Economic Analysis of Tourism
Sector in Pakistan

By

Amna Noor

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Department of Economics,
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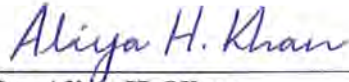

Supervisor

Dr. Aliya H. Khan

A dissertation submitted to the Department of Economics, Quaid-i-Azam University, Islamabad in partial fulfillment of the requirement for the degree of Master of Philosophy in Economics

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CERTIFICATE

It is to certify that this thesis submitted by Miss. Amna Noor is accepted in its present from by the Department of Economics, Quaid-i-Azam University, Islamabad as satisfying for the requirement for partial fulfillment of the degree of Master of Philosophy in Economics
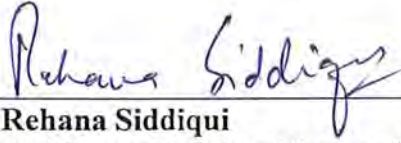
Supervisor

Dr. Aliya H. Khan
Professor & Chairperson
Department of Economics
Quaid-i-Azam University. Islamabad
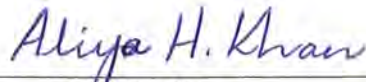
External Examiner

Dr. Rehana Siddiqui
Chief of Research & Head Research Division,
Growth & Environment, Pakistan Institute of
Development Economics, (PIDE)
QAU, Campus, Islamabad

Chairperson

Dr. Aliya H. Khan
Professor & Chairperson
Department of Economics
Quaid-i-Azam University. Islamabad

Dedicated to

"My Parents"

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APPENDIX

Acknowledgment

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<div align="right">Amna Noor</div>

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Chapter 1

INTRODUCTION

1.1   Stating the Problem:

International tourism has become a major foreign exchange earner for many low-income countries and small islands, and it is a principal export for 83% of developing countries (WTO, 2001). The economic importance of the Travel and Tourism (T&T) sector should not be underestimated. 'Tourism is the world's leading industry and the worldwide amount of tourism spending increases significantly year by year. Tourism is one of the world's largest industries and has experienced rapid growth in many developed and developing nations over the last three decades (Li et.al. 2004).

The United Nations World Tourism Organization (UNWTO) estimates 898[1] million tourists traveled worldwide during 2007, reflecting an increase of 6.1 percent over the previous year. While Pakistan's share in world tourist arrivals during 2007 was 0.09 percent, as compared to 0.11 percent in 2006 showing a decrease of 18.2 percent over 2006. However, the international tourist arrivals reached 924 million in 2008, representing a growth of 2 percent compared with 2007 (tourism demand slowed in the second half of 2008, however, attributable to the deteriorating international economic situation). The World Travel & Tourism Council (WTTC) estimates that, from direct and indirect

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[1] www.un.org

activities combined, the T&T sector now accounts for 9.9 percent of global GDP, 10.9 percent of world exports, and 9.4 percent of world investment.

Tourism brings obvious economic benefits, the most important being generation of foreign exchange and the creation of jobs. Therefore, it is no surprise that tourism is an important economic activity in many parts of the world, (Katafono and Gounder, 2004). The increasing importance of the role that tourism plays in the world economy has drawn the attention of many scholars. Pizam and Fleischer (2002) have argued that tourism and international travel are sensitive industries, highly dependent on peace and security. Pizam (1999) has mentioned in his study about the sensitive variable, crime rate; and said that every day a crime or a violent act is occurring at some tourist destinations in the world causing reluctance on the part of tourists to visit these destinations.

Each destination has its own unique characteristics, which significantly influence the decision-making undertaken by a tourist in selecting a destination. Detailed reviews of such studies can be found in (see, for example, Sinclair 1998; Crouch 1994; Witt and Witt, 1995; Lim, 1997; Song and Li, 2008). However, research on the determinants of inbound tourism has focused mainly on explaining tourism demand in developed countries, with little attention given to developing countries (Naude and Saayman, 2005).

Tourism is a sector that involves a multiplicity of economic activities responding to differentiated demands with specific characteristics at the national and international levels. However, the increasing importance of the tourism sector in terms of its contribution to the

national product, the employment and the balance of payments creates the need to investigate the determinants of tourism flows within a specific country.

In Pakistan, international tourism is viewed though not very strongly, as a mean of attracting foreign exchange and as a stimulus to economic growth. This study aims to analyze the determinants of tourism demand by using income, price, and exchange rate elasticities for examination among the set of demand factors as they are the fundamental concepts in economic demand theory and they are the most frequently examined variables in international tourism demand studies (Anastasopulos. 1989; Kulandran and Witt. 2003; Crouch 1992; Lee, 1996; Luzii and fluckiger, 2003).

In the tourism demand context, the decision making involves making a choice among a group of alternative destinations. A price change in one destination may influence tourists' decisions on traveling to a number of alternative destinations, as well as their expenditure in those destinations.

During the past three decades, econometric models have been used to estimate the demand for international tourism. However, these models were mostly tested for developed countries and specifically, Pakistan has not been studied. A majority of the studies have used time-series data to model the travel demand for a single origin country and destination country, and their empirical results were often cited in terms of elasticities of demand that were assumed to be constant over time.

Many past studies have focused on international tourism demand forecasting, using variables such as exchange rates, the GDP in the country of origin, the Consumer Price Index (CPI), income, transportation costs, special events, crime rates, weather conditions, and population size (Kim and Wong 2006; Uysal and Crompton 1985; Webber 2001; Witt and Witt 1995).

Tourism demand analysis forms an integral part of sound decision making regarding investments in both the public and private sectors, as well as in short-term marketing decisions. For example, it provides policy implications and is of value to anyone responsible for formulating strategies or promoting tourism products and services. Measures of tourism demand are also used to assess the contribution of the tourism industry to the economic welfare of the local economy as a whole and to provide a guide to the use and efficient allocation of resources. Therefore, tourism demand represents a key element in achieving effective development.

Building on this work, we aim to contribute to a better understanding of the international tourism flows to Pakistan, by developing a dynamic model that quantifies the relative importance of each determinant in the final demand for tourism.

1.2   Objectives of the Study:

This research has the aim and objective of seeking to know which factors affect international tourist demand arrivals to Pakistan by using the international tourism

demand model to explain international tourist's behavior in Pakistan. The observed significance of the lagged dependent variable in such models indicates empirically that a dynamic structure is necessary part of the model specification (Fujji and Mak, 1981; Witt and Martin, 1987; Sinclair and Stabler, 1997).

Overall, this study also aims to verify the determinants of tourism demand in Pakistan. This gives a basis to offer some policy advice for the government to support this sector.

1.3   Arrangement of the Study:

The present study is structured as follows. Chapter 2 gives the overview of inbound and outbound tourism demand studies in different countries; it enumerates the most widely used determinants of tourism demand and generally accepted estimation techniques. Chapter 3 describes shortly the state of tourism sector of Pakistan, while Chapter 4 provides detailed discussion on data, construction of variables and estimation techniques. The empirical analysis of the results is carried out in Chapter 5. Finally, Chapter 6 summarizes the main findings of the study and offers policy recommendations based on the research results.

Chapter 2

REVIEW OF LITERATURE

Tourism demand has been quite extensively investigated in the literature for different countries. Several thorough reviews on the determinants of international tourism demand have been published (e.g., Crouch, 1994a, 1994b; Witt & Witt, 1995; Lim, 1997a; Sinclair, 1998; Li et al., 2005; Song & Li, 2008). From these studies it can be concluded that tourism become an important sector in many countries as the source of foreign exchange earnings.

2.1   Introduction:

This chapter reviews the important issues related to the theoretical and empirical work, estimation techniques in the area of tourism demand, its determinants, and economic impact of tourism demand in a destination and also focuses on analysis of tourism demand and econometric tools used. The tourism sector is getting attention for the last many years. As Crouch (1994ab) has noticed the growth in the study of tourism demand has paralleled the growth in demand itself over the past three decades. Pike (2002) has mentioned that researchers now have a wealth of destination image literature at their disposal. He has given a review of 142 destination image papers, published in the literature during the period 1973–2000 based on research undertaken to produce a synthesis of key characteristics of tourism demand analysis.

2.2   Defining Tourists:

Here are some definitions of tourists given by different international organizations, which are as follows:

International Union of Official Travel Organization (IUOTO) that *"tourist are temporary visitors staying at least 24 hours in the country visited and the purpose of whose journey can be classified under one of the following; (a) leisure (recreation, holiday, health, study of religion and sports); (b) business, family, mission, meetings."* (IUOTO 19963:14). Tourism is very vast sector and includes many industries in it both the service and goods industry classification. Tourism itself has taken as luxury good and regarded as the source of foreign exchange for a country.

World Tourism Organization (WTO) *"Tourist is a short-term visitor who visits a country other than in which he resides for a stay of over night for any purpose other than an occupation".*

Organization of Economic Co-operation and Development (OECD) tourism committee, *"An international tourist is a person who makes temporary visits across international borders, resides there for at least twenty-four hours to less than a year, and for a purpose other than establishing residence".*

2.3   Defining Tourism Demand:

According to the literature, the theory that explains the tourist flows between the origin and the destination country is based on the demand function. Demand for tourism is of two types as defined by United Nations (1978). Tourism is defined as private consumption, as demand of private household and as a part of production when visits are for a purpose of business. O'Hagan and Harrison (1984) stated that "*tourism is a demand for a 'bundle' of goods and services*".

The product resulting from the demand of tourism is an aggregate amount of the individuals desire to travel within a specific time period. From the receiving country point of view, tourism demand represents the set of goods and services that the visitors attain during a specific period of time of their stay. Therefore, tourism demand refers to the demand for tourism-oriented products which include accommodation, food service, transportation, travel agencies, recreation (Lim, 1997b).

Song and Witt (2003) have been defined tourism demand as the amount of a set of tourist products that the consumers are willing to obtain during a definite period of time. Other authors also defines tourism demand in different ways for example as Croes & Vanegas (2005) in their recent study said that tourism demand is the amount of tourist goods that a tourist willing and able to buy at a specific time and under certain conditions.

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2.4   Measures of Tourism Demand:

The literature review on the econometric modeling of tourism demand shows that there is more than one measure of tourism flows. In fact, the majority of the empirical studies in this area define international tourism demand by using one of the following measures: The number of foreign visitors crossing the borders; the number of nights spent by visitors from abroad; the receipts originated from the visitors spending; or the stay-length of tourists visiting a country. None of these measures is fully satisfactory in encompassing all the aspects which characterize the demand for tourism in a specific location.

O'Hagan and Harrison (1984) have used share of total US tourist expenditure in Europe. Witt and Martine (1987) have taken the number of visits per capita for holiday purpose in case of outward tourism from the U.K and Germany.

However, according to Crouch (1992), almost seventy percent of the studies that estimated tourism demand functions have used the number of visitors (entrances) as the dependent variable (Qui and Zhand, 1995; Akis, 1998; Rossello *et al*, 2005; Giacomelli, 2006). The main reason for this preference has been the unavailability of data on tourism spending. Crouch (1992) has explained that an understanding of international tourism demand is of considerable importance. For commercial and economic activity, international tourism has been attracting increasing attention.

Pyo (1991) has built a linear expenditure model for demand analysis of domestic tourism of the United States. Sheldon (1993) has examined the tourism demand through the relationship between tourist arrivals and tourists expenditures to a given destination and noticed that both the measures of international tourism that is volume and expenditure are important for a destination.

Syriopoulos (1995) has contributed the first application of dynamic econometric modelling of tourism demand measuring by tourist arrivals for Mediterranean destinations with large tourism sectors (Spain, Portugal, Italy, Greece and Turkey) by European tourist origin countries, as well as the USA.

2.5   Factors that Influence Tourism Demand:

Tourism is an export commodity in which consumption occurs in the place of supply and demand for it responds to most of the factors that affect the demand for other good and services in the economy (Quayson and Var, 1982). It has been noticed by Witt and Martine (1987) that people are more aware of exchange rates than relative costs, as exchange rates fluctuate more rapidly than relative rates of inflation, in short term. Crouch (1992) focused on income and price elasticities in the context of international tourism and identified factors, and argued that income and price are fundamental elements of economic theory and the law of demand.

The relationship between the demand for traveling, income of origin country, tourism prices, transportation cost, and exchange rate have received considerable attention in empirical work. In another study Crouch (1994a) mentions that there are huge number of potential factors explaining tourism demand and the specification of the demand function varies according to the countries or regions used in research. These can be the time period of the study, the type of the data (time series or panel data) and the nature of tourism (holidays, business trips and visits to family or friends). The choice of the explanatory variables to be included in the models is sensitive to problems, such as, the degree of freedom loss, data reliability, collinearity problems, omitted variable bias or endogeneity inconsistency.

The consumer price index provides satisfactory estimation results compared with the tourist price index previous studies constructed argued by Syriopoulos (1995). The impact of changes in relative price levels on the demand for tourism in a destination also depends on the degree of substitutability of that destination in relation to its closest competitors. Lim (1997) concluded that tourists' income, prices of tourism goods and services and transportation costs are the most important determinants that influence international tourism demand.

In order to develop appropriate polices for tourism sector in Turkey, Akis (1998) studied the determination of the factors affecting tourism demand for Turkey the demand from western countries and also USA, Japan and Canada. Tourist arrivals are taken as a function of per capita income in origin, prices in destination, cost of travel, distance between the

countries and the attraction of the host country. To avoid the problem of multicollinearity, single national income variable instead of per capita income and population and single relative price variable instead of CPI and exchange rate has been used. The results show that there is positive relationship between tourist arrivals and national income and negative relation between tourist arrivals and relative prices.

Vogt and Chutima (1998) have taken demand for tourism dependent on current and lagged values of income and relative prices and price of tourism is determining by consumer price index.

Coshall (2003) has noticed that there were few formal studies designed to quantify the impact of terrorism on international travel and tourism. His study quantifies the effect of terrorism on tourism in the form of three potential interventions on air passenger flows from the United Kingdom to a series of destinations, including the United States, mainland Europe, North Africa, and the Near East and Middle East. Intervention analysis is used to see if these warnings and the Lockerbie tragedy affected U.K. travel demand. The study found that perceptions of danger vary according to the destinations involved and the state that the Gulf crisis had reached and also that intervention analysis is a powerful tool in the study of travel demand.

Dwyer and Kim (2003) have aimed to develop a model and indicators of destination competitiveness that will enable comparison between countries and between tourism-sector industries. A range of factors influence destination competitiveness, including price and

non-price factors and there is a need to develop indicators which reflect this. Elasticities of demand measure changes in demand as a function of changes in its determinants.

Song and Wong (2003) have stated in their study that standard economic theories and models examine that the determinants of consumer's demand for a specific product are income level within the economy, the price of the product, and the price of the substitute.

Seqveira and Carla (2005) have employed panel data techniques that closely followed the empirical growth rate and the influence of tourism variables on economic growth in a broad panel data. To test the significance of tourism in explaining economic growth, the following variables were used; lagged real GDP, secondary male enrolment, investment-output ratio, government consumption-output ratio, export import to output ratio, black market premium, tourism receipts in percent of export, tourism arrivals as a population proportion, and tourism receipts as percent of GDP.

It was noticed that tourism, by itself, can not account for the high growth rates of countries that specialized in tourism. In general, variables linked with tourism are not significantly related to economic growth. Economic theory postulates that income and price type factors play central role in determining the demand for international tourism (Croes and Vanegas, 2005) and determining it is an empirical question. Rossello et.al. (2005) have mentioned that the cost of goods and services bought in the destination would normally account for the major part of the total price.

Transportation costs between a destination and an origin, and/or alternative destinations, can be a significant component of the price of tourism product (Kliman, 1981).

Wong *et. al.* (2007) have examined whether combining the tourism forecasts generated from different models can improve forecasting accuracy. Their study showed that own price, substitute prices and consumer's income are the primary factors influencing Hong Kong tourism demand. Economic determinants of tourism demand have been well-documented in the literature on modeling tourism demand given in the recent study of Allen *et.al.* (2008).

2.6   Specification and Estimation Issues:

Papadopoulos and Hafiz (1985) have examined the growth of foreign tourism in Greece, from 1960 to 1982, and checked the usefulness and impact of tourism on the national economy. It was established that the growth of tourism compares well with the growth of merchandise export. There are beneficial linkages with the local industries such as handicraft and entertainment which are also characterized by low import content. It has been noticed that foreign exchange earnings from tourism have grown faster than any other sector in the Greek economy. Tourism also has favorable impact on certain local economies. It has been concluded that tourism should be given priority on par with other economically significant sectors in the Greek economy, and should be used as a major tool in the economic development process of Greece.

While in another study Witt and Martine (1987) have developed a set of econometric models for forecasting international tourism demand, as represented by the number of tourist visits from West Germany and United Kingdom to their respective major destinations.

Smeral (1988) has quantified certain significant influence factors as well as attempted to estimate how tourism demand reacts to an increase in economic growth and to an alteration of tourism prices. The study assumed that income elasticity of demand for travel and tourism would be higher than that of the total overall demand for household. The demand for tourism services depends significantly on the level and the growth of GNP. It has observed that in the short run only economic expectations regarding real income and the labor-market situations are important, while economic growth influences tourism demand through development of disposable real income. Therefore, instead of taking over night stays as an indicator of tourism demand, he has used the real revenue from international tourism. The study observed that the response of tourism demand in competing countries caused by an increase in relative prices is negative.

Eadingan and Redman (1991) have taken tourism as fastest growing industry and developed the relation between tourism and economics. The consumer demand theory has been used in this econometric study to observe how demand for tourism reacts to changes in main determinant of demand such as income level, relative prices or other important influences in tourist behaviors. The study observed that expenditure was influenced by income level and relative prices at the tourist destination. The response of travel

expenditure to the exchange rate has depends on the countries of origin, the time period covered in the study and the way exchange rate is define. They noted that single equation system suffer from the identification problem.

The results obtained for the estimation of tourism demand can be highly reliant on the functional form as indicated by Morely (1991), who stresses that tourism demand is difficult to handle without econometric tools and it is modeled using techniques, such as multiple regressions to fit linear or log linear model with small set of explanatory variables.

In their study Vogt and Chutima (1998) estimated the real income and relative price elasticities of demand for Thailand's export of tourism by means of annual data 1960-93. The DF statistics indicate that most of the variables are not stationary in level form but most are stationary in first difference form.

Durbary (2001), using a panel data set for eleven origin countries has modeled inbound tourism demand for the UK using a theoretical framework that is based on the gravity model and provides elasticities estimates. The result suggest that tourism expenditure in UK is sensitive to price and exchange rates changes as the effective price elasticity of demand is found to be approximately unitary. Many countries set tourism growth as a target in an attempt to gain the additional income, foreign currency, employment and the tax revenues that the sector can provide.

O'Hagan and Harrison (1984) demonstrated the econometric approach to modeling the behavior of the market shares of the US tourist expenditure in Europe through AIDS model. Also Durbary and Sinclair (2003) have demonstrated the ways in which the AIDS model can be used to examine and quantify the responsiveness of destinations' shares of their major origin to changes in economic variables, notably those that can be affected by policymakers: relative prices, exchange rates, and expenditure. The paper has used the AIDS model to examine French demand for tourism.

Dritasakis (2004) applied a cointegration approach for estimating tourism demand for Greece by Britain and Germany to investigate changes in the long run demand for tourism. To explain the demand for tourism the study used income in origin countries, tourism prices in Greece and transportation cost and exchange rate between above three countries. He has used annual data from 1960 to 2000 has been used. The study noticed that many macroeconomics time series are non stationary and there is the existence of a long run equilibrium relationship among international tourism demand, income, transportation cost and real exchange rate which appears to be supported by the data used for the examined period.

The traditional literature on tourism demand rarely offers explicit theoretical models. Traditionally, analysis has been carried out using single equation models in which authors select explanatory variables based on standard demand theory. The approach has been criticized as not to take into account the interdependence of budget allocations to different tourist destinations and selection of variables (Li et al., 2005).

The empirical literature suggests that the most common specifications used for estimating the demand function of tourism are linear and log linear functions. Witt and Witt (1995) in a review article conclude that 75 percent of the analyzed models used a double log functional form, 18 percent a linear specification and the remaining are probit-logit models or semi-log specifications. The preference given to the double log specification is due to more satisfactory estimation results obtained and easy interpretation of the estimated coefficients through the demand elasticities (Kulendran, 1996; Morley, 1994).

The problem of estimating the demand schedule has been emphasized by various authors. Traditionally, an identification problem has been created with the use of time series data, because both supply and demand can shift over time Quayson and Var (1982) therefore, they has focused on a particular region that is Okanagan (Located in southern British Columbia, Canada). Croes and Vanegas (2005) have used dynamic econometric modeling of international tourism demand and analyzed tourism demand for Netherlands, United States and Venezuela.

Li et. al. (2004) have estimated the static and EC-LAIDS models using data on the demand for tourism to Western Europe by United Kingdom residents. Multiplicative form of this model is mostly used in linear form by logarithmic transformation (Stonge & Redman, 1982; Song & Witt, 2003; Croes & Vanegas, 2005). Other uses flexible dynamic econometric model (Syriopulos, 1995) and Box and Cox 1964 transformation of variables (Fiji and Mak, 1981).

Ghimire (2001) highlights the broad nature, scale and economic worth of regional tourism in three most important regions that is Asia, Africa and Latin America. The objective is whether regional tourism development represents any new and possible forecast for regional economic improvement, specially compared to international tourism centered on attracting visitors from industrialized countries.

In their study Song and Wong (2003) have used a time varying parameter approach to check the behavioral change of tourists in selecting destinations and observed that tourism is largely determined by economic factors.

Rossello et.al (2005) used the diffusion model along with traditional tourism demand model to find the tourism demand specification and noticed that traditional model is superior to diffusion model. The deficiencies observed in empirical studies and an absence of more structured theories have led to unexpected results in the elasticity's values. The study observed that the evolution of a specific destination's tourism demand can not be explained by income and prices variables alone.

The importance of tourism demand for an economy is evident from the survey of theoretical and empirical studies reviewed in this chapter. Along with its relationship with the socioeconomic indicators for instance, lag of tourists arrivals, income, prices, exchange rate, crime rate, population, number of terrorist attacks and dummy variables have been assessed in literature of both developed and developing countries. However such studies are not frequently undertaken for Pakistan. Tourism is used as major tool for foreign

exchange earnings. Therefore, we need to analyze the determinants of tourism demand in case of Pakistan.

2.7   Empirical Review:

In this subsection, we have tabulated different empirical studies on the determinants of tourism demand. In the Table 2.1 empirical studies are organized in such a way that the case studies of developed countries are listed first and those of developing countries after that. The variables used in different studies, their sign and significance.

Table 2.1: EMPIRICAL REVIEWS

A: DEVELOPED COUNTRIES

Author(s)	Data type, time period	Countries origin-destination	Tourism demand	Explanatory variables	Estimation technique	Empirical findings
Anastasopulos (1989)	Annual time series 1973-1987	USA-10 tourist generating countries	Expenditure	Income, price, exchange rate, and lagged exchange rate	OLS	• The income was found to be most significant variables of international travel to and for USA. • Income elasticity for inbound tourism on average higher than outbound traveling for USA. • International travelers appear to be sensitive to currency fluctuation.
Uysal and Roubi (1999)	Quarterly time series 1980-1994	USA-Canada	Expenditures	Lagged dependent, income, prices. Exchange rate. dummy variables	Artificial neutral networks ANNs. Multiplier regression results.	• ANNs model is useful in identifying the patterns which is not revealed by multiple regression.
Qiu and Junsen (1995)	Annual time series 1975-1990	Canada-USA, UK, France, the former West Germany, and Japan	arrivals and expenditure	Income, exchange rate, travel price, immigration, crime rate, special events, and time trend.	OLS	• It has examined that most of the variables are significant coefficient with expected signs.
Divisekera (1995)	Annual time series	Australia-Japan.	Arrivals	Income, prices. transportation cost	ML procedure	• Air fare found to be major factor effecting tourism demand in

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Author(s)	Data type, time period	Countries origin-destination	Tourism demand	Explanatory variables	Estimation technique	Empirical findings
	1970-1992	New Zealand, UK, US		and dummy variable		Australia and than origin income and prices. • Visitor flow remained less responsive to prices in short run.
Kulandran and Witt (2003)	Annual time series	Australia-Japan, New Zealand, UK and USA	Arrivals	Income, price, trade openness, exchange rate, dummy variable	Error correction model and structural time series model	• In ECM and in STSM demand varies between openness and origin countries income. • While price is not much influencing in both models.
Kulendran and Dwyer (2008)	Annual time series 1980-2005	Australia- 7 Asian countries and US, UK, New Zealand, Japan	Arrivals	Income, price, transport cost, marketing, lagged of all variables and dummy variable	OLS	• New Zealand found to be major market but also low spending compared to other markets. • Asia is growing market and more responsive to tourism expenditure than other for Australia. • A marketing expenditure allocated to Asia gives a good returns.
Luzii and fluckiger (2003)	Annual time series 1975-2000	Switzerland-America, Japan, Europe	Night spent	Income, prices, exchange rate, transport cost and dummy variables	OLS	• In case of European countries income not appeared significantly for tourism demand. • Exchange rate is seemed to be sensitive to tourism demand. • American and Japanese tourist takes Swiss tourism as an luxury good. More distant place considered to be superior.

Author(s)	Data type, time period	Countries origin-destination	Tourism demand	Explanatory variables	Estimation technique	Empirical findings
Witt, Song and Louvieris (2003)	Annual time serieso 1969-1999	Denmark-Germany, Netherlands, Norway, Sweden, UK, and US	Number of night spent	Income, prices, exchange rate, time trend, and dummy variable	Autoregressi-ve distributed lag model (ADLM),	• To check tourism demand forecasts are unbiased it has seen that it is biased in 14 cases out of 24. • Structural instability effect the short term tourism demand.
Proença and Soukiazis (2005)	Annual panel data 1977-2001	Portugal-Spain, Germany, France and UK	Expenditure	Lagged dependent, Income, price, exchange rate, population, accommodation capacity, public investment and dummy variable	Convergenc-e approach	• Findings show that per capita income is the most significant explanatory variable. • From the supply side accommodation capacity is most significant factor. • The income elasticity of the demand for tourism is higher than one which proved that tourism is a luxury good. • The decision of tourist to visit Portugal is not significantly influenced by relative cost of living and investment ratio of destination.
Garı´n Mun˜oz 2006	Panel data 1991-2003	Spain-Germany	Arrivals	Lagged dependent variable, Income, cost of living, travel price, and dummy variables	GMM-DIFF	• It has examined that most of the variables are significant coefficient with expected signs. • External shocks are also show impact on tourism demand.
Katafono and Gounder	Annual time series	Fiji- rest of world	Arrivals	Income, exchange rate, travel price,	Error Correction	• In log-run income is highly elastic with positive signs with trading

Author(s)	Data type, time period	Countries origin-destination	Tourism demand	Explanatory variables	Estimation technique	Empirical findings
(2004)	1970-2002			immigration, crime rate, special events, and time trend.	Model (ECM)	parners. • Contrast to expectations relative prices are positively related to tourism demand for Fiji.
Walsh (1996)	time series data from 1968-1992	Ireland-USA, UK, France, and Germany	Arrivals	Income and price	OLS	• The result suggests that price and income factors are among the most important explanatory variables determine tourism demand level to Ireland
Narayan (2004)	Annual time series 1970-2000	Fiji-Australia, New Zealand and USA	Arrivals	Income, price, transport cost and dummy variable	ARDL	• Income was significant and highly elastic determinant of tourism demand in Fiji. • Prices were found to be important determinant and Bali is substitution destination for Fiji's tourists. • An increase in transport cost in long run cause a fall in tourism demand.
B: DEVELOPING COUNTRIES:						
Papadopalos and Witt (1985)	Annual time series	Greece- 8 countries	Arrivals	Income, price, travel cost, marketing	OLS	• Promotional spending have significant and positive effect
Goh and Law (2002)	Monthly time series jan1980-Aug2000	Hong Kong-10 tourist generating countries	Arrivals	Income, lagged of dependent variable and travel cost	Forecasting models	• All the major arrivals for Hong Kong found to be non stationary with seasonal unit root.
Greenidge (2001)	Quarterly time series	Barbados-Canada UK	Arrivals	Income, prices. trend and seasonal	Structural time series	• Price found to be significant with low elasticity.

Author(s)	Data type, time period	Countries origin-destination	Tourism demand	Explanatory variables	Estimation technique	Empirical findings
	1968:1-1997:4	USA and others		components	modeling	• Tourism demand is influenced by income also.
Lee (1996)	Annual time series 1970-1989	South Korea- 7 major tourist generating countries	Expenditure	Income, prices, exchange rate, marketing and dummy variable	OLS	• Income elasticity was high and found to be most important determinant of international tourism demand for Korea. • The variables relative prices, marketing and exchange rate were also significant.
Lee, Var and Blaine (1996)	Annual time series 1970-1989	South Korea- 8 origin countries	Expenditure divided by population of origin	Income, prices, exchange rate and dummy variable	OLS	• Income, relative prices and exchange rate have significant effect on foreign tourism demand expenditure of South Korea. • The elasticity of demand resulting from exchange rate is varies from country to country for South Korea.
Kim and Wong (2006)	Monthly time series Jan1985-Nov 2003	Korea- rest of world	Arrivals	Lagged dependent, variable	Volatility model	• It has found that foreign tourist arrivals vary with the monthly seasonality in Korea. • News shock on monthly tourist arrivals is persistent. And show that negative shock produce more volatility than positive.
Tan, Mccahon and Miller (2002)	Pooled time series and ross-sectional	Indonesia and Malaysia-USA, UK,	Arrivals	Income, exchange rate, prices, time trend, and dummy variables.	OLS, LM test and FGLS	• It has examined that tourism demand vary due to formation of tourism development organizations. • Income is important variable that

Author(s)	Data type, time period	Countries origin-destination	Tourism demand	Explanatory variables	Estimation technique	Empirical findings
	panel data annual 1980-1997	Australia, Germany, Singapore and Japan				affect the decision of tourist to travel. • Relative price variable showed negative, significant and inelastic.
Garı´n Mun~oz and Montero-Martı´n (2007)	Annual panel data 1991-2003	Balaric Islands- 14 origin countries	arrivals and expenditure	Lagged dependent variable, Income, cost of living, travel price, and dummy variables.	OLS	• It has examined that price of travel is a significant determinant of tourism demand.
Chaiboonsri (2006)	Quarterly time series 1997:1-2005:2	Thailand-Malaysia, China, England, German, France, America and Canada.	Arrivals	Income, price, exchange rate and travel cost	Multivariate regression model	• Income is significant and elastic which is consistent with economic theory and previous empirical studies. • The 1 percent increase in transport cost lead to decrease in tourist arrivals in Thailand of less than 1 percent. • Exchange rate has negative impact on tourism demand and found to be highly elastic.
Vanegas and Croes (2000)	Annual time series 1975-1995	Aruba-US	Arrivals	Lagged of dependent, Income, relative prices, exchange rate and dummy variable	OLS	• Only income showed significant effect on tourism demand of tourism from US citizen to Aruba and sensitive to income. • Prices noticed insignificant and also inelastic to tourism demand.
Maliugina	Annual	Ukraine-75	Arrivals	Income, distance,	Gravity	• The foreign tourist arrivals

Author(s)	Data type, time period	Countries origin-destination	Tourism demand	Explanatory variables	Estimation technique	Empirical findings
(2006)	panel data 199-2994	sending countries		relative prices, visa requirement, tourist departure and dummy variable.	model and OLS	positively depend on the wealth of tourists and total number of their departure. • Main obstacle found to be the distance from origin to Ukraine and visa requirement for tourist. • Tourism service found to be normal good due to low income elasticity.
Akal (2004)	Annual time series 1963-2001	Turkey- international tourist	Arrivals and Receipts	Lagged of arrivals and lagged of expenditure	ARMAX	• It has found that 90 percent variation in tourist arrivals is due to previous tourist visits the destination. • Variations in tourist receipts are mostly due to tourist visit and then previous receipts.
Aslan, Kula and Kalpan (2009)	Panel Data 1995-2004	Turkey- nine mjor origins	Arrivals	Lagged dependent variable, income, prices, accommodation, public investment and dummy variables.	GMM-DIFF	• Lagged dependent variable is significant and less elastic showing that word of mouth has minor impact on Turkey's. • Income factor is not very important to determining tourism. • Prices have strong impact while dummy variables also found significant
Summary (1987)	Annual pooled 1968-1982	Kenya- UK, USA, Italy, Germany	Arrivals	Income, price, exchange rate and travel cost	Multivariate regression	• Multicolinearity and other estimation problem limit the usefulness of multivariable

Author(s)	Data type, time period	Countries origin-destination	Tourism demand	Explanatory variables	Estimation technique	Empirical findings
		and Sri Lanka				regression analyzing determinants
Neumyar (2004)	Annual pooled 1977-2000	Cross National Estimation	Arrivals	Income, price, Political violence, general attractiveness of destination, autocracy and travel cost	FEM and GMM	• Political violence found to be sensitive to tourist destinations. • There has found negative impact of autocracy on global tourism.

2.8 Conclusion:

From the existing literature it has been noticed that there is a vast variety of studies in case of tourism demand analysis. Therefore, there is also a wide variety of model estimation techniques applied for the demand function estimation of tourism. It has been noticed from empirical results that income and relative prices are most frequently used and are found to be an effective determinant of tourism analysis. Most of the literature has used time series data and single equation models. Since, panel data estimations involving dynamics are relatively rare in this empirical literature, we intend to apply this more recent technique to the Pakistan country study as empirical studies have not yet explored this alternative methodology in case of Pakistan.

Chapter 3

REVIEW OF TOURISM SECTOR IN PAKISTAN

Tourism development is essential for Pakistan as the geographical position is perfectly appropriate for tourism industry. Pakistan can be considered to be a stable and tourist friendly country. While traveling in the country, tourists should seek advice from tourist offices and embassies about which areas are safe. Sadly tourists are presently discouraged from visiting FATA, and Swat.

The year 2007 was not a good year in terms of foreign tourist arrivals while, tourism in the year 2006 was impressive both in terms of foreign tourist arrivals and foreign exchange earnings. Pakistan hosted 898,400[2] tourists in 2006, compared to 798,300 tourists in the year 2005, recording a strong growth of 12.5 percent and also earned foreign exchange US$ 260.1 in the year 2006.

Despite image building and promotional efforts Pakistan met setback in terms of inbound tourist arrivals during 2007 mainly due to law and order situation in the country. However, in terms of foreign exchange earnings, it has shown upward trend. Pakistan hosted 839,500 tourists in 2007, compared to 898,400 tourists in the year 2006, recording a decrease of 6.6 percent. On the contrary, Pakistan earned all time high foreign exchange US $ 276.1

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[2] Ministry of tourism.

million in the year 2007 from foreign tourism, showing an increase of 6.2 percent over the previous year earning of US $ 260.1 million.

Table: 3.1 Foreign Tourist Arrivals to Pakistan and Tourism Receipts 1972-2007

Year	Tourists (000) nos.	Growth rate	Receipts (US$ millions)	Growth rate
1972	100.9	--------	35.2	------
1975	172.0	70.3	87.5	148.6
1980	299.0	73.8	284.7	225.3
1985	440.5	47.3	266.8	-6.3
1990	423.8	-3.7	191.4	-28.2
1995	378.4	-10.7	123.8	-35.2
1998	428.8	13.3	101.4	-18.0
1999	432.2	0.79	78.0	-23.0
2000	556.7	28.8	84.4	8.1
2001	499.7	-10.2	90.0	6.6
2002	498.1	-0.32	100.9	12.1
2003	500.9	0.56	127.4	26.2
2004	648	29.3	169.5	33.0
2005	798.3	23.1	163.9	-3.2
2006	898.4	12.5	223.1	36.0
2007	839.5	-6.5	230.7	3.4

From the Table 3.1 it can be shown that there were ups and downs in foreign tourist arrivals from the beginning. The foreign tourist arrivals increased continually from 429 thousand in 1998 up to 557 thousand in 2000, whereas, it shows decreasing trend till 2003 up to 501 thousand and then continually rising, finally, it touched the figure of 898 thousand in the year 2006 but it decreased to 840 thousand in 2007 which was 6.6 percent lesser than the previous year.

There were also irregular trends in tourism receipts[1] during the last thirty years (Table 3.1, col 3). Tourism receipts increased from US $ 35 to US $ 284 in the year 1972-1980. After decreasing from US $ 101 million in 1998 to US $ 78 million in 1999, the receipts has shown increasing trend since 2000 and reached all time high US $ 276.1 million in 2007 by recording an increase of 6.2 percent over the year 2006.

According to the report of State Bank of Pakistan, there is an increase of average spending per foreign tourist 13.6 percent from US$ 289.5 in 2006 to US$ 328.9 in 2007. Similarly, spending per tourist per day also increased by 13.8 percent i.e. from 11.6 US$ in 2006 to 13.2 US$ in 2007.

Pakistan's export receipts grew at an annual rate of 12.1 percent over the last five years (2002-03 to 2006-07), while earnings from tourism increased at an annual rate of 28.0 percent over the same period. Tourism had maintained its 16th position in foreign exchange earning for consecutive three years i.e. from 2004-05 to 2006-07. However, international travel receipts as percentage of earnings from exports improved its share from 1.3 percent in 2005-06 to 1.6 percent in 2006-07. Similarly, its share in the combined receipts of merchandise and service items also improved from 1.0 percent in 2005-06 to 1.2 percent in 2006-07. Overall, the share of tourism sector in the economy of Pakistan is very low, tourism receipts were 0.3 percent of G.N.P in 2006-07.

The tourism development is essential for Pakistan. There is a great potential for expanding the tourism sector as there lays stunning natural environment, rich culture and heritage and

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[1] Real receipts are taken by dividing GDP deflator of US.

also location are beautiful with sea, mountains and forest. Foreign tourist to Pakistan increased steadily from last decade therefore, in our study, we mention some important features of Pakistan are as follows:

1. Pakistan is a country of four provinces and covers an area of 796,096 sq. Km. Population of Pakistan is estimated at 156.77 million in 2006-07, growing at an annual rate of 1.8 per cent. While Pakistan is situated in South Asia between 23° -- 35' to 37° -- 05' North latitudes and 60° -50' to 77° - 50' East longitudes. The country has important geographical position and is bounded to the West by Iran. to the Southeast by India, Afghanistan to the Northwest, China to the Northeast and the Arabian Sea to the South. Pakistan has beautiful locations including great mountain ranges of the Himalayas, the Karakoram, and the Hindukush, the Arabian Sea and the Thar Desert.

2. Pakistan is a paradise of sun, sea, mountains, and lakes that offers the holiday maker, a complete change from the anxieties and routine of everyday life. From April to October, most parts of Pakistan have an ideal climate, providing perfect conditions for visitors to travel. Pakistan has well defined seasons these are Winter, Spring, Summer and Autumn. During summer in central and southern parts of the country, the temperature may rise to 450C. However, the northern regions have very pleasant weather with heavy rains during summer, while in winters there is heavy snow fall in mountains.

3. The main tourist attractions of Pakistan are: it's beauty, art and culture, adventure and sports and above all the hospitality of its people. Pakistan is the land of Moenjodaro. and the ancient Indus Valley and Gandhara Civilization. It is the land where three great mountain ranges the Himalyas, the Hindukush and Karakoram meet. Pakistan has an exceptional past, and is a land full of historic treasures covering several successive civilizations.

Table: 3.2   Tourist Arrivals from Top Eight Countries and Percentage Share

Country	Arrivals 1972-2007	Arrivals 2006 (000s)	Arrivals 2007 (000s)	Percentage change (2006-2007)
UK	3675996	275.1	275.6	0.1
India	2833618	70.2	48.2	- 31.3
USA	1523338	126.2	121.9	- 3.3
Germany	435033	27.3	23.9	- 12.3
Canada	349336	30..8	36.5	18.5
Japan	338012	14.4	11.0	- 23.1
China	260029	37.1	30.4	- 18.1
France	253647	11.8	11.2	- 5.4

Source: Ministry of Tourism, Islamabad, Pakistan.

From the Table 3.2 it has seen that from the beginning UK and USA remain important source market for Pakistan tourism. However, in recent years, visitors from Germany have gain prominent position although their percentage share of tourist arrivals from previous years decline but Germany make up the 4th largest export market for tourism. Interestingly, visitors from the Canada, a long-haul market, have risen in the past decade and are currently the 5th largest source market and there percentage share from the last year is risen up to 18.5 percent.

The long term trends during 1998-2007 show that foreign tourist arrivals to Pakistan have been fluctuating between 428.8 thousand to 839.5 thousand. In the last 10 years U.K., U.S.A., Canada, China, Japan, Germany, India, France, Nether land, Norway, Iran and Australia have been the major tourist source market for Pakistan.

In 2007, the major tourists generating country in terms of tourist arrival number was the U.K., followed by the USA, India, Canada, China, Germany, Norway, Australia and France. The tourist arrivals from all these countries were 78 percent of overall total arrivals. Although tourists from India are coming in large number but they preferred to stay with their family and friends and therefore, categorized as low revenue visitors.

Undoubtedly, tourism is an important industry for Pakistan, being one of the forces driving the country's economic expansion. Moreover, even with the industry's vulnerability to both adverse internal and external factors, it has been quite flexible. For instance, in spite of the political in stability in 90's and several adverse external shocks (the September 11 terrorist attacks in the US in 2001 and the Afghan war) visitor arrivals and hence, tourism earnings peaked in last three years.

Pakistan tourism infrastructure, which includes hotels, restaurants, transportation facilities, entertainment establishments and insurance services, is in poor condition now. Inferiority of Pakistan tourism sector is especially appreciable compared to infrastructure in world-wide acknowledged European tourism-oriented countries, such as France and Spain. Also the low level of development of tourism sector in Pakistan is due to the reasons of poor

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utilization of existing tourism capacities in the country, underdeveloped tourism infrastructure, ineffective regulatory system of inbound tourism supply business activity that is hospitality and transportation services, and unskilled and low qualification of the manpower in the tourism sector.

Improvements are needed in several areas to further development of tourism in Pakistan. First, it is important to improve the tourism infrastructure. Poorly maintained roads and limited public transportation create serious obstacles to safe local travel. Safety standards are lacking with respect to traveling via motor vehicles. Resolving political tensions and civil conflict will also greatly contribute to reducing destination risks.

Chapter 4

DATA, CONSTRUCTION OF VARIABLES AND

ESTIMATION TECHNIQUES

This chapter describes data sources, measures of tourism demand and its socioeconomic determinants in detail. Subsection 4.1 to 4.3 focuses on the definition of variables, source of data and description of the data. Estimation techniques are also discussed in this chapter.In order to study impact of tourism demand for panel data analysis, the study uses Generalized Method of Moment (GMM), Fixed Effects Model (FEM) and Pooled Ordinary Least Square (OLS) estimation techniques.

4.1   Definition and Source of Data:

The selection of data source is mainly based on data availability, reliability of data sources, sufficiency of data and the way variables are to be measured in the model. The data utilized are panel data over the period 1972-2007 for eight major foreign tourist arrivals countries in Pakistan that are Canada, China, France, Germany, India, Japan, the UK, and the USA. An advantage of using panel data is that these capture both time series and cross section variation in variables. The data are sourced from the publication "Tourism in Pakistan" year book published by Ministry of Tourism Government of Pakistan, IMF's International Financial Statistics yearbook (2008) henceforth IFS, World Bank's World Development

Indicators (2008) henceforth WDI and Federal Bureau of Statistics of Pakistan year book (2008).

4.2 Dependent Variable:

Previous studies have used either visitor arrivals or visitor expenditure as a dependent variable (Crouch, 1994ab; Crouch et.al. 1992; Divisekera, 1995; Fujji and Mak, 1981; Naude and Saayman 2004; Kim and Wong, 2006). The present study measures the tourism demand for Pakistan using tourist arrivals as a dependent variable and defined it as the number of tourist visitors in a destination from an origin country.

Lim (1997) has mentioned in his study that tourist arrivals are the most frequently used dependent variable. Data on tourist arrivals is more reliable and widely used Crouch (1994). We have taken transformation of the data by taking natural logarithms which means that the coefficients of the estimated equation can be interpreted as elasticities that indicates a percentage change in a dependent variable given a 1% change in an independent variable.

4.3 Explanatory Variables:

The selection of independent variables was determined by a review of previous empirical studies (for example, Kulendran, 1996; Kulendran and King, 1997; Seddighi and Shearing, 1997; Lim and McAleer, 2001). In a survey of 100 empirical studies on tourism demand

modeling, Lim (1997) found that income and price were the most commonly used explanatory variables. Tourist arrivals are expressed in our study as a function of certain relevant explanatory variables.

Income:

Almost all studies use the origin country income as an explanatory variable to measure tourism demand [Qiu and Zhang, 1995; Lee, et.al. 1996; Stronge and Redman, 1982]. Income is the most prominent factor affecting the demand for international tourism (Lim, 1997) as it affects the ability to pay for overseas travel. Different studies found that estimated income elasticites for tourism demand were typically above unity which supports the view that travel is a luxury product (Crouch 1994; Lee et.al. 1996; Martin and Witt 1989; Qiu and Zang; 1995).

According to economic demand theory as real income increases, more people are likely to travel and therefore income has a significant effect on tourism arrivals (Lee et.al. 1996; Stronge and Redman 1982). From the theory it has been observed that income of a tourist originating country reflects development level of a country and as it rises travel and tourism expenditure both will increase.

Economic theory suggests that changes in consumer income can cause changes in the demand for products. An increase in real income provides consumers with greater spending power. If the increased spending on a normal product exceeds the increase in real

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income, the product is termed a luxury. Thus, a luxury is a product is once whose share in consumption expenditure increases as real income increases. International tourism is generally considered to be a luxury rather than a necessity. This explanatory variable is measured as real per capita GDP at (constant 2000 US$) in the origin country.

The relationship between the quantity demanded for a good or service and income can be either positive or negative, depending on the type of good or service, normal or inferior, under consideration. Tourism is frequently considered a normal good. Hence, the quantity of tourism services is expected to increase when income in an origin country increases, holding all other factors constant, thus exhibiting a positive relationship (Tan *et.al.* 2002). From the previous studies it has been also noted that income elasticity of the demand for tourism is higher than one.

Prices:

Relative prices are one of the main determinants of the tourism demand and have usually been measured using the consumer price index as an indicator of tourists' costs of living i.e the prices of good and services which tourist buys in a destination, due to the unavailability of a specific tourism price index (Witt and Witt 1995).

Demand theory hypothesizes that the demand for international tourism is an inverse function of relative prices that is the lower the cost of living in the destination country relative to the origin country, the greater the tourism demand. Thus relative prices are an

important determinant of tourism demand and have been widely used in different studies (Crouch, 1994ab; Lim, 1997b; Sinclair, 1998; Song and Li, 2008), giving significant results. The variable used is a ratio of CPI in the destination and origin. Luzzi and Fluckiger (2003) has mention that when the price level in the destination country is higher than expected, the intended length of stay and/or planned expenditure may be reduced and tourist may choose the closest and cheapest competing(substitute) destination.

From the different studies it has been observed that the relative price elasticity is less than zero [Crouch et al., 1992; Qiu and Zhang, 1995; Witt and Martin 1987 and Witt and Witt 1989; Kliman, 1981; Lee, 1996; Uysal and Roubi. 1999]. If price in the destination country increases by more than in the origin countries and this is not compensated by changes in exchange rate then the relative cost of travel abroad clearly rises. As prices increase faster than average in a destination then its currency depreciates.

The current study has taken two variables for prices. Song and Witt (2003) has reported that two price variables are used to capture the own price and substitute price effects on tourism demand, which is also suggested by standard demand theory.

Kulendran and Dwyer (2008) have calculated the price of tourism products in Australia. using the Australian consumer price index (CPI) divided by the origin country CPI. This tourism price formulation is based on the assumption that tourists compare the cost of living in Australia with a domestic tourism experience.

The variable was significant in many cases, but several studies found an unexpected positive relationship and/or statistically insignificant values (Crouch, 1994c; Martin & Witt, 1987). A depreciation of a destination country's currency relative to an origin country's currency is translated as an increase in the origin country's purchasing power, and rising tourism demand is expected, all other factors remaining constant (Tan *et.al.* 2002).

Exchange rate:

Exchange rates have also often been considered to be a determinant of tourism demand. Some researchers have considered the appropriate measure to be the exchange rate between the tourist origin and individual tourist destination currencies (Martin and Witt, 1987; Crouch, 1994c; Divisekera, 2003). The exchange rate between the origin and a weighted average of destinations has also been used in other studies (Lee, 1996; Morley, 1998).

Exchange rate is introduced into the tourism demand model separately from the relative price variable and is observed to have a significant effect. Many studies have examined its influence on the demand for international tourism (Chadee and Mieczkowski, 1987). Certain researchers also have argued for the inclusion of the exchange rates as an independent variable in an international tourism demand model because fast changes in exchange rates are perceived more readily by potential travelers than changes in the country's price level (O'Hagan & Harrison, 1984; Witt &Witt, 1992).

It has noticed that people are more aware of exchange rate than relative cost and use it as a proxy for destination price (Walsh, 1996). The inclusion of both the exchange rate and relative prices as explanatory variables may cause structural problems as exchange rate is a measure of relative prices and may lead to multicollinearity. To address this, studies have used panel data model and applied generalized least square technique (GLS) (Chadee and Mieczkowieki, 1987).

It has been observed that tourists respond to exchange rate when they make their decision to travel, because of limited knowledge of destination's price level (Vanegas and Croes, 2000). It is expected that a decline in the exchange rate would lead to a decrease in the demand for international tourism. Since exchange rate is expressed as local currency units (LCU) to buy one US$, origins' exchange rate appears in the numerator of the ratio.

Travel cost:

The cost of travel from an origin country to a destination country is another important element of price, and such cost has been modeled primarily as traveling by air between origin and major destination cities. In our study due to insufficient data on air fare we use world price of crude oil as a measure for travel cost. Tan *et.al.* (2002) have mentioned in their studies that an increase in travel cost is expected to result in a decline in international travel, holding other factors constant, thus exhibiting a negative relationship.

Many studies in the past have failed to include travel cost in the tourism demand functions because of the difficulty in obtaining the data and the problem of multicollinearity due to its close relationship to destination price and/or exchange rate (Lee, 1996). Results regarding the impact of travel cost on tourism demand are very uncertain. The variable was found to be significant in some studies (Divisekera, 1995; Goh and Law, 2002; Morley 1999; Kliman, 1981).

Lagged dependent variable:

It has been used in this study to capture dynamic influences and is used as a tool of proximity between origin and destination countries (Fujji and Mak, 1981; Kim and Wong, 2006). A lagged dependent variable can be justified on the basis of habit persistence. Once people have been on holiday to a particular country and liked it, they tend to return to that destination next time. In general, tourists are adverse to risk, preferring to spend holidays in places that are already familiar to them or if they had heard something positive about the places they plan to visit.

The lagged dependent variable in the tourism demand function is included for two reasons: first, to introduce dynamics into the demand function and second, to capture persistence effects of tourist behaviour (Sinclair and Stabler, 1997; Vanegas and Croes, 2000; Witt and Martin, 1987).

Other variables:

Demand theory also implies that the demand for tourism is affected by other variables and special factors, such as political and socioeconomic situations (Lee *et.al.* 1996).

Infrastructure: Among destination country's facility, transport infrastructures represent one of the paramount requirements to develop successful tourism products (Vanegas 2006). For this reason, facilities are approximated by transport infrastructures and income. The proxy for this is obtained from ratio of paved roads and unpaved roads and also destination's GDP per capita used for facilitation level in destination.

Law & order: In the destination country the situation of law & order is important for tourists to decide whether to visit a particular destination or not. In our study expenditure on law & order situation is used is used as an explanatory variable to measure law & order situation.

Crime rate: The crime rate in Pakistan is a measure of safety for tourists. Violent offenses data which include murder, attempted murder, kidnapping/abduction, child lifting, and robbery are used as they are good indicator of safety in a country. If tourists have reliable information about destination's crime statistics then increase in the rate would give negative impact on tourist arrivals (Qiu and Zhang 1995).

Terrorist attacks: Number of terrorist attack has been used as one of the determinant of tourism demand. Terrorist acts worsen public perception of danger in the world in general and at some destinations in particular (Sonmez and Graefe, 1998). Tourist decision making of visiting any destination is based on involving terrorism and/or political instability risks.

Dummy variables: Many studies have included dummy variables for variety of purposes; they are introduced to account for the effect of special events that might have had a transitory influence on demand (Crouch 1994ab; Lim, 1997; Witt *et.al. 2003*).

A variety of negative special events (e.g., political instability, social conflict, economic recession) and positive special events (e.g., world fairs, sports tournaments) have been modeled through dummy variables (Crouch, 1994b; Di Matteo& Di Matteo, 1993; Rosensweig, 1986; Summary, 1987; Witt & Martin, 1987). Our study also includes the dummy variables in tourism demand model for the impact of 'one-off' events. Three dummy variables are used to represent exchange rate regimes, political instability and Afghan war.

4.4   Econometric Methodology:

Most of the studies have used single equation model for estimating tourism demand and have attempted to explain demand, measured by tourism receipts (expenditure) or arrivals (departure), at the aggregate cross country level [Martin and Witt, 1987; Sheldon, 1993; Qiu and Zhang, 1995; Lim, 1997; Akis, 1998; Croes and Vanegas, 2005]. It has been

noticed by Crouch (1994), that the methodology of a function depends on the nature of demand coefficients, estimation method, the type of data used and whether a single or simultaneous equation approach is used.

The functional form suggested for determining the tourism demand based on the theoretical frame work developed in previous studies is as follows:

$$TD_{it} = f(Y_{it}, I_t, RP_{it}, SP_{wt}, ER_{it}, TC_{it}, S_t, L\&O_t, CR_t, TA_t, QF) \qquad (4.1)$$

Almost all previous studies using econometric models to explain either tourist visitor or tourist expenditure have specified demand function in log linear form. Log linear functions possess the advantage that the derived coefficients are easy to interpret as they are elasticities. Log linear models give marginal and elasticities and steady state growth path [Lee et al 1996; Munoz and Martin, 2007; Vanegas and Croes, 2000].

Based on the variable description and consistent with previous empirical studies on tourism demand modeling, the proposed model for Pakistan's main tourist source markets is presented with full specification of the demand function of tourism in a log linear form. We have used the panel data model to estimate the tourism demand finction (Proença and Soukiazis, 2005; Tan et.al. 2002; Munoz and Martin. 2007; Aslan, 2009).

$$\ln TD_{it} = \beta_1 + \beta_2 \ln Y_{it} + \beta_3 \ln I_t + \beta_4 \ln RP_{it} + \beta_5 \ln SP_t +$$
$$\beta_6 \ln ER_{it} + \beta_7 \ln TC_{it} + \beta_8 \ln S_t + \beta_9 \ln L\&O_t + \qquad (4.2)$$
$$\beta_{10} \ln CR_t + \beta_{11} \ln TA_t + \gamma_1 D_1 + \gamma_2 D_2 + \gamma_3 D_3 + \mu_{it}$$

Where i = 1, 2, 3, 4, 5, 6, 7, 8 (Canada, China, France, Germany, Japan, India, the UK, and the USA respectively) are considered as countries of origin, where t is the time interval from 1972 to 2007.

TD = number of tourist arrivals in Pakistan in year t from originating country i.

Y = income of origin county is measure as a per capita GDP at constant price.

I = income of destination country measured as a per capita GDP at constant price.

RP = relative prices used as a ratio of CPI in the destination and country of origin.

SP = Substitute prices measured as a ratio of CPI in destination and substitute destinations which are Bangladesh and Iran.

ER = exchange rate between destination and origin countries is taken.

TC= cost of travel between destination and origin.

S = ratio of paved to unpaved roads in destination.

L&O = law and order expenditure in destination.

CR = crime rate in destination.

TA = number of terrorist attacks in destination.

QF = socioeconomic qualitative factors in destination, using dummy variables D_1, D_2 and D_3 for exchange rate regime, Afghan war and political crisis.

μ = random error.

To date, studies have used econometric models [O'Hagan and Harrison, 1984; Morley, 1998; Luzzi and Fluckiger, 2003; Song and Wong, 2003; Dritsakis, 2004] with either tourist visitors or tourist expenditures and specified demand functions in log linear form.

Some researchers have argued that the log-log form has generally proved to be superior, but no strong justification has been provided for having the double log linear model. It has two underlying advantages: it generates regression coefficients that directly measure demand elasticities, and the double log form has relatively low residual variance, compared to other functional forms with the same data sets (Lee *et.a.l* 1996; Neumayer, 2004; Munoz, 2007; Aslan *et.al.* 2009).

To measure the tourism demand in case of Pakistan the study uses the tourist arrivals as an indicator. The tourist arrivals variable is also popular today as a measure of total tourist arrivals from origin to destination for tourism demand (Song and Li, 2008). Tourist visits can take place for various reasons: holidays, business trips, visits to friends and relatives, and pilgrimages. The current study examines the total tourist trips for measuring tourism demand.

Syriopoulos (1995) has mentioned that a 'tourist price index' should, ideally, be used in order to depict the sensitivity of tourism demand to changes in the prices of the commodities and services in the destination (for example, food, accommodation, entertainment, shopping) relative to prices in the origin country. Such as index, however, is unavailable and previous studies used consumer price index which gave satisfactory estimation results.

Relative prices of substitute destinations also have impact on the demand for tourism in a destination. Whereas, it may be important to study exchange rate effects separately from

price effects; exchange rate differentials may be of particular importance when the tourist is planning a holiday.

Tourists are usually more aware of exchange rates than relative prices, owing to the wider publicity of information about the former. However, although exchange rates in a destination may become favorable to the tourist, this could still be counterbalanced by high inflation changes adjusted for exchange rate effects that are expected to be more significant for tourism demand.

Our study will explore the social factors like law & order situation, crime rate and terrorist attacks to analyze in the case of tourism demand as these also affect the tourism behaviour significantly.

Special events related to the political, social, economic and cultural environment may affect tourism. Dummy variables are included in the model in order to pick up the adverse impact of political instability that was experienced in some of the destinations over the period.

Coefficients β_2, β_3, β_6, β_8, and β_9 corresponding to variables lnY_{jt}, ln I_t, $lnER_{it}$, lnS_{it} and $lnL\&O_{it}$ are expected to be positive: (1) higher GDP per capita in origin increases consumption of luxury services, one of which is outbound tourism; (2) Between destination and origins with a increase in exchanger rate more tourist will visit that destination (3) greater number of total paved to unpaved roads expands number of visits to Pakistan; (4)

as government increases the expenditure on law and order their will be an increase in number of arrivals as security risk decreases

Coefficients β_3, β_4, β_5 and β_7 β_{10} corresponding to variables $ln\text{RP}_{ji}$ and $ln\text{SP}_{wi}$ $ln\text{TA}_i$ and $ln\text{CR}_i$ are expected to be negative, since both of the relative price variable indicate that if the price in origin and prices in substitute destination are less than the prices in destination, tourism in destination will decrease. And tourists will prefer to stay home or go for alternative destination; likewise decline in destination's crime rate and terrorist attacks would lead to an increase in the demand for international tourism.

γ_1, γ_2, and γ_3 are the Coefficients of dummy variables these special factors are political instability, terrorist attacks and exchange rate regime. Expected sign of γ_3 is ambiguous.

4.5 Estimation Techniques:

In this subsection we will discuss the estimation technique[4] in detail. Panel data estimation techniques are used in our study to estimate the demand function of tourism in Pakistan. The conjunction of time series and cross sectional data allows for higher degrees of freedom in the estimation process and has the advantage to include specific country effects, gives more data information, reduces the multicolinearity effects and allows for dynamic specification. The availability of panel data allows us to measure the effects of variables with little changes with in countries (Murnoz and Martin, 2007). However, the estimated values of elasticities may differ depending on the selected measures of the variable.

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[4] The estimation have been made by using econometric software EVIEWS.

Equation (4.2) is estimated by using the usual panel data estimation methods. In this way, differences in structures between the sending countries are captured in the constant term. The use of fixed effects estimators however, will allow us to pick up short-term effects since it focuses on time series components of the data (Naude & Saayman, 2004). We estimate model with a fixed effects (FE) estimator, which is a natural estimator to use, given that our countries in the sample are fixed.

The FE estimator subtracts the over-time average of the equation for each country from the equation to be estimated. Because of this so-called within transformation, the individual country effects are wiped out, and the coefficients are estimated based on the time variation within each cross-sectional unit only. Any correlation of the fixed effects with the explanatory variables is therefore rendered unproblematic. In all methods of estimations (pooled OLS and FEM) the presence of first order serial autocorrelation was detected, and therefore, the generalized method of moment of estimation was used to remove serial autocorrelation and to obtain efficient estimators.

4.5.1   Dynamic Estimation of the Demand Function of Tourism in Pakistan:

The presence of autocorrelation when estimating equation (4.2) can be interpreted as evidence of dynamic misspecification. In order to insert dynamics into the demand function of tourism in Pakistan, we introduced a lagged dependent variable as an explanatory factor to capture persistence effects of the tourists behaviour. The introduction

of a lagged dependent variable also allows for explaining the adjustment process of the actual variation in the demand for tourism to its desired level, through the well known partial adjustment principle. The dynamic specification of the demand function for tourism with an autoregressive term takes the following form:

$$\ln TD_{it} = \beta_0 + \beta_1 \ln TD_{it-1} + \beta_2 \ln Y_{it} + \beta_3 \ln I_t + \beta_4 \ln RP_{it} + \beta_5 \ln SP_{wt} +$$
$$\beta_6 \ln ER_{it} + \beta_7 \ln TC_{it} + \beta_8 \ln S_t + \beta_9 \ln L\&O_t + \beta_{10} \ln CR_t + \quad (4.3)$$
$$\beta_{11} \ln TA_t + \gamma_1 D_1 + \gamma_2 D_2 + \gamma_3 D_3 + v_{it}$$

$$v_{it} = \mu_t + \eta_i + \varepsilon_{it} \quad (4.4)$$

In eq (4.4) $v_{it} = \mu_t + \eta_i + \varepsilon_{it}$ is the fixed effect decomposition of error term in which μ_t and η_i are time and country/destination-specific effects, respectively. The error term component ε_{it} is assumed to be serially uncorrelated with zero mean and independently distributed across destinations, but heteroskedasticity across time and destinations is allowed for.

Estimation with either ordinary least squares (OLS) or a fixed effects or a first-differenced panel estimator is problematic. This is because of detection of autocorrelation, we apply AR(1). Because $\ln TD_{it}$ is a function of η_i, so is $\ln TD_{it-1}$. The correlation of a regressor with the error term renders the OLS estimator both biased and inconsistent. The same is true for the fixed-effects or first-differenced estimator. Although, in the process of

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estimation, the ηi are wiped out, biasness and inconsistency are consequences of the correlation between TD_{it-1} and v_{it-1}

The demand by international tourists to travel to a particular country or destination can be derived from micro-economic principles and be shown to depend positively to expenditures in the country of origin and negatively on relative tourism product costs (Lim, 1999).

Let's assume that the desired or long-run level of tourist arrivals is specified as follows: $TD_{it} = x_{it}\beta + v_{it}$. Again, x_{it} is a vector of tourism determinants and v_{it} is unobserved country specific effects, we sweep out η_i by taking first difference of log form.

$$TD_{it} - TD_{it-1} = \gamma(TD_{it-1} - TD_{it-2}) + (x_{it} - x_{it-1})\beta + \varepsilon_{it} - \varepsilon_{it-1} \qquad (4.5)$$

The difference produces the correlation between errors term as we have $\Delta TD_{it-1} = TD_{it-1} - TD_{it-2}$ and $\Delta\varepsilon_{it} = \varepsilon_{it} - \varepsilon_{it-1}$. This problem can be resolve by instrumental variable estimation (Phakdisoth & Kim, 2007). In the model, we must find variable that are correlated with ΔTD_{it-1} but uncorrelated with $\Delta\varepsilon_{it}$. For example lagged dependent variables can be used as instrumental variables.

This treatment leads to consistent but not efficient estimates, because it does not make use of all the available moment conditions. These conditions may be exploited in a generalized method of moments (GMM) framework. GMM accounts for unobserved country-specific effects, allows for the inclusion of lagged dependent variables as regressors, and controls

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for endogeneity of all the explanatory variables. We construct a panel that consists of data for eight countries over the period 1972-2007.

Therefore, the estimation procedure used in this study is the GMM proposed by Arellano and Bond (1991). The dynamic model to be estimated will therefore be

$$
\begin{aligned}
\Delta \ln TD_{it} = &\beta_1 \Delta \ln TD_{it-1} + \beta_2 \Delta \ln Y_{it} + \beta_3 \Delta \ln I_t + \beta_4 \Delta \ln RP_{it} + \beta_5 \Delta \ln SP_{wt} + \\
&\beta_6 \Delta \ln ER_{it} + \beta_7 \Delta \ln TC_{it} + \beta_8 \Delta \ln S_t + \beta_9 \Delta \ln L\&O_t + \beta_{10} \Delta \ln CR_t + \\
&\beta_{11} \Delta \ln TA_t + \gamma_1 \Delta D_1 + \gamma_2 \Delta D_2 + \gamma_3 \Delta D_3 + v_{it}
\end{aligned}
\tag{4.6}
$$

The value of parameter β_1 indicates to what degree current tourism purchases are determined by the value of previous consumption. An advantage of using a dynamic model is that both short and long-run elasticities are obtained. A further advantage relates to the fact that data must be differenced in dynamic panel data models. By differencing data and removing the problem of non-stationarity, this method will give us confidence in the reported coefficients and standard errors.

For all estimations, we take the natural log of the dependent variable to render its distribution less skewed and to mitigate problems with heteroskedasticity. Our sample consists of all countries for which data are available. In the sensitivity analysis, we ran the same models for a sample consisting of developing countries only.

The use of instruments is required to deal with (a) the likely endogeneity of the explanatory variables, and (b) the problem that by construction the new error term, ($\varepsilon_{it} - \varepsilon_{i,t-1}$) is

correlated with the lagged dependent variable, $(TD_{i,t-1} - TD_{i,t-2})$. Under the assumptions that (a) the error term, ε, is not serially correlated, and (b) the explanatory variables, X, are weakly exogenous (i.e., the explanatory variables are uncorrelated with future realizations of the error term); appropriately lagged values of the regressors can be used as instruments as specified in the following moment conditions.

$$E[TD_{i,t-s}(\varepsilon_{it} - \varepsilon_{i,t-1})] = 0, \quad \text{for } s \geq 2; \ t=3,...,T \tag{4.7}$$

$$E[X_{i,t-s}(\varepsilon_{it} - \varepsilon_{i,t-1})] = 0, \quad \text{for } s \geq 2; \ t=3,...,T \tag{4.8}$$

To reduce the potential biases and imprecision associated with the usual difference estimator, Arellano and Bover (1995) develop a *system* of regressions in differences and levels. A possible underlying rationale for the GMM is the removal of endogeneity problem which exist in panel data.

Chapter 5

DISCUSSION OF RESULTS

5.1.   Introduction:

This chapter empirically analyzes the links between international tourism demand and factors affecting tourism demand and focuses on the relationship between tourism demand and its determinants. An important finding is that a decrease in price factors raises the tourism demand, and this pattern is robust across various specifications. In the later part of the chapter we also discuss the endogeneity issue of tourism demand.

5.2.   Results of Fixed Effect Model (FEM):

Equation 4.2 is estimated with panel data estimation methods and the results are reported in Table 5.1 and Appendix. Appendix presents the OLS estimation results obtained by pooling the data and Table 5.1 reports the results of the Fixed Effects estimation. The results obtained from pooling the data are not significant and hence, there exists a significant difference between the results of pooled OLS and Fixed Effects estimation. This has been shown by applying the Wald test and noticed that cross country effects are not common and there is a need to apply Fixed Effect estimation technique.

The intercept represents the cross-section specific effects and differs from country to country. In Fixed Effect Model (here after FEM) the degree of explanation of the explanatory variables is very satisfactory ($\bar{R}^2 = 0.93$). Durbin-Watson statistics indicates the presence of first order autocorrelation, which has been removed by applying AR (1). In this study, we try 5 different specifications to check the robustness of our results. Different specification methods have been used by Vanegas and Croes (2000), Neumayer (2004), and Phakdisoth and Kim (2007). Based on these specifications and results, we find that most of the variables in our estimations have the expected signs and level of significance.

The estimated coefficient for the origin income variable has the expected sign with significant impact on tourism demand for Pakistan. Most of the previous studies consider tourism as a luxury product. The income elasticity of demand for tourism is greater than one (see in Table 5.1, cols 1to5) with level of significance of 1% with price, exchange rate and all other explanatory variables included, which shows that decisions of tourists depend greatly on their income besides other factors. The studies of Anastastopoulos (1989), Katafono and Grounder (2004) Croes and Vanegas (2005) and Chaiboonsri (2006) also found the same results.

The income variable for Pakistan (destination) is taken as a measure of the size of the economy/facilities provided in destination. The elasticity of tourism demand to GDP per capita of Pakistan is low and positive 0.470 (see table 5.1, col 1) with 10% level of significance. The results are consistent with the theory that if GDP of a destination

increases, tourism demand also increases. Therefore, economy situation of Pakistan matters for tourists, as income level in Pakistan increases the number of visitors also increases but less proportional to increase in income.

The relative price elasticities are found to be negative and low. The results are consistent with previous studies (Stronge and Redman, 1982; Tan et.al. 2002; Croes and Vanegs, 2005). This can be taken as evidence that the relative cost of living between host and sending countries is not a very important determinant factor for decision of tourists to choose Pakistan as the destination place. Another possible reason could be that price has little impact on demand for tourism in Pakistan, since the major origin countries of Pakistan have higher standard of living. The relative price elasticities suggest that tourism arrivals to Pakistan are not very responsive to price changes. In fact, according to the estimated value, a 1% increase in prices would lead to a 0.19% decrease in the number of arrivals (see column 5). Therefore, tourist decisions of these origin countries to travel to Pakistan are more dependent on income of origin country (wealth of tourists) rather than relative prices.

Price of substitute destinations has significant effect and with expected negative signs (see Table 5.1, col 2) suggesting that relative price in Pakistan compared to other destinations affect tourist decisions significantly. Moreover, the competitive destinations are more or less in line with Pakistan tourism industry like Bangladesh and Iran therefore, if prices in Pakistan increases tourist will prefer substitute destinations.

Nominal exchange rate appears to be significant at level of 10% and with expected positive (see Table 5.1, col 1, 2, 3). The sign is consistent with previous studies (Crouch *et.al.* 1992; Qiu and Zhang, 1995; Lee *et.al.* 1996; Chaiboonsri, 2006). Nominal exchange rate is measured between destination and origin so, if the destination's currency devaluates then tourism demand for destination increases. Therefore, in our study exchange rate have a significant affect on tourism demand for Pakistan.

In case of Fixed Effects estimation, we obtain a significant coefficient of -0.146 for travel cost with expected negative sign, in contrast to other studies in which travel cost does not show a significant impact on tourism demand. The price of travel is also a significant determinant of tourism demand for Pakistan. As shown in Table 5.1, an increase in travel cost would discourage tourist visits to Pakistan.

Infrastructure is measured as a ratio of paved to unpaved roads and has an expected positive with significant level (Table 5.1, col 4) impact on tourism demand for Pakistan. Law & order expenditure variable is found to be significant with positive sign as expected, which implies that if government increases the expenditure on law & order, tourists feel secure to visit Pakistan as their tourist destination (see Table 5.1).

Crime rate and terrorist attack variables have expected negative signs. Both variables are destination-specific variables and have significantly negative impact on tourism demand

for Pakistan. These results are consistent with previous studies (Qiu and Zhang, 1995; Neumayer, 2004; Giacomelli, 2006; Phakdisoth and Kim, 2007)

Dummy variables are introduced to capture the impact of exchange rate regime, Afghan war and political instability on tourism demand for Pakistan. Dummy variable of exchange rate regime has positive sign but does not have significant impact on tourism demand for Pakistan. However, results confirm the negative expected signs of Afghan war and political instability. While dummy variable of political instability is showing significant impact on tourism demand for Pakistan.

TABLE 5.1: THE FIXED EFFECTS ESTIMATES
(DEPENDENT VARIABLE IS LOG OF TOURISM DEMAND)

Independent Variable	(1)	(2)	(3)	(4)	(5)
Income (origin)	1.101***	1.070***	1.346***		1.282***
	(0.334)	(0.142)	(0.0821)		(0.095)
Income (destination)	0.470*	0.241			
	(0.226)	(0.189)			
Relative Prices	-0.124	-0.001***	-0.115*		-0.193***
	(0.062)	(0.071)	(0.096)		(0.069)
Substitute price (Bangladesh)	-0.179	-1.250***			
	(0.475)	(0.041)			
Substitute price (Iran)	-0.158	-0.469*			
	(0.254)	(0.277)			
Nominal exchange rate	0.018*		0.143*		
	(0.147)		(0.042)		
Travel cost	-0.146***				
	(0.044)				
Infrastructure	0.019			0.850*	
	(0.295)			(0.103)	
Law and order expenditure	0.021*	0.021		0.568***	
	(0.017)	(0.018)		(0.019)	
Crime rate	-0.088**	0.071*		-0.039***	
	(0.043)	(0.042)		(0.037)	
Terrorist attacks	-0.051*			-0.021*	
	(0.018)			(0.008)	
Dummy of exchange rate regime	0.025				
	(0.075)				
Dummy of afghan war	-0.008	-0.090**			
	(0.043)	(0.038)			
Dummy of political instability	-0.014*			-0.036**	
	(0.034)			(0.039)	
AR(1)	0.042***	0.735***	0.737***	0.777***	0.821***
	(0.092)	(0.044)	(0.042)	(0.042)	(0.035)
Number of countries	8	8	8	8	8
Adjusted R^2-squared	0.936	0.9331	0.9326	0.9316	0.775
Durbin-Watson statistics	1.996	2.094	2.025	2.131	1.982

Note: Standard errors are in parentheses.
*Significant at 10%, **significant at 5%, ***significant at 1%

As a result of these findings, it can be considered that the number of tourist arrivals and, consequently, tourism industry revenues are strongly dependent on the economic situation of the main countries of origin (Canada, China, France, Germany, India, UK and USA). In this sense, if the economic situation of these countries worsens it could be lead to decrease in revenue income of the Pakistan (destination) tourism sector. Therefore, a good strategy for entrepreneurs and policymakers would be to try to diversify the risk by attracting tourists from other countries of origins.

5.2.   Results of Generalized Method of Moments (GMM):

Although FEM has given the significant results of main determinants of tourism demand with expected signs but the detection of autocorrelation in the model, during the estimation of equation (4.2) is evidence of dynamic misspecification. To remove the problem of autocorrelation AR (1) has been applied. However, the presence of lagged dependent variable usually causes the problem of endogeniety and due to this problem, pooled OLS and fixed effect estimations are not considered totally reliable.

In order to investigate the possible dynamics, equation 4.3 is estimated by the GMM technique as proposed by Arellano and Bond (1991). The main results from GMM technique are summarized in Table 5.2. It is clear from column 1-5 of Table 5.2 that the most significant variable is the lagged dependent variable, and also that there are persistence/reputation effects that apply over time in tourist decisions vis-à-vis destinations. For example, when tourists return to a particular destination it is because,

they had a good experience, that they visit that destination again. Munoz and Martin (2006) in their study, show that habit persistence is important for explaining foreign tourism demand. In our study, the lagged dependent variable also shows significant impact with positive sign and it is consistent with the theory. Lagged dependent variable is highly elastic 1.497 in column 3 showing that tourist respond strongly to previous tourist experiences. This result supports the findings of Witt and Martin (1987), also.

The income elasticity of demand for tourism loses its significance in GMM and is significant with also expected positive sign on Table 5 in column 5 only. The coefficient of income (origin) elasticity has not been found to be low. Therefore, the dynamic estimation of the demand function of tourism in Pakistan suggests that origin income is not a very important variable in choosing Pakistan as a destination place. These results support the study of Proenca and Soukiazi (2005).

The possible reason could be that tourist arrivals are not dependent on economic situation of origin and another reason could be that if tourist's wealth increases they would not prefer Pakistan as their destination place. Income of destination is used to indicate the economic status of the destination place and in case of dynamic model, results are inelastic and do not show a significant impact. This shows that as the economic situation in Pakistan improves, it will not significantly affect the decision of tourists visit to Pakistan.

Relative prices appear to be significant in column 2, 3 and 5 with negative signs and are showing elasticity less than one. Tourism to developing countries is less sensitive to price changes, because the cost of living in less developed countries is relatively low (Phakdisoth and Kim, 2007). Substitute destination prices (Bangladesh and Iran) have insignificant impact in case of dynamic model with negative sign in case of Bangladesh as substitute destination which is according to the theory. While has positive sign when consider Iran as a substitute destination.

The coefficient of nominal exchange rate is significant with negative sign. Travel cost which is measured by world crude oil price is showing significant impact with negative sign. The results of travel cost show that increase in the crude oil price decreases the tourist arrivals to Pakistan.

Infrastructure variable is found to be highly significant and elastic in dynamic panel data model and shows that for an increase in tourism demand there is need to improve the infrastructure of a destination particularly in Pakistan. Law and order expenditure variable found to have a positive sign and with low value but does not show a significant impact on tourism demand for Pakistan in case of dynamic panel data model.

Crime rate variable indicates a negative and significant impact on international tourism demand for Pakistan. Due to increase in crime rate in the world, the tourist behaviour in general has changed. Crime rate is found to have an unfavorable impact on tourism demand.

TABLE 5.2: THE GMM ESTIMATES
(DEPENDENT VARIABLE IS LOG OF TOURISM DEMAND)

Independent Variable	(1)	(2)	(3)	(4)	(5)
Income (origin)	-0.057*** (0.1028)	0.052 (0.097)	0.035 (0.105)		0.121*** (0.054)
Income (destination)	0.097 (0929)	0.148 (0.608)			
Relative Prices	- 0.336 (0.306)	-0.786* (0.339)	-2.009*** (0.381)		-0.558*** (0.226)
Substitute price (Bangladesh)	-0.689 (7.901)	-3.724 (5.275)			
Substitute price (Iran)	2.955 (3.285)	10.832*** (2.453)			
Nominal exchange rate	-0.546*** (0.191)		-0.384*** (0.128)		
Travel cost	-0.027 (0.567)	-0.036** (0.014)			
Infrastructure	1.629*** (0.504)			0.535** (0.236)	
Law and order expenditure	0.007 (0.031)	0.106* (0.053)		-0.038 (0.077)	
Crime rate	-0.68*** (0.029)	-0.035 (0.036)		0.024*** (0.044)	
Terrorist attacks	0.045*** (0.014)			0.023 (0.021)	
Dummy of exchange rate regime	-0.146*** (0.043)				
Dummy of afghan war	-0.209*** (0.049)	0.005 (0.070)			-0.010 (0.014)
Dummy of political instability	-0.028 (0.027)				
lag of tourism demand	0.575*** (0.143)	1.119*** (0.182)	1.497*** (0.462)	0.567*** (0.120)	1.354*** (5.544)
Constant	14.421** (6.257)	6.732*** (2.571)	7.23*** (0.871)	7.482*** (0.567)	7.298*** (0.788)
N	284	284	284	284	284
j-statistics	0.097 27.548	0.128 36.352	0.1057 30.018	0.132 37.488	0.127 36.068

Note: Standard errors are in parentheses.
*Significant at 10%, **significant at 5%, ***significant at 1%.

The constant term or intercept is important to note, since it is giving positive sign. This shows that in spite of security risks major tourist generating countries have an overall positive image of Pakistan and they continue to visit Pakistan. The dummy variable of exchange rate regime and Afghan war give significant impact on tourism demand for Pakistan and also with expected negative sign for its coefficient.

Since the results of Table 5.2 show that the lagged dependent variable has a significant effect on the demand of inbound tourism for Pakistan, it suggests that the word-of-mouth effect and consumer persistence are important features in the demand for Pakistan tourism. The size of the coefficient of price variables changed and also the significance level improves after excluding dummy variables.

The major implication of these findings for the tourism industry demand for Pakistan is that provision of high quality services is crucial for attracting new and repeat tourists to Pakistan. According to these results, it can also be said that tourism to Pakistan is significantly dependent on income (origin), cost of travel and the socioeconomic conditions of the destination. The negative effects of the terrorist attacks have also affected tourism demand in case of Pakistan. According to these results, attention must be given by the tourism industry in order to maintain or improve price competitiveness vis-à-vis other competing destinations.

Chapter 6

CONCLUSION AND POLICY IMPLICATIONS

In this chapter, we will discuss the main findings of the study and draw policy implication on the basis of our conclusions. The review of the related research carried out in the present study suggests that literature on tourism demand provide positive affect of income and negative affect of price variables as well as social and political situation in the country. On the basis of theoretical underpinnings, we derive the tourism demand model for Pakistan. The main results obtained here; that income elasticity is greater than one and lagged dependent variable has significant impact on tourism demand of Pakistan.

The objective of this study was to analyze the determinants of Pakistan tourism demand from the eight main origin countries, Canada, China, France, Germany, Japan, UK and USA by using the most recent data to see which factors affect international tourist demand arrivals to Pakistan. To explain tourists behavior in Pakistan, panel data techniques were employed. Both static panel data regressions, using FEM, and also dynamic panel data regressions, using the Arellano-Bond first step GMM-estimator, were applied. The model was used to measure the performance of tourist arrivals from eight tourists generating countries to Pakistan between 1972 and 2007.

The panel data results indicate that the Pakistani tourism market is very sensitive to changes in the income of origin countries. The estimated value of the income elasticity is

greater than one, indicating that as tourist origin income increases, the number of tourists to Pakistan increases. Based on these results, the economic status of tourists who visit Pakistan is an important factor in determining tourism demand for Pakistan. This result is consistent with economic theory and this result was similar with the results of previous empirical studies of tourist demand (Lim & McAleer, 2003; Kafono & Gounder, 2004; Narayan (2004). The income elasticity of the demand for tourism higher than one confirms the usual finding that tourism is a luxury good. It is also interesting to note that GDP per capita of Pakistan as a measure of the size of the economy/facilities provided to tourists, is also significant and has positive impact on tourism demand to Pakistan. These findings are consistent with the previous studies. Therefore, government should focus on the size of the economy.

We find the relative price variable to be significant, showing the expected negative signs with their coefficients falling between 0 and 1. This suggests that tourism to Pakistan is relatively inelastic to changes in relative price levels. The negative relationship makes economic sense, because as the destination price level relative to the origin price level increases (a decrease in purchasing power in the origin country), the number of tourists to the destination decreases. The similar results are obtained from the study of (Tan *et al.*, 2002; Phakdisoth and Kim, 2007).

The substitute price elasticity is negative and also has significant impact. Therefore, the higher prices in Pakistan may result in a change of destination rather than in a decision to stay home. Results obtained with regard to the nominal exchange rate are not found to be

significant in panel data model. Tourism demand for Pakistan is also sensitive to cost of travel (world price of crude oil) i.e. a percentage increase in travel cost would result in decrease of tourism demand for Pakistan.

The infrastructure and law and order variables have emerged as significant determinants of total tourist flow to Pakistan with positive signs. The crime rate and terrorist attack variables are found to have a negative and significant impact on tourism demand for Pakistan. The coefficient of dummy variable that captures the effect of political instability also has a negative and significant impact on tourism demand for Pakistan, in case of static panel data model.

The dynamic panel data model is somewhat differ from the static panel data model. As dynamic methodology has the advantage of solving estimation problem of misspecification. Song and Witt (2003) also mentioned the importance of lagged dependent variable. Therefore, one of the main conclusions of the study is the significant value of the lagged dependent variable, which may be interpreted as high consumer loyalty to the destination and/or as an important word-of-mouth effect on the consumer decision in favour of the destination. Similar results have been obtained from the study of (Garin-Munoz, 2006).

Relative prices are significant with negative sign in dynamic panel data model. The results suggest that change in prices would deter the decision of tourists to select Pakistan as destination. The coefficient of nominal exchange rate is significant but with negative sign

which is contrary to expectation and theory. Travel cost elasticity shows that increase in travel cost negatively affects Pakistan.

Infrastructure variable shows significant and positive impact, while crime rate has a negative influence on tourism demand. The dummy variables for exchange rate regime and Afghan war show significant negative impact on tourist arrivals.

Overall, the results imply that the improvement of the quality of services is important for attracting more international tourists to Pakistan. These should be the priority areas for policy intervention. The results from both types of models suggest that the economic conditions of the country of origin are the most important factor in determining tourism demand. However, in order to attract more tourists, it is important to facilitate tourists by improving the transport infrastructures and stabilizing the price level through sound macroeconomic policy. Our analysis also suggests that policy makers in tourist destinations should greatly emphasize on safety and security and socio-economic condition of the country.

In conclusion of this study there appears to be evidence that a combination of structural, institutional and economic factors influence the tourism industry in Pakistan. Also, the political instability and increase in crime rate in Pakistan acts as a barrier to growth in tourist arrivals.

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APPENDIX

TABLE: THE POOLED OLS ESTIMATES
(DEPENDENT VARIABLE IS LOG OF GDP PER WORKER)

Independent Variable	(1)	(2)	(3)	(4)	(5)
Income (origin)	0.018*	0.189***	0.179***		0.178***
	(0.026)	(0.175)	(0.046)		(0.048)
Income (destination)	-0.573			1.918	
	(0.918)			(4.384)	
Relative Prices	-0.020	-0.310*	0.049		-1.073***
	(0.111)	(0.416)	(0.315)		(0.215)
Substitute Prices (Bangladesh)	-0.279	0.920*			
	(0.589)	(0.535)			
Substitute Prices (Iran)	-0.293	0.075			
	(0.302)	(0.219)			
Nominal exchange rate	-0.000	0.206***	0.555***		
	(0.071)	(0.072)	(0.117)		
Travel cost	-0.157*	-0.002**			
	(0.090	(0.175)			
Infrastructure	0.613			0.602	
	(0.691)			(2.123)	
Law and order index	0.039			0.002	
	(0.037)			(0.106)	
Crime rate	-0.025			-0.479**	
	(0.039)			(0.138)	
Terrorist attacks	-0.052			0.057	
	(0.035)			(0.088)	
Dummy of exchange rate regime	0.156				
	(0.131)				
Dummy of afghan war	-0.030*				
	(0.069)				
Dummy of political instability	-0.077**			0.032	
	(0.058)			(0.176)	
Constant	1.463	1.272***	8.536***	0.638***	9.86***
	(5.979)	(8.753)	(0.386)	(0.211)	(0.034)
AR(1)		0.901***			0.952***
		(0.031)			(0.017)
Durbin-Watson Statistics	1.724	1.976	2.046	2.001	2.048
Number of countries	8	8	8	8	8
Adjusted R²-squared	0.936	0.9631	0.9326	0.9216	0.775

Note: Standard errors are in parentheses.
*Significant at 10%, **significant at 5%, ***significant at 1%

Wald Test

Test Statistics	Value	Degree of freedom	Probability
F-Statistics	286.788	(7,234)	0.0000
Chi-Square	2007.519	7	0.0000
Null Hypothesis Summary:			
Normalize Restriction (=0)	Value	Std.Error	
C(15) - C(22)	1.432349	1.128581	
C(16) - C(22)	0.072131	1.103600	
C(17) - C(22)	0.375812	0.787080	
C(18) - C(22)	0.506933	0.590929	
C(19) - C(22)	3.312572	1.025057	
C(20) - C(22)	-0.458278	0.381874	
C(21) - C(22)	2.943125	0.741221	

Restrictions are linear in coefficients

Fixed Effect Model

The country specific fixed effect is not common and they are given below

Fixed effects	1	2	3	4	5
Canada	-11.940	-15.979	-4.273	8.409137	-2.477
China	-11.954	-9.003	0.096	7.608	0.8972
France	-11.958	16.699	-4.375	8.319	-2.5331
Germany	-11.890	-15.949	-3.924	8.794	-2.076
India	-11.765	-4.028	-3.074	10.455	3.924
Japan	-11.996	-17.502	-4.754	8.590	-2.767
UK	-12.047	-13.849	-1.950	10.803	-0.096
USA	-11.940	-15.386	-3.354	9.819	-1.459

Residual Correlation Matrix

	Canada	China	France	Germany	India	Japan	UK	USA
Canada	1.000	0.044	0.078	0.061	0.048	0.010	0.081	-0.065
China	0.044	1.000	0.118	0.850	-0.097	0.601	0.551	0.288
France	0.078	0.118	1.000	0.071	0.206	0.465	0.609	0.273
Germany	0.061	0.850	0.071	1.000	0.029	0.757	0.405	0.095
India	0.048	-0.097	0.206	0.060	1.000	0.1940	0.074	0.055
Japan	0.010	0.601	0.465	0.7158	0.195	1.000	0.570	0.142
UK	0.081	0.551	0.60	0.4054	0.078	0.570	1.000	0.246
USA	-0.065	0.288	0.273	0.095	0.055	0.142	0.2461	1.000