International Tourism Demand and Determinant Factor Analysis in Ethiopia

In Ethiopia, to position tourism as a key economic sector, recently it is identified as one of the major strategies of using tourism for poverty alleviation. The country receives tourist from various source markets and tourism in Ethiopia has grown over the years. As the country gears up its efforts to make itself a top five tourism premier destination in Africa, it becomes more important to understand the factors that influence international tourism demand among others things to attain economic growth. International tourism demand for Ethiopia lags behind from other African countries like Egypt, Morocco, Tunisia, Kenya and South Africa. Furthermore, the tourism product offered by Ethiopia is becoming increasingly noncompetitive. Hence, there is need to offer demand driven tourism products that ensure visitors to come to Ethiopia and stays longer. Motivated by this need, the study sought to investigate the determinants of international tourism demand. Specifically, on the effect of economic factors, tourist socio-demographic characteristics, political factors and destination characteristics on international tourism demand in Ethiopia. The study used both longitudinal and cross sectional research designs and panel data for economic variables from eleven countries for the period of only one month time as of (10th December 2018 and 10th January 2019). Data were collected from the World Bank Database, United Nations Database, International Monetary Fund Database and Ministry of Culture and Tourism Statistics. Survey data were collected from individual tourists leaving the country using questionnaires. The study used a dynamic panel regression model to determine the effect of economic factors on international tourism demand and a count data regression model to determine the effect of socio-demographic characteristics, political factors and destination characteristics on international tourism demand. The study results indicated that tourism price, travelling cost, trade openness and word of mouth effect were the main economic factors influencing international tourism demand in Ethiopia. The tourist’s socio-demographic characteristics such as annual household income, age and occupational status were found to significantly influence international tourism demand. The political factors composite index and destination characteristics composite index were also important determinants of international tourism demand. Taking into consideration of all these factors affecting tourism demand, the government and all the tourism stakeholders should work towards making Ethiopia’s tourism product competitive, prices remain reasonable, development of tourism infrastructure and offering quality services, with diversification of tourism product.

Keywords: International Tourism Demand, Tourism Products, Destination Characteristics and Political Factors.

Introduction

Background of the Study

The World Tourism Organization (WTO) has recognized tourism as one of the largest and fastest growing industries in the world. The growth of tourism industry is demonstrated by the ever increasing number of destinations opening
up and investing in tourism development, turning modern tourism into a key
driver for socio-economic progress through the creation of jobs and enterprises,
infrastructure development and the export revenues earned (WTO, 2017).

According to World travel and tourism council (WTTC, 2018) travel and
tourism in 2017 globally employed about 8.7 percent of total employment,
generated 9.1 percent of total gross domestic product and visitor exports
generated US$1,170.6 billion (5.3 percent of total exports).

International tourism plays an important role of promoting world peace,
both by providing an incentive for peace keeping and by building a bridge
between cultures (Eilat & Einav, 2004). In developing countries, tourism plays
an important role in stimulating investments in new infrastructure, as well as
generating government revenues through various taxes and fees.

In Africa, tourism has been identified as a key sector for the achievement
of shared economic growth and poverty alleviation (Mitchell & Ashley, 2006;
World Bank, 2006). International tourist arrivals have shown increased growth
rising from 25 million in 1950, to 278 million in 1980, 528 million in 1995,
and 2,035 million in 2018. According to UNWTO Tourism Towards 2030, the
number of international tourist arrivals worldwide is expected to reach 1.8
billion by the year 2030 (WTO, 2018).

However, world tourism has experienced continued expansion and
diversification over the past six decades, Africa’s tourism market share remains
small compared to other world regions. This is despite the fact that, Africa has
a lot to offer that cannot be found elsewhere as it holds a rich history as the
continent of the explorers and as a place for adventures (Christie & Crompton,
2001).

In Africa there are unique tourist destinations, where some of the greatest
views in the world and natural attractions find. This is true not only for the
natural resources, but also for its culture, traditions and customs. Likewise,
Ethiopia offers a variety of travel experience as it is bestowed with diverse
tourist attractions to foreign visitors.

Tourist attractions in Ethiopia comprise abundant wildlife, natural habitats,
world heritage sites and a number of cultural attractions from the various ethnic
groups. Similarly, Addis Ababa the capital city with good hotels and
conference facilities is well positioned to attract the business markets such as
meetings, incentives, conferences and exhibitions.

Ethiopia receives tourism from various source markets and tourism in
Ethiopia has grown over the years. As Ethiopia gears up its efforts to make
itself a top five tourism premier destination in Africa, it becomes more
important to understand the factors that influence international tourism demand
for Ethiopia among others things.

Statement of the Problem

International tourism demand for Ethiopia lags behind other African
countries like Egypt, Morocco, Tunisia, Kenya and South Africa (WTO, 2017).
This is despite the fact that, Ethiopia is bestowed with diverse tourist attractions and thus has great tourism potential. Furthermore, the number of tourist’s arrivals to Ethiopia from different corner of the world does not increase constantly but have experienced cyclical fluctuations over the years. Likewise, the Ethiopia tourism product offered to the market is becoming increasingly noncompetitive. Ethiopia is experiencing problems of competition due to degradation and reduction of the quality of Ethiopia’s tourism product as more tourists are switching to other countries in the region such as Kenya, Uganda, Tanzania, Egypt and Zimbabwe which offer similar tourist attractions (World Bank, 2016).

There is a need therefore, for Ethiopia to offer demand driven tourism products that ensure visitors to come and stays longer. The government, tourism planners and marketers therefore need to clearly understand which important factors influence international tourist’s decision to visit Ethiopia as chosen destination.

Song and Li (2008) noted that identifying the determinants of tourism demand and estimating magnitudes of their influence on tourism demand are of great interest to decision makers in tourist destinations. Hence, an understanding of tourism demand is a starting point for the analysis of why tourism develops, who patronizes specific destinations and what appeals to the client market.

Empirical studies on international tourism demand have focused on tourism demand in developed countries while Africa has received very little attention (Rogerson, 2007; Xiao & Smith, 2016). The studies have mainly considered the economic factors affecting tourism demand even though it ignores the non-economic factors due to unavailability of data.

Eilat and Einav (2004) and Naude and Saayman (2005) noted that when modeling international tourism demand in Africa, both economic and non-economic factors such as the destination characteristics should be taken into consideration since tourism demand may also be significantly affected by non-economic factors.

Empirical studies explaining international tourism demand for Ethiopia are limited. Previous studies on tourism in Ethiopia mainly focused on tourism development (Ondicho, 2016), choice of attractions, expenditure, destination competitiveness and satisfaction of international tourists (Odunga, 2016) and the economic contribution of tourism and carried out a study on estimation of tourism demand (Valle & Yobesia, 2009). Also, the study did not consider non-economic factors which can also influence international tourism demand for Ethiopia. Hence, this study, therefore, attempted to fill this gap by investigating the economic and non-economic factors influencing international tourism demand.

**Objectives of the Study**

The general objective of the study is to investigate the determinant factors of international tourism demand in Ethiopia.
Specific Objectives

a) To find out the effect of economic factors on international tourism demand in Ethiopia.

b) To find out the effect of political factors on international tourism demand in Ethiopia.

c) To investigate the effect of tourist socio-demographic characteristics on international tourism demand in Ethiopia.

d) To discover the effect of destination characteristics on international tourism demand in Ethiopia

Research Hypotheses

The study sought to test the following null hypotheses:

– H01: There is no significant relationship between economic factors and international tourism demand in Ethiopia.

– H02: There is no significant relationship between political factors and international tourism demand in Ethiopia.

– H03: There is no significant relationship between tourist’s socio-demographic characteristics and international tourism demand in Ethiopia.

– H04: There is no significant relationship between destination characteristics and international tourism demand in Ethiopia

Literature Review

International Tourism Demand

Pearce (1995) referred to tourism demand as the relationship between individual’s motivation to travel and their ability to do so. Song and Witt (2000) considered tourism demand as the amount of a set of tourist products that the consumers are willing to acquire during a specific period of time and under certain conditions which are controlled by the explanatory factors used in the demand equation.

The total demand for tourism is considered to consist of three basic components which include actual demand, suppressed demand and no demand (Cooper, Fletcher, Fyall, Gilbert & Wanhill, 2008; Page & Connell, 2006). The no demand component constitutes the category of those who do not wish to travel or are unable to travel. Suppressed demand refer to the section of the population who do not travel for some reason while actual demand refer to the aggregate number of tourists recorded in a given location or at a particular point in time.

Page and Connell further noted that actual demand depended on the specific features and characteristics of those product and service alternatives
that the customer evaluates to make the final purchase decision. This includes choosing the destination, the time and duration of travel, the activities undertaken at the destination, and the amount of money spent for the holiday. Demand for tourism is segmented and is distinguished through a number of different markets.

Tourism demand can be analyzed for groups of countries, individual countries, regions or local areas. Demand can also be disaggregated by categories as types of visits and types of tourists. Tourism visits can take place for various reasons including holidays, business trips, visits to friends and relatives (VFR), conferences, and religious purposes among others (WTO, 2017).

International tourism demand is usually measured in terms of the number of tourist visits from an origin country to a destination country, in terms of tourist nights spent in the destination country or in terms of tourist expenditures by visitors from an origin country in the destination country. The number of tourist arrivals is most frequently used as the measure of demand, followed by tourist expenditure or tourist receipts (Crouch, 1994, 1995; Lim, 1999; Song & Li 2008; Witt & Witt, 1995).

**Determinants of International Tourism Demand**

Tourism demand modeling and forecasting studies rely heavily on secondary data in terms of model construction and estimation. To determine the explanatory variables influencing tourism demand, the empirical models borrow heavily from the consumer theory (Song & Witt, 2008).

The traditional theory of demand considers the price of a commodity, prices of other commodities, consumer’s income and tastes as the most important determinants of market demand (Koutsoyian, 1991). Koutsoyian further explains that, demand is also affected by other factors such as the distribution of income, total population and its composition, wealth, credit availability, government policy, past levels of demand and past levels of income.

Cooper et al., (2008) noted that at the individual level the factors that influence demand for tourism are closely linked to models of consumer behavior and that no two individuals are alike and differences in attitudes, perceptions, images and motivation have an important influence on travel decisions. Goeldner and Ritchie (2003) also stated that, the demand for travel to a particular destination is a function of the person’s propensity to travel and the reciprocal of the resistance of the link between origin and destination areas.

A person’s propensity to travel is determined largely by his/her psychographic profile, socio economic status and marketing effectiveness. Resistance relates to the relative attractiveness of various destinations and depends on the economic distance, cultural distance, cost of tourist services, quality of service and seasonality.

Though tourism demand could be affected by a wide range of factors, such as economic, attitudinal and political factors, the most commonly considered
factors influencing tourism demand are origin income, the own price of a
destination, substitute prices of alternative destinations and dummy variables to
capture the effects of one-off events (Song, Li, Witt & Fei, 2010). Overviews
of previous empirical studies on international tourism demand (Li, Song &
Witt, 2005; Lim, 1999; Song & Li, 2008) revealed that tourists income, tourism
prices in a destination relative to those in the origin country, tourist prices in
the competing destinations and exchange rates were the most significant
determinants of international tourism demand.

The accuracy of different modeling methods vary for data from country to
country over different time periods, and therefore, neither a single model nor a
single method will necessarily be appropriate for all origin-destination pairs
(Witt & Witt, 1995).

International Tourism in Ethiopia

Ethiopia offers foreign visitors a variety of travel experience as it is
bestowed with diverse tourist attractions. Addis Ababa the capital city with
good hotels and conference facilities is well positioned to attract the business
markets such as meetings, incentives, conferences and exhibitions. Tourism in
Ethiopia for many years played a vital role in the economy of the country. The
total contribution of travel and tourism to GDP in Ethiopia (including wider
effects from investment, the supply chain and induced income impacts) was
ETB 91,898.4 million in 2014 and grow by 1.6% to ETB 93,330.3 million in
2015. It is also forecast to rise by 4.9% pa to ETB 150,738.0 Million by 2025
(WTTTC, 2016).

Furthermore, tourism in Ethiopia has led to growth of industries such as
transport sector, accommodation, entertainment, travel agencies and related
services, administration, finance and health, among others, which are directly
linked to it. Through its multiplier effect, tourism has stimulated growth in
several other industries like construction, agriculture, hand crafts,
manufacturing and processing. Tourism development has led to economic
growth of the country through creation of indirect and direct job opportunities.

Research Methodology

Research Design

The study used both longitudinal and cross sectional research design
besides a descriptive research design. In a longitudinal study, measurements
are taken on each variable over two or more distinct time periods. This allows
the researcher to measure change in variables over time.

In longitudinal studies of the panel variety, the research may study the
same subjects over time and the use of panel data in this study allowed
controlling for individual heterogeneity among the different countries in order
to avoid biased results.
The use of panel data also enabled to have more degrees of freedom than with time-series or cross-sectional data, to control for omitted variable bias and to reduce the problem of multicollinearity, hence improving the accuracy of parameter estimates. In addition, panel data are better able to study the dynamics of adjustment thus are better suited to study the dynamics of change of tourism demand.

The panel data is constructed from observations of the several study variables made in 11 countries, that is, United Kingdom, Germany, Italy, France, United States of America, Canada, India, Japan, Israel and Uganda for only one month of the time period as of (10th December 2018 and 10th January 2019).

A cross sectional design involves the collection of data from a number of cases at a single point in time and is also referred to as a survey design. The choice of the survey research design was made based on the fact that it allowed the researcher to collect data from respondents at a particular point in time and to measure the relationship of the study variables at the specified time in order to describe how variables were related.

In this study, data from tourists visiting Ethiopia is collected to determine the current status of demand for international tourism in Ethiopia with respect to specified variables. Hence, the survey study enabled the researcher to learn about the factors influencing tourists to visit Ethiopia as well as their personal characteristics.

Target Population

The study has two target populations, that is, target population at national level and at individual level. The target population at the national level is the tourist departures from Ethiopia for tourists coming from eleven countries, United Kingdom, Germany, Italy, France, United States of America, Canada, India, Japan, Israel and Uganda for only one month of time period as of (10th December 2018 and 10th January 2019). Accordingly, the researcher totally takes 323 representing sample data from a total of 2000 target populations (statistical abstract, 2019), that is, target population at national level and at individual level. The target population at the national level is the tourist departures from Ethiopia for tourists coming from eleven countries, which accounts 2000.

Sampling Design

At the national level, the number of tourist departures to Ethiopia for only one month of the time period as of (10th December 2018 and 10th January 2019) from the 11 countries is considered. The target population at the national level is the tourist departures from Ethiopia for tourists coming from eleven countries. This is calculated at a 95 percent level of confidence and an error margin of 5 percent, using sample size determination formula. Based on the following sample size determination formula adapted from Cochran (1963:75)
which provides a simplified method to calculate the sample sizes and the following equation helps to yield a representative sample for proportions.

\[ n_0 = \frac{Z^2pq}{e^2} \]

Where

- \( n_0 \) is the sample size,
- \( Z \) is the abscissa of the normal curve that cuts off an area \( \alpha \) the tails (\( 1 - \alpha \) equals the desired confidence level, e.g., 95%)
- \( e \) is the desired level of precision,
- \( p \) is the estimated proportion of an attribute that is present in the population, and \( q \) is 1-\( p \). The value for \( Z \) is found in statistical tables which contain the area under the normal curve.
- \( p=.5 \) (maximum variability). Furthermore, suppose the researcher desire a 95% confidence level and ±5% precision.

The resulting sample size is demonstrated as:

\[ n_0 = \frac{Z^2pq}{e^2} = (1.96)^2 (.5) (.5) = 385 \]

The sample size \((n_0)\) adjusted using the following equation as of:

\[ n = \frac{n_0}{\left(\frac{n_0 - 1}{N}\right)^2} \]

Where:

- \( n \) is sample size
- \( N \) the population size

\[ = \frac{385}{(385-1)/2000} = 323 \]

It is also possible to calculate with the use of sample size determination formula adapted from Yamane (1967:886) which can also help to yield a representative sample for proportions.
\[ n = \frac{N}{1 + N(\theta)^2} \]

Where; \( N \) = the total population
\( n \) = the required sample size
\( e \) = the precision level which is \( (\pm 5\%) \) (Maximum variability)

\[
n = \frac{20000}{1+2000(.05)^2} = 333
\]

Accordingly, researcher will take 323 sample sizes and from this number and the distributions of the sample size were distributed to those tourists that came from 11 countries (United Kingdom, Germany, Italy, France, United States of America, Canada, India, Japan, Israel and Uganda).

The representative section from the identified number of sample was selected using systematic random sampling technique.

Six manager’s representatives from FDRE ministry of culture and tourism were taken and it was selected purposively for interview through their knowledge and experience plus the selection of the number will be conducted by using convenience sampling technique (non-probability sampling) that is based on their working experience.

**Data Collection Instruments and Procedure**

**Data Collection Instruments**

Primary and secondary data were used by employing both qualitative (discussion, and in depth interview) and quantitative (questioner survey). The primary data were collected through questionnaire and key informant interview. Structured questionnaire will be applied to the sample individuals or respondents.

Most questions in the questionnaire were close-ended questions and contain and organized on the basis of the research specific objectives to ensure relevance to the research problem. However, opportunities were given to the respondents to say more through open-ended questions.

The questionnaires were broken into five sections representing general information of the tourists and the number of nights spent. Tourist’s socio-demographic characteristics section which sought the demographical and social characteristic of the tourist, international tourism demand section where the numbers of nights spent by the tourist were determined.

Political factors section dealing with political factors which influenced the tourist decision to visit. Destination characteristics section dealing with destination attractions and facilities considered to have an influence on tourist’s
decision to come to and the final section on other information dealing with
finding out the satisfaction of the tourists with their holiday in Ethiopia.
Moreover, structured, unstructured and matrix questions were used in the
questionnaires. Accordingly, structured questions are easier to administer while
unstructured questions permit a greater depth of response. Matrix questions are
easier to complete hence the respondent is unlikely to be put off. Use of these
three types of questions enhanced collection of relevant data.
Key informant interview were also conduct to collect primary data. With
regard to this primary data collection instrument, structured interview were
undertaken with the selected institute.
Secondary data which are relevant to the study were included and obtained
from various sources such as Statistical Abstracts from FDRE, MoCT, World
Bank (WB), United Nations (UN) database and International Monetary Fund
(IMF) database.

Data Collection Procedure

Secondary data was collected through analysis of statistical abstracts,
international Monetary Fund financial statistics, and World Bank database and
statistical abstracts and entered in an Excel spreadsheet to easily organize the
data in panel form.
Primary data collection took approximately one month. The data was
collected from tourists leaving the country during the period 10th December
2018 to 10th January 2019 at the Bole international departure lounges. The data
was collected on three different days selected randomly every week for a
period of three weeks.

Empirical Model

The study followed the standard theory of demand which formed the
theoretical foundations for modeling international tourism demand. The study
used the single estimation framework and derived the international tourism
demand function for Ethiopia from all 11 countries rather than from a
particular country of origin. In order to explain the determinants of
international tourism demand for Ethiopia, the study used two regression
models.
A dynamic panel regression model was used to analyze the effect of
economic factors on international tourism demand for Ethiopia while a count
data regression model was used to determine the effect of socio-demographics
factors, political factors and destination characteristics on international tourism
demand for Ethiopia.

Dynamic Panel Regression Model

Panel regression models are based on panel data and the two commonly
used techniques in panel data estimation are the Fixed Effects Model (FEM)
and the Random Effects Model (REM). When the data contains a lagged dependent variable in the regression equation the fixed effects and the random effects estimators produces biased results.

In this case, dynamic panel regression models should be used. The dynamic panel regression models are estimated using generalized method of moments (GMM), a method of estimation that provides consistent estimates (Baum, 2006; Roodman, 2009).

A dynamic log-linear model was specified as given in equation:
\[ \ln TDi_t = \beta_0 + \beta_1 \ln TDi_{t-1} + \beta_2 \ln GDPi_t + \beta_3 \ln TPi_t + \beta_4 \ln SPiSA + \beta_5 \ln TCi_t + \beta_6 \ln TOi_t + \beta_7 D2018 + \alpha_i + Uit \]

Where:

\( i \) denotes the cross section units (\( i = 1,2,\ldots,11 \)) and \( t \) denotes the time period (\( t =1,2,\ldots,21 \)).

\( \ln TDi_t \) and \( \ln TDi_{t-1} \) = Number of tourist departures from Ethiopia back to the \( i \)th tourists origin for year \( t \) and \( t-1 \) respectively.

\( \ln GDPi_t \) = Real GDP per capita for tourists origin country \( i \) at year \( t \).

\( \ln TPi_t \) = Price of tourism services (destination country) at year \( t \).

\( \ln TCi_t \) = Travel cost from origin country \( i \) to Ethiopia at year \( t \).

\( \ln SPiSA \) = Price of tourism services in (competing destination) at year \( t \).

\( \ln TOi_t \) = Trade openness between tourists origin country at year \( t \).

\( D2018 \) = Dummy variable for political instability taking a value of one in 2017 and zero otherwise.

\( \alpha_i \) = Unobservable country effect and represents all factors affecting international tourism demand that do not change over time.

\( Uit \) = stochastic disturbance term.

\( \beta_0 \) = Constant term

\( \beta_1 (i = 1, 2, 3,\ldots, 7) \) are the parameters to be estimated and refer to the contemporaneous short-run effect of the independent variables on the dependent variable at time \( t \). However, an effect on time \( t \) will have an impact on \( t + 1, t + 2, \) and so on through the lag of the dependent variable. The long run effect can be calculated as:

\[ \frac{\beta_1}{1-\beta_1} \]

The double logarithmic dynamic regression panel model was used in the study to allow the researcher interpret the model parameters directly in terms of demand elasticities. An elasticity greater than one, that is, where the demand is elastic, implies that the demand for tourism services responds proportionately more than the change in the independent variable. On the other hand, an elasticity of less than one, that is, demand is inelastic, implies that the demand for tourism services responds proportionately less than the change in the explanatory variables. Income elasticity of demand is expected to be positive for most goods and services.
Demand for basic goods and services should be income inelastic whilst that for luxury items should be elastic. Negative income elasticity indicates inferior goods, in this case an inferior tourism destination (Koutsoyians, 1991).

**Count Data Regression Model**

Since the study dependent variable is measured using count data, a count data regression model is used. A count data regression model is used for modeling the count of things as a function of covariates and the counts are non-negative integers.

The most commonly used count data regression models are Poisson and negative Binomial models. The Poisson distribution is often used to model count data when the events being counted are somewhat rare. As the expected number of events increases, a normal distribution can be used as an approximation to the distribution of counts of events.

The Poisson distribution assumes that the mean and variance of the data are equal. The binomial regression model is used instead of Poisson if the data is over dispersed, that is when the variance of the data is not equal to the mean of the data (Heeringa, West & Berglund, 2010). Since the study data is found to be over dispersed, the negative binomial model is used.

The negative binomial regression model in log-linear form is used to address objectives two, three and four of the study. The model is given in equation.

\[
\ln \left( \frac{E(y_i / x_i)}{x_i} \right) = \beta_0 + \beta_1 \text{Expenditure}_i + \beta_2 \text{Income}_i + \beta_3 \text{Age}_i + \beta_4 \text{DE}_i + \beta_5 \text{DO}_i + \beta_6 \text{DG}_i + \beta_7 \text{DMI} + \beta_8 \text{Di} + \beta_9 \text{DTi} + \beta_{10} \text{DRi} + \beta_{11} \text{Poli} + \varepsilon_i
\]

\[
\text{Var}(y_i / x_i) = E(y_i / x_i) (1 + \alpha)
\]

Where:

- \(y_i\) Number of nights spent by a tourist in Ethiopia
- \(\text{Expenditure}_i\) Total amount of money a tourist spent in Ethiopia in US dollars
- \(\text{Income}_i\) Annual household income of the tourist in US dollars
- \(\text{Age}_i\) Age of the tourist in years. The mid-point of grouped data issued instead of age categories.
- \(\text{DE}_i\) Level of education dummy of the tourist with no college education = 0 and at least college level education = 1
- \(\text{DO}_i\) Occupation status dummy of the tourist with unemployed = 0 and employed = 1
- \(\text{DG}_i\) Gender dummy of the tourist where male = 0 and female = 1
- \(\text{DMI}\) Marital status dummy of the tourist with single = 0 and married = 1
- \(\text{DC}_i\) Children dummy of the tourist with have no child = 0 and with children = 1
= DTi = Trip companion dummy of the tourist with travelled alone = 0 and
travelled with companions = 1
= DRi = repeat visit dummy of the tourist with first time = 0 and repeat
visit = 1
= Poli = the composite index representing the political factors influencing
the ith tourist
= Desti = the composite index representing the destination characteristics
influencing the ith tourist
= εi= the random error term
= E (y i /x i) = Conditional mean of the dependent variable given the value
of the independent variables of the ith individual.
= α= Dispersion parameter.

Since count data regression techniques model the log of incident counts,
the coefficients can be interpreted as follows, for a one unit change in the
independent variable, the log of dependent variable is expected to change by
the value of the regression coefficient.

Rather than reporting Poisson or negative binomial results as a regression
coefficient, there is the option of measuring the effect of the independent
variable on the dependent variable through the Incidence Rate Ratio (IRR). The
IRR represents the change in the dependent variable in terms of a percentage
increase or decrease, with the precise percentage determined by the amount
IRR is either above or below 1.

Operationalization and Measurement of Variables

The variable of the study is operationalized as explained in table 1 below:

<table>
<thead>
<tr>
<th>Category</th>
<th>Variable</th>
<th>Operationalization</th>
<th>Measurement</th>
<th>Hypothesized direction of the variable</th>
</tr>
</thead>
</table>
| Dependent variable  | International tourism demand | -Tourists departures
-Number of nights spent                                                                 | Total number of tourists leaving the country back to their country of residence at month t. | None                                    |
|                      |                           |                                                                                   |                                                                              |                                        |
| Independent Variables| Word of mouth effect          | Dependent variable                                                                | Number of tourist who left the country back to their country of residence in the previous year. | Positive                               |
| Economic factors     | Real GDP per-capita         |                                                                                   | Real GDP per capita of the tourist’s origin country measured at constant 2000 | Positive/Negative                      |

Table 1. Operationalization and Measurement of Variables
<table>
<thead>
<tr>
<th>Tourism price</th>
<th>Relative tourism price</th>
<th>US$.</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travelling cost</td>
<td>The total expenses travellers incur for their transportation from their country of origin to destination</td>
<td>price in US dollars at year t multiplied by the tourists country of origin exchange rates at year t.</td>
<td>Negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Political factors</th>
<th>Political factors</th>
<th>Travel restrictions</th>
<th>Yes/ No</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political instability</td>
<td>Measured using a scale of 1-4</td>
<td></td>
<td>Negative</td>
<td></td>
</tr>
<tr>
<td>Travel warnings by origin country government</td>
<td>Measured using a scale of 1-4</td>
<td></td>
<td>Negative</td>
<td></td>
</tr>
<tr>
<td>Visa formalities</td>
<td>Measured using a scale of 1-4</td>
<td></td>
<td>Positive/Negative</td>
<td></td>
</tr>
<tr>
<td>Good relations between tourist origin country and Ethiopia</td>
<td>Measured using a scale of 1-4</td>
<td></td>
<td>Positive</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>Socio-demographic characteristic</th>
<th>Sex</th>
<th>Male/ Female</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male/ Female</td>
<td>Unknown</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Occupational status</td>
<td>The occupational status of the tourist measured using five categories.</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td>The profession of the tourist measured using four categories.</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual household income</td>
<td>Measured using six categories.</td>
<td>Positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>Measured using four categories.</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family size of tourist</td>
<td>Measured using five categories.</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Party composition of the tourist</td>
<td>Measured using seven categories.</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourist spouse</td>
<td>Measured using a scale of 1-3</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourist children</td>
<td>Measured using a scale of 1-3</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourist friends &amp; relatives</td>
<td>Measured using a scale of 1-3</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourist available free time</td>
<td>Measured using a scale of 1-3</td>
<td>Positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Destination attractiveness</td>
<td>Attractions</td>
<td>Natural (weather, wildlife, scenery), culture and sports</td>
<td>Measured using a scale of 1-3</td>
<td>Positive</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------</td>
<td>------------------------------------------------------</td>
<td>-----------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Facilities</td>
<td>Availability and quality of accommodation, food, drinks, transport, communication, hospitality of local people, entertainment, direct flights, health facilities.</td>
<td>Measured using a 1-3 scale</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Refers to all inclusive travel package to independent travel</td>
<td>Measured using a 1-3 scale</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>Distance travelled</td>
<td>Refers to distance between AA and tourist country of residence capital city.</td>
<td>Measured using a 1-3 scale</td>
<td>Negative</td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>Crime, terrorism, ethnic, accidents</td>
<td>Measured using a 1-3 scale</td>
<td>Negative</td>
<td></td>
</tr>
</tbody>
</table>

Data Analyses and Presentation

The data collected was analyzed in accordance of the study objectives and hypotheses. To address objective one, a dynamic panel data regression analysis was carried out. Descriptive statistics (mean and standard deviation) were first computed.

Before carrying out the regression analysis, the data was first tested. Regression analysis requires that data be stationary in order to be able to make meaningful inferences. The use of non-stationary variables in regressions leads to spurious results. The study used the Fisher-type (Choi, 2001) panel regression unit root tests to investigate whether there were any variables in the model that were non-stationary.

Fisher-type tests conduct unit-root tests for each panel individually, and then combine the p-values from these tests to produce an overall test. The SGMM estimator was used to estimate the regression parameters. The regression model diagnostic tests for autocorrelation and instruments over identification were carried out using the Arellano-Bond tests and Hansen statistic respectively.
The survey data was both qualitative and quantitative; the qualitative data was first reduced through coding and categorization into common themes. The reduced data was then displayed using frequency tables and charts and conclusions drawn.

Quantitative data was analyzed using descriptive statistics such as the frequency distribution, bar charts, pie charts, percentages and mean ranks. Inferential statistics were also used for hypotheses testing. Before hypothesis tests and regression were carried out, the data was first tested for normality using the Shapiro-Wilk's test of normality.

To address objectives two, three and four of the study, a count data regression model was used. For regression analysis purposes, the study used summed scores of individual item scores on a scale of 1-4 for political factors and summed scores of individual item scores on a scale of 1-3 for destination attractiveness factors to come up with a composite score for each variable.

Reliability and Validity Tests

Triangulation were the approach to take to ensure that both validity and reliability of the research findings to ascertain. Through triangulation different sources of information and concepts/theories were adopted.

The use of multiple methods or diverse sources of information allowed the study to address the research questions and cross-check information exhaustively. Moreover, efforts were made to ensure that both validity and reliability of the empirical data into consideration.

Cronbach's Alpha coefficient was used as a measure of internal consistency as it provides a unique quantitative estimate of the internal consistency of a scale (Mugenda, 2008). Cronbach's alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another. The study used the benchmark defined by Sekaran and Bougie (2011) which states that reliabilities less than 0.60 are considered to be poor, those in the 0.70 range, acceptable and those over 0.80 good (Sekaran & Bougie, 2011). Thus, reliability of 0.70 and above was acceptable for the study.

Research Findings and Discussions

Descriptive Statistics

The first section reports the descriptive statistics of the study variables, the second section reports and discusses regression results for economic variables while the last section reports and discusses regression results for non-economic variables.

A panel data regression model was used to examine the effects of economic factors on international tourism demand at the national level (specific objective one). A count data regression model using the survey data to determine the effects of socio-demographic characteristics, political factors and
destination characteristics on international tourism demand at the individual level (specific objective two, three and four).

Economic Factors

A total of 323 observations were used for analysis. The economic variables considered were income measured by real GDP per capita, relative tourism price, substitute price, travel cost and trade openness.

Table 2. Descriptive Statistics for Economic Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel Cost</td>
<td>323</td>
<td>17,234.84</td>
<td>40,056.59</td>
<td>7.67017</td>
<td>280,669.7</td>
</tr>
<tr>
<td>Total Tourist Departure</td>
<td>323</td>
<td>63,658.01</td>
<td>68,925.11</td>
<td>4.300</td>
<td>313,600</td>
</tr>
<tr>
<td>Holiday Tourists Departures</td>
<td>323</td>
<td>49,971.86</td>
<td>57,302.68</td>
<td>3.800</td>
<td>258,100</td>
</tr>
<tr>
<td>Real GDP per capita</td>
<td>323</td>
<td>18,482.54</td>
<td>12,597.93</td>
<td>189.791</td>
<td>40,837.27</td>
</tr>
<tr>
<td>Relative tourism price</td>
<td>323</td>
<td>5.280243</td>
<td>9.098876</td>
<td>0.004877</td>
<td>35.41114</td>
</tr>
<tr>
<td>Trade openness</td>
<td>323</td>
<td>0.0107475</td>
<td>0.0120338</td>
<td>0.0000397</td>
<td>0.0529732</td>
</tr>
</tbody>
</table>

Source: Study Data (2019)

Majority of the tourists who visited Ethiopia were holiday tourists (an average of 49,972 tourists per 3 month). The average real GDP per capita was 18,482.54 US dollars, with a minimum of 189.791 US dollars and a maximum of 40,837.27 US dollars.

This high variability (standard deviation of 12,597.93) was because the data was from countries which were at different levels of development (developed and developing countries).

There was also high variability for travel cost, which was caused by the different exchange rates between the tourist origin country’s local currency and the US dollar. The other variables did not show much variability.

Non-Economic Factors

The non-economic factors considered in the study were the tourist socio-demographic characteristics, political factors and destination characteristics. The survey data used to analyze the influence of socio-demographic factors, political factors and destination attractiveness factors on tourism demand was collected from tourists leaving the country during the data collection period by the use of questionnaires.

From the total questionnaires response rate the descriptive statistics for tourism demand measured by the number of nights spent by tourist and it shows that most of the tourists stayed in Ethiopia for only two weeks. There was great variability in the number of tourist nights spent as reflected in the minimum (1 night) and maximum (12 nights) values of the data.
Socio-Demographic Factors

In terms of sex, marital status, county of origin, age of respondents, annual household income, level of education and occupation status data were collected. Table 3, presents the descriptive statistics for the tourist’s socio-demographic characteristics.

Table 3. Tourists’ Socio-demographic Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>41</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Single</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Windowed</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td>9</td>
</tr>
<tr>
<td>County of Origin</td>
<td>Europe</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>America</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Asia</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Africa</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Australia</td>
<td>9</td>
</tr>
<tr>
<td>Family Size</td>
<td>No children</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>one child</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Two children</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Three children</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>More than three children</td>
<td>3</td>
</tr>
<tr>
<td>Age</td>
<td>18-24</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>25-34</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>35-46</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>47-66</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Over 66</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Study Data (2019)

Table 3 shows that, tourists from Europe constituted the biggest percentage (61 percent), followed by America at 13 percent, Asia with 6 percent and Africa with 11 percent and lastly Australia with 9 percent. These results implied that the majority of the tourists who came to Ethiopia were males, married, aged between 24 to 46 years and did not have children.

The tourist’s trip characteristics were given in terms of purpose of visit, number of travel companions and whether it was a repeat visit. The study results are presented in following Table 4.
**Table 4. Trip Characteristics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of visit</td>
<td>Holiday</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Business</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Visiting friends/ relatives</td>
<td>13</td>
</tr>
<tr>
<td>Travel companions</td>
<td>Alone</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Spouse</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Spouse &amp; children</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Colleagues</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Friends</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Children</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Relatives</td>
<td>5</td>
</tr>
<tr>
<td>Repeat visits</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>-</td>
</tr>
</tbody>
</table>

*Source: Study Data (2019)*

**Political Factors**

Five political factors were considered in the study namely political stability, fear of terrorist’s attacks, travel warnings origin of travel government, visa formalities, and good relations between tourist’s countries. Table 5 shows their descriptive statistics.

**Table 5. Political Factors**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Observations</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political stability</td>
<td>323</td>
<td>2.67</td>
<td>1.02</td>
</tr>
<tr>
<td>Fear of terrorists attacks</td>
<td>323</td>
<td>2.70</td>
<td>.885</td>
</tr>
<tr>
<td>Travel warnings origin of travel government</td>
<td>323</td>
<td>3.45</td>
<td>.918</td>
</tr>
<tr>
<td>Visa formalities</td>
<td>323</td>
<td>3.53</td>
<td>0.852</td>
</tr>
<tr>
<td>Good relations between tourist’s countries</td>
<td>323</td>
<td>3.09</td>
<td>1.068</td>
</tr>
</tbody>
</table>

*Source: Study Data (2019)*

Table 5 shows the tourists were highly influenced by visa formalities (mean =3.53) followed by government travel warning (mean = 3.45), good relations between their countries (mean = 3.09), fear of terrorists attacks (2.70) and lastly political stability (2.67) when making decision on whether to visit or not. This shows that political factors influence tourist’s decision to visit Ethiopia.
Table 6: Destination Characteristics

<table>
<thead>
<tr>
<th>Factors</th>
<th>Observations</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information availability</td>
<td>323</td>
<td>2.14</td>
<td>0.612</td>
</tr>
<tr>
<td>Advertisement and promotion</td>
<td>323</td>
<td>2.66</td>
<td>0.616</td>
</tr>
<tr>
<td>Availability of tour packages</td>
<td>323</td>
<td>2.52</td>
<td>0.697</td>
</tr>
<tr>
<td>Inexpensive tourism product</td>
<td>323</td>
<td>2.42</td>
<td>0.570</td>
</tr>
<tr>
<td>Availability of direct flights</td>
<td>323</td>
<td>2.43</td>
<td>0.686</td>
</tr>
<tr>
<td>Nearness of destination</td>
<td>323</td>
<td>2.56</td>
<td>0.718</td>
</tr>
<tr>
<td>Scenery/wildlife/diverse culture</td>
<td>323</td>
<td>1.62</td>
<td>0.832</td>
</tr>
<tr>
<td>Museums</td>
<td>323</td>
<td>1.67</td>
<td>0.837</td>
</tr>
<tr>
<td>Fear of insecurity/crime</td>
<td>323</td>
<td>2.01</td>
<td>0.944</td>
</tr>
<tr>
<td>Availability of shopping facilities</td>
<td>323</td>
<td>1.90</td>
<td>0.868</td>
</tr>
<tr>
<td>Good transport/communication</td>
<td>323</td>
<td>2.55</td>
<td>0.712</td>
</tr>
</tbody>
</table>

Source: Study Data (2019)

Table 6 shows that each of the considered destination factors considered influenced tourist decision to visit Ethiopia to some extent.

Availability of shopping facilities, advertisement and promotion of Ethiopian tourism, fear of attack by disease/crime, museums, nearness of destination, insecurity and crime level and availability of safe and good transport/communication facilities were the most important factors (had a mean of 2.50 and above) the tourists considered when making a decision to come to Ethiopia.

The other factors such as availability of direct flights, inexpensive tourism product, and information availability, diverse culture, scenery and wildlife were also found to influence the tourist decisions to visit to some extent.

Effect of Economic Factors on International Tourism Demand

The first objective of the study was to establish the effect of economic factors on international tourism demand. The study employed a dynamic panel regression model with the model parameters estimated by the SGMM estimator. The study variables were first tested for stationary before regression analysis was carried out and the Fisher-type panel regression unit root tests
(Choi, 2001) was used to investigate whether there were any variables in the model that were non-stationary.

The null hypothesis being tested by Fisher-type tests were that all panels contain a unit root against the alternative that at least one panel was stationary. The Augmented Dickey-Fuller (ADF) option and the inverse normal Z statistic were used to test for unit roots as recommended by Choi’s (2001).

Further, the drift option was considered as the mean for all the study variables for all countries was nonzero. A lag of one was used in the ADF regressions performed to compute the test statistic since the study used annual data.

The demean option was used to mitigate the impact of cross-sectional dependence as suggested by Levin, Lin, and Chu (2002). A summary of the Fisher panel unit root test results are presented in Table 7, the p-values are given in parentheses.

Table 7. Panel Unit Roots Tests Results

<table>
<thead>
<tr>
<th>Variable (in natural logarithms)</th>
<th>Drift option</th>
<th>Trend option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total tourist departures</td>
<td>-5.6872**</td>
<td>0.4672</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.6798)</td>
</tr>
<tr>
<td>Holiday departures</td>
<td>-5.7103**</td>
<td>0.4072</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.6581)</td>
</tr>
<tr>
<td>Income</td>
<td>-0.9867</td>
<td>3.9479</td>
</tr>
<tr>
<td></td>
<td>(0.1619)</td>
<td>(1.0000)</td>
</tr>
<tr>
<td>First difference of income</td>
<td>-6.6045**</td>
<td>-3.2165**</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0006)</td>
</tr>
<tr>
<td>Relative tourism price</td>
<td>-5.1427**</td>
<td>-1.0683</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.1427)</td>
</tr>
<tr>
<td>Tourism price</td>
<td>-5.1427**</td>
<td>1.0683</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.1427)</td>
</tr>
<tr>
<td>Travel cost</td>
<td>-4.0449**</td>
<td>-0.9923</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.1605)</td>
</tr>
<tr>
<td>Trade openness</td>
<td>-7.8890**</td>
<td>-4.3816**</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0000)</td>
</tr>
</tbody>
</table>

Note: ** denotes rejection of null hypothesis at 5% significance level

Source: Study Data (2019)

From Table 7, considering the drift option, it can be observed that at 5 percent level the null hypothesis that all panels contain unit roots was rejected for the variables total tourists departures; holiday tourists departures, relative tourism price, tourism price, travel cost and trade openness, all measured in natural logarithm form.

This means that these variables were stationary at levels. The implication is that these variables were integrated of order zero. The natural logarithm of the income variable (real GDP per capita) at level was not stationary but
became stationary after the first differencing implying it was integrated of order one.

These results reflects those of a study carried out by Naude and Saayman (2005) but contradicts results of a study by Chaiboonsri et al. (2010) who found the study variables to be co-integrated of order one.

A panel dynamic regression model was used to determine the effect of economic factors on international tourism demand (objective one). Two regression analyses were carried out separately for the two dependent variables considered (total tourist departures and holiday tourist departures). The total tourist’s departures consisted of all those people who visit for holiday, business or are on transit.

The analysis for holiday tourist was necessary since most of the international tourists visiting for a holiday experience. The study used the SGMM estimator to estimate the regression coefficients. The validity of the results obtained in SGMM depends on the model statistical diagnostics; hence the model diagnostics first were first carried out.

Compared to OLS model, SGMM does not assume normality and it allows for heteroskedasticity in the data through use of robust standard errors. The SGMM estimator assumes that the twice-lagged residuals are not auto correlated and that the instruments used are exogenous. Specification testing in the SGMM model thus involved testing for instruments exogenity and for residual serial correlation.

### Hypotheses Tests on Tourists Socio-Demographic Characteristics

A normal distribution is assumed in many statistical procedures such as correlation, least squares regression and hypothesis testing (Sekaran & Bougie, 2011). When the response variable is the counted number of occurrences of an event, this may not be true; hence there was need to test for normality first before any further analysis was carried out on the survey data.

The Shapiro-Wilk’s normality test was used to test whether the response variable was normally distributed. The results of the test are presented in Table 8.

<table>
<thead>
<tr>
<th>Table 8. Test of Normality for Survey Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable</td>
</tr>
<tr>
<td>Tourist-nights spent</td>
</tr>
</tbody>
</table>

The results from Table 8 show that the p-value of 0.000 is less than the level of significance of 0.5; hence the null hypothesis that the data is normally distributed was rejected. This implies that statistical procedures which assume normality cannot be used as this would bias the results.

The test results agree with those for the study by Menezes et al. (2008) and Chaiboonsri and Chaitip (2012) who found that the response variable was not normally distributed. The number of tourist nights spent can differ by the
individual socio-demographic characteristics such as sex, marital status, annual household income, level of education and age. It was therefore in order, to first establish whether tourists night differ by the tourist socio-demographic characteristics since all the various categories of the socio-demographic variables could not be considered in the regression equation.

Since the data was not normally distributed the analysis of variance (ANOVA) test could not be used. Instead alternative nonparametric tests, that is, the Kruskal-Wallis and the Mann-Whitney U tests were used to examine whether tourist nights differ significantly by the tourist socio-demographic characteristics.

The null hypothesis being tested by both test statistics was that the mean ranks of number of nights spent by respondents in each group of the variable under consideration were equal against the alternative hypothesis that not all the mean ranks were equal. The null hypothesis was rejected if the p-value was less than 0.05.

In order to evaluate whether the number of nights spent differ by sex on the average a Mann-Whitney U test was conducted and the results are presented in Table 9.

### Table 9: Test of Normality for Survey Data

<table>
<thead>
<tr>
<th>Factor</th>
<th>Categories</th>
<th>Mean Rank</th>
<th>Test Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>147.34</td>
<td>U = 10384.5</td>
<td>0.233</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>159.50</td>
<td>Z=-1.194</td>
<td></td>
</tr>
</tbody>
</table>

Source: Study Data (2019)

Since the p-value of 0.233 is greater than 0.05 the null hypothesis that the average number of nights spent was the same for both groups was not rejected. This means that there was no significant difference between the number of nights spent by male and female respondents. Hence, the gender of the tourist does not influence the number of nights they spend in Ethiopia. To test whether the number of nights spent by a tourist in Ethiopia differed by their marital status, the Kruskal-Wallis test was used and the results are presented in Table 10.

### Table 10. Test Results on Tourist Nights by Marital Status

<table>
<thead>
<tr>
<th>Factor</th>
<th>Categories</th>
<th>Mean Rank</th>
<th>Test Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status</td>
<td>Single</td>
<td>143.56</td>
<td>X² 5,764 Degrees of freedom =3</td>
<td>0.124</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>154.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>190.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td>77.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Study Data (2019)
The results in Table 10 indicate that the p-value of 0.124 was greater than the level of significance of 0.05. Hence, the null hypothesis that the number of tourist nights spent was the same for all groups was not rejected. This implied that there was no significant difference in the number of nights spent by tourists in whether single, married, divorced or widowed.

*Regression Results on Non-Economic Factors*

Count data regression analysis was carried out to establish the effect of tourist socio-demographic characteristics, political factors and destination characteristics on international tourism demand. Variance Inflation Factor (VIF) measures how much the variance of the regression coefficients is inflated by multicollinearity problems. If VIF equals 0, there is no correlation between the independent measures. A VIF measure of 1 is an indication of association between predictor variables, but generally not enough to cause problems. Tolerance is the amount of variance in an independent variable that is not explained by the other independent variables. A tolerance value of 0.10 corresponding to a VIF of 10 is acceptable (Sekaran and Bougie, 2011). The collinearity statistics are given in Table 11.

*Table 11. Results for Collinearity Statistics*

<table>
<thead>
<tr>
<th>Explanatory Variables</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure</td>
<td>0.680</td>
<td>1.472</td>
</tr>
<tr>
<td>Income</td>
<td>0.743</td>
<td>1.346</td>
</tr>
<tr>
<td>Age in years</td>
<td>0.613</td>
<td>1.632</td>
</tr>
<tr>
<td>Education dummy</td>
<td>0.890</td>
<td>1.123</td>
</tr>
<tr>
<td>Occupation dummy</td>
<td>0.591</td>
<td>1.691</td>
</tr>
<tr>
<td>Female dummy</td>
<td>0.893</td>
<td>1.120</td>
</tr>
<tr>
<td>Married dummy</td>
<td>0.506</td>
<td>1.975</td>
</tr>
<tr>
<td>Children dummy</td>
<td>0.540</td>
<td>1.852</td>
</tr>
<tr>
<td>Trip companion dummy</td>
<td>0.771</td>
<td>1.296</td>
</tr>
<tr>
<td>Repeat visit dummy</td>
<td>0.605</td>
<td>1.653</td>
</tr>
<tr>
<td>Political factor index</td>
<td>0.723</td>
<td>1.384</td>
</tr>
<tr>
<td>Destination characteristics index</td>
<td>0.565</td>
<td>1.768</td>
</tr>
</tbody>
</table>

Source. Study Data (2019)

Table 11 shows that the explanatory variables are not highly correlated since none of them has a VIF of more than 10 and tolerance value of less than 0.2 (Sekaran & Bougie, 2011). This implies that there is no sizeable multicollinearity that can affect regression. Poisson and negative binomial regression models are designed to analyze count data. Count models are estimated using maximum likelihood method. Choosing between Poisson and negative binomial models depends on the nature of the distribution of the dependent variable. Therefore, one should measure the
distribution of the study data before choosing between Poisson and negative binomial regression. The researcher used the Pearson Chi-Square goodness-of-fit test to test the hypothesis that the dependent variable followed a Poisson distribution. The regression model diagnostics results are presented in Table 12.

Table 12. Regression Model Diagnostic Results

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Degrees of Freedom</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-square ( (X^2) = 621.3348 )</td>
<td>172</td>
<td>0.0000</td>
</tr>
<tr>
<td>Likelihood-ratio test ( (\text{of alpha} = 0) = 202.37 )</td>
<td>1</td>
<td>0.0000</td>
</tr>
<tr>
<td>Alpha</td>
<td>0.1735217</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>13.51645</td>
<td></td>
</tr>
<tr>
<td>Variance</td>
<td>101.25391</td>
<td></td>
</tr>
</tbody>
</table>

Source: Study Data (2019)

The Pearson test statistic is significant at 5 percent level, thus the null hypothesis that the data fits the Poisson distribution is rejected. In addition, Poisson regression model assumes that the conditional mean and variance should be equal, which is not the case (mean of 13.5 and variance of 101.25). The model diagnostic results are in line with those diagnoses by Chaiboonsri and Chaitip (2012). The negative binomial regression model was used to determine the effect of noneconomic factors on international tourism demand at the individual level. Table 13 presents the results of the negative binomial regression model.

Table 13. Negative Binomial Regression Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>IRR</th>
<th>Standard Error</th>
<th>Z-Statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure</td>
<td>-0.0001094*</td>
<td>1.000109</td>
<td>0.0000293</td>
<td>3.74</td>
<td>0.000</td>
</tr>
<tr>
<td>Income</td>
<td>-0.0000115*</td>
<td>0.999985</td>
<td>0.000270184</td>
<td>-10.52</td>
<td>0.000</td>
</tr>
<tr>
<td>Age</td>
<td>0.0071775**</td>
<td>1.007203</td>
<td>0.0031095</td>
<td>2.31</td>
<td>0.021</td>
</tr>
<tr>
<td>Education</td>
<td>-0.2166887</td>
<td>0.8051806</td>
<td>0.249181</td>
<td>-0.870</td>
<td>0.387</td>
</tr>
<tr>
<td>Occupation</td>
<td>0.4847904*</td>
<td>1.623835</td>
<td>0.1095877</td>
<td>4.42</td>
<td>0.000</td>
</tr>
<tr>
<td>Female</td>
<td>0.0965974</td>
<td>1.101417</td>
<td>0.0808405</td>
<td>1.19</td>
<td>0.232</td>
</tr>
<tr>
<td>Married</td>
<td>-0.146501</td>
<td>0.8637248</td>
<td>0.098315</td>
<td>-1.49</td>
<td>0.136</td>
</tr>
<tr>
<td>Children</td>
<td>0.1335843</td>
<td>1.142918</td>
<td>0.91677</td>
<td>1.46</td>
<td>0.145</td>
</tr>
<tr>
<td>Trip attribute</td>
<td>-0.2196762***</td>
<td>0.8027787</td>
<td>0.1199412</td>
<td>-1.83</td>
<td>0.067</td>
</tr>
<tr>
<td>Repeat visit</td>
<td>-0.2073308**</td>
<td>0.8127507</td>
<td>0.093681</td>
<td>-2.21</td>
<td>0.027</td>
</tr>
<tr>
<td>Political factors</td>
<td>-0.1459322***</td>
<td>0.86421163</td>
<td>0.0660987</td>
<td>-2.21</td>
<td>0.027</td>
</tr>
<tr>
<td>Destination attractiveness</td>
<td>0.4389932*</td>
<td>1.551145</td>
<td>0.1378551</td>
<td>3.18</td>
<td>0.001</td>
</tr>
<tr>
<td>Constant</td>
<td>1.9282*</td>
<td>1.0000</td>
<td>0.512828</td>
<td>3.76</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Waldi-chi square = 180.14
Degrees of freedom = 12

P-value = 0.0000
Number of observations = 184

Note: * significant at 1% level; ** significant at 5% level and *** significant at 10% level.

Source: Study Data (2019)
The table shows that, the number of observations used in the count data regression analysis were 184. Wald chi-square test statistic had a value of 180.14. The null hypothesis that all the estimated regression coefficients were equal to zero was rejected at 5 percent level of significance since the p-value of 0.000 was less than 0.05. This means that some of the regression coefficients were different from zero. Positive coefficients indicate higher rate whereas negative coefficients indicate lower rate. Rather than reporting the negative binomial regression results using regression coefficients, the effect of the independent variable on the dependent variable was reported in terms of the IRR.

**Effect of Tourists Socio-Demographic Characteristics on International Tourism Demand**

The tourist socio-demographic characteristics included in the regression model were expenditure, annual household income in US dollars, age in years, education dummy with a value of 0 for tourists without college education and a value of 1 for tourist with college education and above, occupation dummy with a value of 0 for unemployed tourists and a value of 1 for those employed. Female dummy with a value of 0 for a male and a value of 1 for a female tourists, married dummy taking 0 value if the tourist was not married and value 1 if the tourist was married, children dummy taking value of 0 for tourists without children and a value of 1 for those with children. Trip companion dummy with a value of 0 for those travelling alone and value of 1 for those travelling together with others and repeat visit dummy with a value of 0 for those visiting the first time and a value of 1 for those visiting again.

The coefficient of the expenditure variable had the expected positive sign and was significant at 5 percent level (p-value of 0.000 was less than 0.05). The IRR value of 1.000109 for the expenditure variable suggested that the number of nights spent increased by approximately 0.011 percent with every one US dollar increase in expenditure. The annual household income variable had a negative coefficient which is contrary to what was expected. This coefficient was statistically significant at 5 percent level since the p-value of 0.000 was below 0.05. The IRR value of 0.99999 implied that if the annual household income increased by one US dollar, the number of nights spent would decrease by 0.001 percent.

Further investigation into the data to find out the cause of the unexpected negative coefficient revealed that the respondents who had higher annual household income spent fewer nights compared to those with lower annual household income. The implication of this is that tourist with high annual income may not be willing to stay for a longer period in Ethiopia but will probably prefer to visit other destinations as well.

Age coefficient had a positive sign and was significant at 5 percent level (p-value of 0.021 which is less than 0.05). The implication was that when the
tourist’s age increased by one year, the number of nights spent increased by 0.72 percent.

This means that older tourists spent more nights in Ethiopia compared to the younger ones. Occupation dummy coefficient had a positive sign and was significant at 5 percent level since the p-value of 0.000 was less than 0.05. This meant that the respondents who were employed spent 1.62 times the incident rate for those not employed. This implies that the respondents who were employed spent more nights in Ethiopia compared to those who were not working. The coefficient of the trip companion dummy was negative and not significant at 5 percent but was significant at 10 percent level (p-value of 0.067 was less than 0.1 but greater than 0.5) with an IRR value of 0.803.

This implies that those respondents who travelled accompanied by others spent 0.803 times the number of nights less than those who travelled alone. This means that those who travelled alone spent more nights in Ethiopia compared to those travelling with others or those travelling in groups.

The coefficient of the repeat visit dummy had a negative sign and was significant at 5 percent level of significance (p-value of 0.27 was less than 0.5). The IRR value for this variable was 0.813 implying that those who had visited Ethiopia before spent 0.813 times the number of nights less compared to those who had not visited before. This means that the tourists who were on their first visit to Ethiopia spent more nights than those who were on a repeat visit.

The coefficient for the level of education dummy was negative but was not significant at 5 percent level. The insignificance could have arisen due to the reduction of categories in the regression equation.

The reduction of categories was necessary in order to reduce the number of variables in the regression equation to avoid losing many degrees of freedom because of too many dummy variables being included. The coefficient of the female dummy was negative but not significant at 5 percent level implying that gender is not a major determinant of international tourism demand. The coefficient for the married dummy variable was negative but was not significant at 5 percent level. This means that marital status was not a significant factor influencing tourism demand. The coefficient for the children dummy was also not significant at 5 percent level of significance and had a positive sign. The coefficients for education, gender and marital status dummies had the same signs and still in this study they were not significant.

Effect of Political Factors on International Tourism Demand

For regression analysis purposes, the political factors composite index was constructed by calculating the summed scores per respondent and then dividing it by the number of items. The political composite index had the expected negative coefficient and was significant at 5 percent level since the p-value of 0.027 was less than 0.05, with IRR value was 0.864.

This means that if the political factors index decreased by one unit, the number of nights spent in Ethiopia will decrease by 13.6 percent, that is, if the
political situation in the country deteriorates tourism demand will decrease as not many people will be willing to come to Ethiopia.

This is in line with the political instability to be an important determinant of international tourism demand affecting demand negatively.

Effect of Destination Characteristics on International Tourism Demand

For regression analysis purposes, the destination characteristics composite index was constructed by calculating the summed scores per respondent and then dividing it by the number of items. The coefficient for destination characteristics index was significant at 5 percent level (p-value of 0.01 was lower than 0.05).

The coefficient was positive as expected and the IRR value was 1.55 implying that if the destination characteristics index increased by one unit, the number of nights spent would increase by 55 percent.

Conclusion and Recommendations

Conclusion

The aim of the study was to estimate the international tourism demand in Ethiopia with respect to 11 main tourism suppliers. The study applied the single equation methodology in estimating the international tourism demand model for tourists from different origins. It can be concluded from the study that international tourism demand is price inelastic in the short run but price elastic in the long run.

Elasticity of cost of travel was found to be both inelastic in the short run and long run. If the price of tourism and the cost of travelling increase, the international tourism demand is expected to decrease. The lagged dependent variable (word of mouth effect) was significant implying that international tourism demand is influenced by tourists report to others about their holiday experience. Tourists are sensitive to political instability; hence the last two years ethnic tension affected international tourism demand in Ethiopia negatively. Bilateral trade was an important determinant of international tourism demand, hence good relations between Ethiopia and tourist generating countries is expected to enhance tourism demand.

The tourist’s socio-demographic characteristics (that is, expenditure, annual household income, age, occupation, travelling companions and repeat visits) were found to have an effect on international tourism demand.

The study finding suggested that those with higher annual household income spent fewer nights than those with lower annual household income. It implying that those with high income prefer short visits and then probably move on to other destinations. The findings further showed that the tourists who were employed (either part time or full time) spent more nights compared
to those who were not working. The older tourists were found to spend more nights compared to the younger ones.

Those visiting the country for the first visit time spent more nights than those who were on a repeat visit. The tourists travelling alone were found to spend more nights than those travelling with others or those travelling in groups. Political factors were found to affect demand negatively while destination factors were found to influence demand positively.

**Recommendations**

Based on the study findings, the following are some of policy implications and strategies that can be proposed for the development of tourism industry in terms of sustaining the growth of tourist’s arrivals and attracting more tourists into the country.

Since the study found that the word of mouth effect was significant in explaining international tourism demand, the tourism industry should embark on offering high quality services to enhance the country’s image in order to attract new and repeat tourists.

- The government together with the ministry of culture and tourism should engage in sustainable tourism development to avoid tourism products degradation.
- Tourism price was also an important determinant of international tourism demand, thus the government and tourism key actors/players in the tourism sector (government, the tour operators, travel agents and car rental companies, hoteliers among others) should aim at making the tourism price competitive compared to other countries in Africa to avoid most of the competition from neighboring countries.
- The Government in combination with Ethiopian Airline should invest in reasonable cost of air transportation operating within and outside the country.
- The government should come with favorable policies that will encourage investors to invest in the tourism sector. Travel agents should ensure the transportation costs within the country are competitive and should not exploit visitors.
- International tourism demand was found also to be affected by tourist socio-demographic characteristics. Therefore, the government should facilitate in the design of new products catering for different age groups, professionals and people of different socio-economic status.
- In addition, the existing tourism products, facilities and services should be improved in order to encourage repeat visits as well as attract new tourists.
- The government should continue to engage in bilateral trade with more countries as it is currently doing.
- Furthermore, since political factors and destination characteristics were also found to be significant determinants of demand, the government should enhance political stability in the country.
All the tourism sectors stakeholders and other related industries as well as every citizen, should work towards creating a positive image through favorable friendly and peaceful environment.

Future research could build on the results of this study to enrich the existing knowledge of determinants on international tourism demand.

Reference


