures and growth. *J. Dev. Econ.* 73(2),583–605 (2004) Testing the higher education-led growth hypothesis 743.

- Cellini, R.: Implication of Solow's growth model in the presence of a stochastic steady-state. *J. Macro-econ.* 19(1), 135–153 (1997).
- Cortés-Jiménez, I., Pulina, M.: Inbound tourism and long-run economic growth. *Curr Issues Tour* 13(1), 61–74 (2010).
- Dahlin, B.: The State, the Universities, and Civil Society. Paper presented at the ECER 2002, Lisbon, pp. 11–14 (2002)
- Denison, E.F.: *Why Growth Rates Differ*. The Brookings Institution, Washington (1967)
- Dristakis, N.: Tourism as a long-run economic growth factor: an empirical investigation for Greece using causality analysis. *Tour. Econ.* 10(3), 305–316 (2004)
- Edwards, S.: Openness, outward orientation, trade liberalization, and economic performance in developing countries. World Bank PPR, Working Paper No: 191 (1989)
- Glewwe, P., Jacoby, H.: Economic growth and the demand for education: is there a wealth effect? *J. Dev. Econ.* 74(1), 33–51 (2004).
- Gujarati, D.N.: *Basic Econometrics*, 4th edn. McGraw-Hill, New York (2003)
- Gunduz, L., Hatemi-Jb, A.: Is the tourism-led growth hypothesis valid for Turkey? *Appl. Econ. Lett.* 12, 499–504 (2005).

- Jayawardena, C., Ramajeessingh, D.: Performance of tourism analysis: a Caribbean perspective *Int. J. Contemp.Hosp. Manag.* 15(3), 176–179 (2003)
- Kamin, S.B., Rogers, J.H.: Output and the real exchange rate in developing countries: an application to Mexico *J. Dev. Econ.* 61(1), 85–109 (2000)
- Katircioglu, S.T.: International tourism, higher education, and economic growth: the case of North Cyprus. *World Econ.* 33(12), 1955–1972 (2010)
- Katircioglu, S.: Trade, tourism and growth: the case of Cyprus *Appl. Econ.* 41(21), 2741–2750 (2009b)
- Katircioglu, S.: Testing the tourism-led growth hypothesis: the case of Malta *Acta Oecon.* 59(3),331–343 (2009)
- Kim, H.J., Chen, M.H., Jang, S.S.: Tourism expansion and economic development: the case of Taiwan *Tour.Manag.* 27(5), 925–933 (2006)
- Knight, M., Loyaza, N., Villaneura, D.: Testing the neo-classical theory of economic growth. *IMF Staff Paper*,40, 512–541 (1993)
- Knight, M., Loayza, N., Villanueva, D.: Testing the neoclassical theory of economic growth: a panel data approach. *IMF Working Paper* 106 (1992)
- Lim, C.: An econometric classification and review of international tourism demand models *Tour.Econ.* 3(1), 69–81 (1997)

- Luzzi, G.F., Flückiger, Y.: An econometric estimation of the demand for tourism: the case of Switzerland *Pac.Econ. Rev.* 8(3), 289–303 (2003)
- Mankiw, N.G.: The growth of nations *Brooking Pap. Econ. Activ.* 25(1), 275–310 (1995)
- Mankiw, G.N., Romer, D., Weil, D.N.: A contribution to the empirics of economic growth *Q. J. Econ.* 107,407–437 (1992)
- Mehmet, O., Tahiroglu, M.: Growth and equity in microstates: does size matter in development? *Int. J. Soc.Econ.* 29(1–2), 152–162 (2002)
- McKinnon, R.: Foreign exchange constraint in economic development and efficient aid allocation *Econ.J.* 74, 388–409 (1964)
- Narayan, P.K.: The saving and investment nexus for China: evidence from cointegration tests *Appl.Econ.* 37(17), 1979–1990 (2005)
- Narayan, P.K., Narayan, S.: Estimating income and price elasticities of imports for Fiji in a Cointegration framework *Econ. Model.* 22, 423–438 (2005)
- Narayan, P.K., Smyth, R.: The relationship between the real exchange rate and balance of payments: empirical evidence for China from co-integration and causality testing *Appl. Econ. Lett.* 11, 287–291 (2004)



- Oh, C.K.: The contribution of tourism development to economic growth in the Korean economy *Tour.Manag.* 26, 39–44 (2005)
- Omotor, D.G.: The role of exports in the economic growth of Nigeria: the bounds test analysis *Int. J. Econ.Perspect.* 2(4), 222–235 (2008)
- Ongan, S., Demiroz, D.M.: The contribution of tourism to the long-run Turkish economic growth *J. Econ.* 53(9), 880–894 (2005) 123744 S.
- Katircio ğlu et al. Pesaran, M.H., Shin, Y.: An autoregressive distributed lag modelling approach to cointegration analysis, Chap.11. In: Strom, S. (ed.) *Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium*. Cambridge University Press, Cambridge (1999)
- Pesaran, M.H., Shin, Y., Smith, R.J.: Bounds testing approaches to the analysis of level relationships *J. Appl.Econom.* 16, 289–326 (2001)
- Phillips, P.C.B., Perron, P.: Testing for a unit root in time series regression *Biometrika* 75, 335–346 (1988)
- Prasad, N.: Growth and social development in the Pacific island countries *Int. J. Soc. Econ*, 35(12), 930–950 (2008)
- Psacharopoulos, G.: *Education and national development: a comparative perspective:* by Ingemar Fagerlind and Lawrence J. Saha. Oxford: Pergamon Press, 1983.

237 pp. U.S. \$32 (cloth), U.S.\$13 (paper). *Econ.Educ. Rev.* 7(3), 367–368 (1988)

Psacharopoulos, G.: Time trends of the returns to education: cross-national evidence  
*Econ. Educ.Rev.* 8(3), 225–231 (1989)

Psacharopoulos, G., Woodhall, M.: *Education for Development*. Oxford University Press, London (1985)

Psacharopoulos, G.: *Education and economic growth in the developing countries: Peter Mandi*. Budapest: Akademiai Kiado, 1981 (distributed in the US by Humanities Press, Atlantic High-lands, NJ). pp. 225. Price U.S. \$25.00. *Econ. Educ. Rev.* 3(4), 353–354 (1984).

Pindyck, R.S., Rubinfeld, D.L.: *Models and Economic Forecasts* McGraw-Hill, New York (1991)

Ram, R.: Can educational expansion reduce income inequality in less-developed countries? *Econ. Educ.Rev.* 8(2), 185–195 (1989)

Romer, P.M.: Endogenous technological change *J. Political Econ*, 98(5), 71–102 (1990).

Shan, J., Wilson, K.: Causality between trade and tourism: empirical evidence from China *Appl. Econ.Lett.* 8, 279–283 (2001)

- Schultz, T.W.: Investment in human capital *Am. Econ. Rev.* 51, 1–17 (1961)
- Schultz, T.W.: Education and economic growth: return to education. *Readings in the Economics of Education*, UNESCO (1968)
- Song, H., Romilly, P., Liu, X.: (1997) An empirical study of outbound tourism demand in the UK. Paper Presented at the 17th Annual Symposium on Forecasting, Barbados, June 19–21
- State Planning Organization (SPO): Economic and Social Indicators. Follow Up and Coordination Department, Prime Ministry, North Cyprus (2010)
- Stevens, P., Weale, M.: Education and Economic Growth. National Institute of Economic and Social Research, London (2003).
- Temple, J., Voth, H.J.: Human capital, equipment investment, and industrialization *Eur. Econ. Rev.* 42(7), 1343–1362 (1998)
- UNEP (United Nations Environment Programme). *Tourism*. Paris (2002)
- Wilkinson, P. F.: Tourism in Small Island Nations: a Fragile Dependency', *Leis. Stud.* 6(2), 127–146.
- Witt, S.F., Witt, C.A.: Forecasting tourism demand: a review of empirical research *Int. J. Forecast.* 11(3), 447–475 (1995) *World Development Indicators*. World Bank <http://databank.worldbank.org/ddp/home.do?Step=12&id=4> &CNO=2, (2010). Accessed on February 2012