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International Tourist Arrivals by Region of Origin and Tourism Receipts: a Panel Data Analysis

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ABSTRACT

Many factors affect the number of foreign tourists and the international tourism receipts. Increased foreign exchange earnings from hotels, restaurants and tourism-related groups such as tourist guiding, increased employment, increased access to foreign direct investment, revenues from under-exploited natural resources and possibilities for differential taxation of tourists, increased GDP are examples of tourism revenues. The positive impact of international tourism receipts on economic growth is an important issue in all countries, especially developing countries. In this paper, we outline the number of visitors received from the highest spender countries, along with other variables that discussed by the previous studies. We applied panel data regression analysis method for panel dataset belongs to top 10 countries in terms of international tourism receipts. Based on the findings of the Driscoll-Kraay estimator model, the number of international arrivals from top spender countries has positive affect on tourism receipts and it is five times higher than the effect of the total number of international arrivals.

INTRODUCTION

Tourism activities have many social, cultural and economic impacts on the economy of destination. Tourism is regarded as one of the most important sectors providing an opportunity for economic growth (Lanquar, 2013: 28). Tourism industry has also become a major economic sector that generates foreign exchange earnings in most countries. Thus, in terms of policy-makers concerned, the impact of international tourism on economic growth is extremely notable (Lau et al., 2008: 9). According to the World Travel and Tourism Council, the contribution of the travel and tourism sector to Gross Domestic Product and employment in many developing countries exceeds the global average (WTTC) Travel & Tourism Economic Impact, 2015).

Tourism can generate jobs directly through hotels, restaurants, nightclubs, taxis and souvenir sales, and indirectly through the supply of goods and services needed by tourism related businesses. Tourism supports more than seven percent of the world's workers. Additionally, tourism income contributes to government revenues in two ways. Direct contributions are generated by taxes on incomes from tourism employment and tourism businesses and by direct levies on tourists such as departure taxes. Indirect contributions come from taxes and duties levied on goods and services supplied to tourists (Markandya et al., 2005: 4). Tourists contribute to sales, profits, jobs, tax revenues and income in an area. The most direct effects occur within the primary tourism sectors: lodging, restaurants, transportation, amusements, and retail trade. Through secondary effects, tourism affects most sectors of the economy. An economic impact analysis of tourism activity normally focuses on changes in sales, income, and employment in a region resulting from tourism activity (Stynes, 1999: 5).

1. International Tourism Receipts

According to United Nations World Tourism Organization (UNWTO), international tourism receipts defined as the money spent by the visitors of a country for the services they receive during their stay, using the currency they brought with them. This amount includes spending of daily visitors that stay less than 24 hours, including passengers of cruise liners. The money that all these visitors spend is included in international tourism receipts and contributes to a country's economy.

Increased foreign exchange earnings from hotels, restaurants and tourism-related groups such as tourist guiding, increased employment particularly for women, increased access to foreign direct investment, revenues from under-exploited natural resources and possibilities for differential taxation of tourists, increased Gross Domestic Product, both direct and as a result of the multiplier effects of tourism revenues. Typical figures are in the range of 2 to 3, that is each dollar spent by a tourist creates between 2 and 3 dollars of output in an economy with surplus resources (Markandya et al., 2005: 7).

Lanfant (1995) argues that international tourism can no longer be considered an extension of domestic tourism, or even reduce its economic importance by analysing it only in terms of its contributions to trade. The positive impact of tourism on economic growth is an important issue in all countries, especially developing countries. It is not only the developing nations that see international tourism as a way to solve their economic problems, the developed nations also view tourism as beneficial to furthering their economic growth. Tourism can create new jobs as well; the multiplier effect ensuring from this advantage can be considered a factor of economic growth. Algieri (2006: 1) studied the linkages between economic growth and tourism-based economies. His results show that tourism can be a significant engine of economic growth, when the elasticity substitution between manufacturing goods and tourist services is less than one. Finally, two stylized facts were developed based on his studies, first countries specialized in tourism register good economic performances; second these same countries have small dimensions as defined by international trade theory. Brau (2003: 2) found that small tourism intensive countries perform much better than other small countries without much tourism related activities.

Table 1: International Tourist Arrivals

		2013		2014		2015	
Rank of 2015	Country	Number of Tourist (million)	% Change	Number of Tourist (million)	% Change	Number of Tourist (million)	% Change
1	France	83.6	2	83.7	0.1	84.5	0.9
2	United States	70	5	75	6.8	77.5	3.3
3	Spain	60.7	5.6	64.9	7.1	68.2	5
4	China	55.7	-3.5	55.6	-0.1	56.9	2.3
5	Italy	47.7	2.9	48.6	1.8	50.7	4.4
6	Turkey	37.8	5.9	39.8	5.3	39.5	-0.8
7	Germany	31.5	3.7	33	4.6	35	6
8	United Kingdom	31.1	6.1	32.6	5	34.4	5.6
9	Mexico	24.2	10.2	29.1	20.5	32.1	9.4
10	Russia	28.4	3.2	29.8	5.3	31.3	5

Source: World Tourism Organization (UNWTO)

As presented in the table above, international tourist arrivals are on rise every year, with an exception to China and Turkey. In 2013, China received 3.5% less tourists compared with the previous, with an only exception among other 10 countries. The amount of international arrivals to the country was almost same, despite a small decrease in 2014 and finally with an increase in 2015. The same year Turkey received her only negative percentage of visitors when compared with previous two years. Overall, between 2013 and 2015 10 countries listed above received more international visitors than the previous years.

A number of studies investigated the number of tourists received and its positive impact on tourism related income for a country (Saray and Karagoz, 2010; Abounoori et al., 2012; Culiuc, 2014). Considering this, it is fair to claim that receiving great number of visitors from high spending countries results an increase in the total tourism income of a country. It is even more important for countries like Turkey that income from tourism consist a great proportion of the country's GNP that to attract more visitors from these high spending countries. Bearing this point in mind, this study sought to explore first 10 OECD countries in terms of tourism income. The OECD is a multi-disciplinary inter-governmental organisation of 34 member countries, which engages in its work an increasing number of non-members from all regions of the world. Organisation's core mission today is to help governments work together towards a stronger, cleaner, fairer global economy. Through its network of 250 specialised committees and working groups, the OECD provides a setting where governments compare policy experiences, seek answers to common problems, identify good practice, and co-ordinate domestic and international policies. The OECD member countries are (in alphabetical order): Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States. The European Commission takes part in the work of the OECD (Dupeyras and MacCallum 2013). Top 10 OECD countries in terms of tourism income are (in the given order): United States, Spain, France, Italy, United Kingdom, Germany, Australia, Turkey, Austria and Japan (UNWTO).

Table 2 presents that international tourism receipts grew steadily between 2013-2015 in general. There are exceptions, however, for France, Thailand, Hong Kong, Macao and Australia. Except a very small decrease for Australia in 2013, rest of the countries experienced this drop in 2014.

Table 2: OECD Countries in terms of International Tourism Receipts (2015)

		2013		2014		2015	
Rank for 2015	Country	International Tourism Receipts (billion)	% Change	International Tourism Receipts (billion)	% Change	International Tourism Receipts (billion)	% Change
1	United States	172.9	7	191.3	7.8	204.5	15.4
2	China	51.7	3.3	56.9	10.2	114.1	100
3	Spain	62.6	7.6	65.2	4.2	56.5	-13.3
4	France	56.7	5.6	55.4	-2.3	45.9	-17.2
5	United Kingdom	41	6.1	45.3	10.3	45.5	0.44
6	Thailand	41.8	23.4	38.4	-8	44.6	16.2
7	Italy	43.9	6.6	45.5	3.7	39.4	-13.4
8	Germany	41.3	8.2	43.3	5	36.9	-14.8
9	Hong Kong	38.9	17.7	38.4	-1.4	36.2	-5.7
10	Macao	51.8	18.1	50.8	-1.9	31.3	-38.4
11	Australia	31.2	-0.5	32	1.8	29.4	-8.1
12	Turkey	27.9	4.1	29.5	3.7	26.6	-13.6

Source: World Tourism Organization (UNWTO)

Graph 1: The Ratio of International Tourism Receipts to Tourist Arrivals ($)

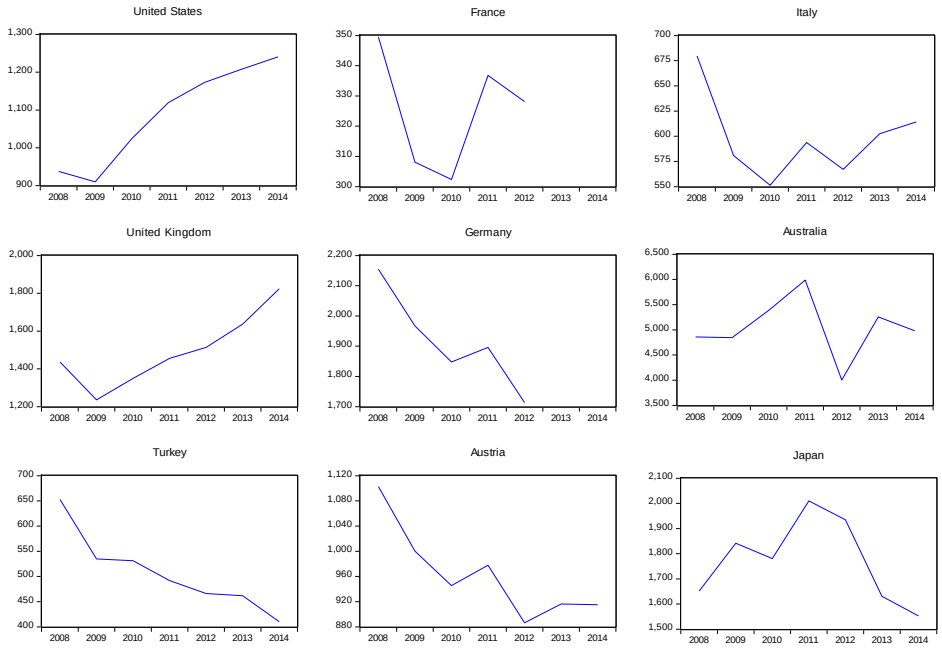

Figure 1 presents the amount of income from inbound tourists divided by the amount of visitors received. Following the economic downturn in US and its following domino effect in rest of the world, each country displays a different story. UK and US are the ones recovered quickly and increased their tourism related income. France also following a sharp dive managed to recover. There are countries like Germany, Austria and Australia showing different type of figure than others with ups and downs in their tourism related income. Turkey, however, is the worst country among all with a steady decrease in income, followed by Japan. This means, despite the number of visitors increased annually, the earnings per visitor dropped due the amount of overall money spent by these visitors.

When exploring all these countries mentioned for the study, a number of variables used in order to allow comparison. *First variable* is the trade openness. Trade is a key determinant in improving the growth of economies. Trade openness means the reduction or complete removal of trade barriers (Şahin, 2016: 90). Various studies indicated that trade openness is crucial for economic growth of many countries (For example, Krueger, 1980; Marin, 1992; Bahmani-Oskooee and Alse, 1993; Jin, 1995; Xu, 1996; Shan et al., 2001; Kulendran and Wilson, 2000; Shan and Willson, 2001). *Second variable* is the population of a country. When a country's population is high - backed by the economical welfare- it is expected that nationals of that country travel more. *Third variable* is the exchange rate in US Dollars (USD). The profound assumption is the weaker a country currency it gets ironically it draws more visitors to the country due to the increase in the buying power of visitors. *Fourth variable* is the number of travel agencies and other reservation services in tourism industry. The more travel agencies to choose for a country to travel, the more tourists it attracts due to variety and different services these agencies offer. *Fifth variable* is the number and different types of accommodation in offer. Similar with the previous one, if there are more alternatives to choose, that means there will be more visitors that country attracts. *Sixth variable* the amount of food and beverage (F&B) establishments a country offers. Again, more and different variety to choose in comparison with fewer alternatives means the possibility of additional people opting for the destination. *Seventh variable* is the international arrivals from the list of countries that their nationals spend most when travel abroad. From the highest to the lowest, these countries are: China, United States, Germany, United Kingdom, Russian Federation, France, Canada, Italy, Australia and Brazil (UNWTO, 2015). Our research will outline the number of visitors received from these highest spenders to the top 10 OECD countries in question. The question needs answering for this research is, since visitors from these countries have a reputation to spend more, whether this is the case when visiting Turkey or not. *Eight and final variable is* the total number of international arrivals. Table 3 summarises these variables.

2.Data, Methodology and Findings

Many factors affect the number of foreign tourists and the tourism receipts. This paper summarizes previous literature, and takes trade openness, population of the destination country, exchange rates (USD), number of travel agencies and other reservation services in tourism industry, accommodation services for visitors, food and beverage serving enterprises in the tourism industry, international arrivals from top spender countries, and total international arrivals as the explaining variables of international receipts. Aiming at investigating indicators of tourism related income, this study used dataset belong to top 10 countries in terms of tourism income in 2015, a list compiled by UNWTO. Figure 1 was prepared by using panel data analysis belongs to these countries for the period of 2008-2014. Data used for the variables of this article were taken from OECD (Organisation for Economic Co-operation and Development) website. Variables with their abbreviations and brief explanation are presented in Table 3.

Table 3: Variables and their Abbreviations

Abbreviation	Variable
rcpt	International Tourism receipt
tradeop	Trade openness
popgrw	Population of the destination country
exchrate	exchange rates (USD)
agency	Number of travel agencies and other reservation services in tourism industry
accom	Accommodation services for visitors
fbindentrp	Food and beverage serving enterprises in tourism industry
tspend	The number of international arrivals from top spender countries
arrival	The total number of international arrivals

2.1.Panel Unit Root Tests

Determining the unit root features of the variables is a crucial step in an empirical analysis since using the conventional OLS estimator with non-stationary variables results in spurious regressions (Granger and Newbold, 1973: 35). Many recent studies rely on panel-unit root tests in order to increase the statistical power of their empirical findings. The stability of the variables used in this study were tested by Levin, Lin and Chu (2002); Im, Pesaran and Shin (2003); Maddala and Wu (1999) and Choi's (2001) first generation unit root tests. The panel-unit root test of LLC (2002) entails estimating the following panel model:

$$\Delta y_{it} = \mu_i + \rho\gamma_{it-1} + \sum_{j=1}^{k} \alpha_j \Delta y_{it-j} + \delta_i t + \theta_t + \varepsilon_{it} \qquad (1)$$

where Δ is the first difference operator, *k* is the lag length, μ_i and θ_t are unit-specific fixed and time effects, respectively. The null hypothesis of $\rho = 0$ for all *i* is tested against the alternative hypothesis of $\rho < 0$ for all *i*. The rejection of the null hypothesis indicates a panel stationary process. The strong assumption of homogenous ρ in the LLC test is difficult to satisfy, because cross-sectional units may have a different speed of adjustment process towards the long-run equilibrium. By relaxing this assumption, IPS (2003) proposed a panel unit root test which allows ρ to vary across all *i*. Therefore, in the IPS (2003) testing procedure, Eq. (2) is re-written as follows:

$$\Delta y_{it} = \mu_i + \rho_i\gamma_{it-1} + \sum_{j=1}^{k} \alpha_j \Delta y_{it-j} + \delta_i t + \theta_t + \varepsilon_{it} \qquad (2)$$

Testing for unit root in the panel is based on the Augmented Dickey Fuller (ADF) statistics averaged across groups. The null hypothesis of $\rho = 0$ for all *i* is tested against the alternative hypothesis of $\rho < 0$ for at least one *i*. The null hypothesis accordingly implies that all series have a unit root while the alternative hypothesis suggests that some of the series in the panel data are assumed to be stationary.

2.2. Estimation Methodology

The panel data methods have greater statistical power than tests based on time series analysis since they combine information from the cross-sectional dimension in addition to the time period (Nazlioglu and Soytas, 2012: 1099). Panel data have observations on the same units in several different time periods. Panel data may have individual (group) effect, time effect, or both, which are analysed by fixed effect and/or random effect models. If individual effect u_i (cross-sectional or time specific effect) does not exist ($u_i = 0$), ordinary least squares (OLS) produces efficient and consistent parameter estimates.

$$y_{it} = \alpha + X_{it}^{'}\beta + \varepsilon_{it} \ (u_i = 0) \qquad (3)$$

i = 1, . . . , N (size of the cross-section), and *t* = 1, . . . , T (number of time periods). Panel data models examine group (individual-specific) effects, time effects, or both in order to deal with heterogeneity or individual effect that may or may not be observed. These effects are either fixed or random effect. A fixed effect model examines if intercepts vary across group or time period, whereas a random effect model explores differences in error variance components across individual or time period (Park, 2011: 7). The core difference between fixed and random effect models lies in the role of dummy variables A parameter estimate of a dummy variable is a part of the intercept in a fixed effect model and an error component in a random effect model. Slopes remain the same across group or time period in either fixed or random effect model. The functional forms of one-way fixed and random effect models are,

Fixed effect model: $y_{it} = (\alpha + u_i) + X_{it}^{'}\beta + v_{it}$

Random effect model: $y_{it} = \alpha + X_{it}^{'}\beta + (u_{it} + v_{it})$

where u_i is a fixed or random effect specific to individual (group) or time period that is not included in the regression, and errors are independent identically distributed, $v_{it} \sim IID(0, \sigma_v^2)$.

In a panel regression model the null hypothesis is that all dummy parameters are zero, $H_0 : \mu_i = \lambda_i = 0$. The alternative hypothesis is that at least one dummy parameter is not zero. If the null hypothesis is rejected (at least one group/time specific intercept u_i is not zero), you may conclude that there is a significant fixed effect therefore, the fixed effect model is better than the pooled OLS.

2.3.Unit Root Test Results

In order to examine the relationships among the variables in concern, the first generation panel unit root tests are applied to the data set. Root unit specifications of the variables that were used in the model were tested by using Levin, Lin and Chu (2002); Im, Pesaran and Shin (2003); Maddala and Wu (1999) and Choi's (2001) first generation unit root tests. Table 3 presents the individual root tests results of series and primary difference levels for the "individual intercept model" and "individual intercept and trend model".

Table 4: Unit Root Tests Results

Variables	Test Method	I(0) with constant	I(0) with constant and trend	I(1) with constant	I(1) with constant and trend	Results
TRADEOP	LLC	-3.26***	-18.79***	-18.02***	-18.79***	
	IPS	-0.02	-1.26*	-5.29***	-1.26*	I(0)
	ADF-Fisher Chi - Square	17.32	39.13***	66.15***	39.13***	
	PP-Fisher Chi - Square	17.29	58.95***	72.03***	58.95***	
RCPT	LLC	-5.645***	-12.39***	-11.75***	-16.67***	I(0)
	IPS	-1.177	-1.086	-4.84***	-1.49*	
	ADF-Fisher Chi-Square	29.30**	34.34**	49.75***	31.36***	
	PP-Fisher Chi-Square	29.54**	62.09*	68.99***	54.93***	
POPULATION	LLC	-4.62***	-5.67***	-5.69***	-6.41***	
	IPS	0.08	1.32	-0.92	-0.42	I(0)
	ADF-Fisher Chi-Square	22.97	0.44	27.15	15.11	
	PP-Fisher Chi-Square	43.58***	35.39**	39.94***	27.26	
EXCHRATE	LLC	-7.02***	-7.04***	-8.45***	-13.25***	I(0)
	IPS	-2.07**	-0.09	-2.69***	-1.25	
	ADF-Fisher Chi-Square	36.99***	21.93	42.06***	37.47***	
	PP-Fisher Chi-Square	52.57***	36.61***	53.80***	81.47***	
AGENCIES	LLC	-1.51*	-2.56***	-3.46***	-18.92***	
	IPS	0.33	-0.07	-4.30***	-1.28*	I(0)
	ADF-Fisher Chi-Square	22.49	18.71	32.14**	20.39*	
	PP-Fisher Chi-Square	28.78**	36.65***	35.42***	29.39***	

Variables	Test Method	I(0) with constant	I(0) with constant and trend	I(1) with constant	I(1) with constant and trend	Results
ACCOM	LLC	4.17	-8.1***	-6.42***	-5.81***	
	IPS	1.14	3.34	-2.11**	-1.80**	I(0)
	ADF-Fisher Chi-Square	25.06*	0.38	19.99	24.17***	
	PP-Fisher Chi-Square	35.24***	26.06**	26.07**	46.57***	
ENTERPRICES	LLC	-1.17*	-6.42***	-6.71***	-24.71***	
	IPS	0.95	-0.16	-3.43***	-1.22	I(0)
	ADF-Fisher Chi-Square	21.72	19.65	27.87*	18.53*	
	PP-Fisher Chi-Square	30.69**	39.13***	37.32***	33.19***	
TOPSPENDERS	LLC	4.42	-6.96***	-11.15***	-21.04***	
	IPS	3.41	0.52	-3.79***	-1.68**	I(0)
	ADF-Fisher Chi- Square	8.21	34.78**	52.45***	39.05***	
	PP-Fisher Chi-Square	7.79	70.68***	62.71***	61.96***	
ARRIVALS	LLC	-0.28	-12.89***	-13.30***	-14.83***	
	IPS	2.36	-0.96	-4.26***	-1.55*	I(0)
	ADF-Fisher Chi- Square	7.94	37.55***	57.75***	42.30***	
	PP-Fisher Chi-Square	13.90	72.35***	80.61***	84.17***	

***, ** and * in given order shows 1%, 5% and 10% significance level. Lag length determined by Schwarz info criterion. For the LLC and PP-Fisher tests Barlett Kernel method was used and bandwidth with decided with Newey-West method.

The panel unit root test results are reported in Table 4. The results show a conclusion that the null of unit root can be rejected for the levels of the variables especially for individual intercept and trend models. From the unit root analysis, we conclude that all the variables are stationary on their first-order.

2.4.Panel Regression Analysis Results

In this section we tested the econometric model that was developed with the aim of study and empirical findings were interpreted with the help of assumptions of the study. For the OECD countries determinants of international receipts, trade openness, population of the destination country, exchange rates, number of travel agencies and other reservation services in tourism industry, accommodation services for visitors, food and beverage serving enterprises in tourism industry, international arrivals from top spender countries, and total international arrivals were presented. We estimated the unbalanced panel-data model as shown:

$$rcpt_{it} = \beta_0 + \beta_1 tradeop_{it} + \beta_2 nufart_{it} + \beta_3 dov_{it} + \beta_4 agency_{it} + \beta_5 accom + \beta_6 fbindentrp_{it} + \beta_7 tspend_{it} + \beta_8 arrival_{it} + u_{it} \quad (1)$$

We use LR (Likelihood Root) test to examine if individual (or time) specific effects' standard errors are zero. The LR statistic follows the chi-squared distribution with df (2)-df (1) degree of freedom (Huelsenbeck and Crandall, 1997: 437-466). If the null hypothesis is rejected, we can conclude that there is a significant random effect in the panel data, and that the random effect model is able to deal with heterogeneity better than the pooled OLS. We reject the $H_0 : \mu_i = \lambda_i = 0$ hypothesis and conclude that there are individual and/or time effects in our data set.

We conducted appropriate formal tests to examine individual group and/or time effects. Since the null hypothesis of the LR test ($H_0 : \sigma_\mu = \sigma_\lambda = 0$) is not rejected, a pooled OLS model is better fit for our panel data set than a random effect model. Then, we conducted F-test and rejected the null hypothesis of ($H_0 : \mu_i = \lambda_i = 0$). So, a fixed effect model is favoured over OLS. As presented in Table 5, the most suitable model for the data set used for this study is fixed effect model.

Table 6: Testing Validity of Classic Model by Comparing Random Effect and Fixed Effect Models

Test	Hypothesis	Result	Explanation
F-Test	H_0: Classical model is valid. H_1: There is individual and/or time effect. $H_0 : \mu_i = \lambda_i = 0$	F(5, 18) = 21.88***	H_o hypothesis is rejected. (There is individual and/or time effect.)
LR Test (Likelihood Ratio test)	H_0: Classical model is valid. H_1: There is individual and/or time effect. $H_0 : \sigma_\mu = \sigma_\lambda = 0$	χ^2 [2]: 1.34 Prob: 0.51	H_o hypothesis is not rejected. (There is no individual and/or time effect.)

***, ** and * in given order shows %1, %5 and %10 sigficance levels; square brackets show freedom levels.

Fixed effect model run by within group estimation method and showed the results with validity of assumptions tests in Appendix 2. According to Modified Wald test results for groupwise heteroscedasticity in fixed effect regression model, there is heteroscedasticity problem between the countries. With the help of Bhargava, Franzini, Narendranathan's Durbin-Watson test autocorrelation within group and with the help of Pesaran CD test autocorrelation between group checked and no autocorrelation was found within and between groups.

Following testing the assumptions, they are valid in panel data set with greater T and N at heteroskedastic; Driscoll-Kraay standard errors are robust to general forms of cross-sectional spatial and temporal dependence.

Table 7: Expected Outcome of Fixed Effect Model with Driscoll-Kraay Standard Deviation

	Coefficient	t-value
tradeop	11742.24	1.40
popgrw	-26930.39	-9.93***
exchrate	333.72	2.91**
agency	-1.64	-1.71
accom	-0.86	-3.48**
fbindentrp	0.58	5.21***
tspend	0.005	5.90***
arrival	0.001	8.80***
constant	0.41	-8.35***
F	F[8, 6]: 11588.70***	
R^2	% 93	
Sample Number	32	
Group Number	6	

***, **and * in given order shows %1, %5, %10 significance level; square brackets shows freedom levels.

Driscoll-Kraay estimator model's expected outcome results are given in Table 7. These findings are the same with parameter values of the expected outcome of fixed effect model that was presented in Appendix 4 but with different standard deviation values. Based on the findings of the model, we found that "the coefficiency of trade openness" (the one we used as indicator of touristic income) is positive but statistical insignificance. Population growth of the destination country has negative and statistical significance effect on international tourism receipts. If population growth of the destination country increases for one unit proportionately, the international receipt decreases around 26930.39 USD. Exhange rates has positive and significance affect. One 1 unit proportionately increase in exchange

rates let international receipt around 333.72 USD. The number of travel agencies and other reservation services in tourism industry has slightly small but negative affect. The number of international arrivals from top spender countries and the total number of international arrivals has slightly small but positive affect. The most important finding in here is "the effect of the number of international arrivals from top spender countries" five times higher than the total number of international arrivals. This shows that concentrating tourism efforts on these top spending countries is rather wise way of spending valuable financial resources.

CONCLUSION

Aiming at investigating indicators of tourism related income, this study used dataset belong to top 10 countries in terms of tourism income in 2015, a list compiled by UNWTO. In this paper we summarized previous literature, and takes trade openness, population of the destination country, exchange rates (USD), number of travel agencies and other reservation services in tourism industry, accommodation services for visitors, food and beverage serving enterprises in the tourism industry, international arrivals from top spender countries, and total international arrivals as the explaining variables of international receipts.

Based on the findings of the Driscoll-Kraay estimator model, the number of international arrivals from top spender countries has positive affect on tourism receipts. Findings of this paper are not new, there are previous studies with similar findings. For example, Habibi and Ahmadzadeh (2015) found that trade openness of a country leads to receiving more tourists in return contributes to the growth in economy. Based on the findings of the model, we also found that "the co-efficiency of trade openness" has positive effect tourism related income of a country. Population growth of the destination country, on the other hand, has negative effect on international tourism receipts, a finding in line with Saray and Karagoz (2010: 38). Exchange rates have positive and significance effect, a deduction shared by Arslan (2013: 181). The number of travel agencies and other reservation services in tourism industry has slightly small but negative effect.

An important finding of the paper is that the number of international arrivals from top spender countries and the total number of international arrivals has slightly small but positive effect. Another important finding should be taken into account is "the effect of the number of international arrivals from top spender countries" five times higher than the total number of international arrivals. In this respect, targeting these countries national proves to be more beneficial rather than spending time and efforts in somewhere else.

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APPENDIXES:

Appendix 1. Pooled Model Stata Output

Source	SS	df	MS		
Model	9.7107e+10	9	1.0790e+10	Number of obs	= 38
Residual	1.8167e+09	28	64880680	F(9, 28)	= 166.30
				Prob > F	= 0.0000
				R-squared	= 0.9816
				Adj R-squared	= 0.9757
Total	9.8924e+10	37	2.6736e+09	Root MSE	= 8054.9

rcpt	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
kgdp	-.0809648	.1873644	-0.43	0.669	-.4647635	.3028338
ihr	1.15e-07	9.63e-09	11.98	0.000	9.57e-08	1.35e-07
nufart	24187.92	8272.887	2.92	0.007	7241.682	41134.16
enf	-1380.587	1169.168	-1.18	0.248	-3775.519	1014.345
dov	-372.7015	185.3504	-2.01	0.054	-752.3746	6.971661
dyy	5.60e-08	3.34e-08	1.68	0.105	-1.24e-08	1.24e-07
cultentrp	-.4027964	.2545356	-1.58	0.125	-.9241889	.1185962
tspend	.0024949	.0011991	2.08	0.047	.0000387	.004951
arrival	-.0003432	.0001496	-2.29	0.029	-.0006496	-.0000367
_cons	-27277.49	22410.68	-1.22	0.234	-73183.68	18628.71

Appendix 2. Random Effect Model Stata Output

```
Random-effects GLS regression                   Number of obs      =        32
Group variable: id                              Number of groups   =         6

R-sq:  within  = 0.5291                         Obs per group: min =         5
       between = 0.9995                                        avg =       5.3
       overall = 0.9874                                        max =         6

                                                Wald chi2(8)       =   1803.34
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

rcpt	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
disaacik	11103.05	38201.03	0.29	0.771	-63769.6	85975.69
nufart	9777.153	8433.387	1.16	0.246	-6751.982	26306.29
dov	242.8497	210.92	1.15	0.250	-170.5458	656.2452
agency	-1.726729	2.503675	-0.69	0.490	-6.633842	3.180383
accom	-.1173134	.1745393	-0.67	0.501	-.4594042	.2247774
fbindentrp	.3646254	.0945284	3.86	0.000	.179353	.5498977
tspend	.0021865	.0016883	1.30	0.195	-.0011225	.0054956
arrival	-.0003918	.0002241	-1.75	0.080	-.0008311	.0000474
_cons	-7161.478	20477.89	-0.35	0.727	-47297.41	32974.45
sigma_u	0					
sigma_e	2996.3709					
rho	0	(fraction of variance due to u_i)				

.

Appendix 3. Fixed Effect Model Stata Output

```
Fixed-effects (within) regression               Number of obs      =        32
Group variable: id                              Number of groups   =         6

R-sq:  within  = 0.9251                         Obs per group: min =         5
       between = 0.7886                                        avg =       5.3
       overall = 0.7821                                        max =         6

                                                F(8,18)            =     27.80
corr(u_i, Xb)  = -0.9869                        Prob > F           =    0.0000
```

rcpt	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
disaacik	11742.24	18515.4	0.63	0.534	-27157.17	50641.66
nufart	-26930.39	6831.665	-3.94	0.001	-41283.19	-12577.6
dov	333.7195	195.5123	1.71	0.105	-77.03653	744.4756
agency	-1.639927	1.860235	-0.88	0.390	-5.548135	2.268281
accom	-.8558485	.4786228	-1.79	0.091	-1.861398	.1497006
fbindentrp	.5752174	.1884194	3.05	0.007	.1793629	.971072
tspend	.0047077	.0010468	4.50	0.000	.0025084	.006907
arrival	.0010948	.0003375	3.24	0.005	.0003858	.0018038
_cons	-103527.7	24172.2	-4.28	0.000	-154311.6	-52743.81
sigma_u	171679.61					
sigma_e	2996.3709					
rho	.99969548	(fraction of variance due to u_i)				

F test that all u_i=0: F(5, 18) = 21.88 Prob > F = 0.0000

Fixed effect assumption test

Modified Wald test for group wise heteroscedasticity in fixed effect regression model

H_0: Assumptions are group wise homoscedastic.

Test result: χ^2 [6]: 61.57***

Bhargava, Franzini and Narendranathan's Durbin-Watson Test

H_0: No auto-correlation between units.

Test result: 1.93; Baltagi-Wu LBI = 2.20

Pesaran's CD Test

H_0: No correlation between units.

Pesaran's test of cross sectional independence = 0.606, Pr = 0.5443

Appendix 4. Driscoll-Kraay Estimator Stata Output

```
Regression with Driscoll-Kraay standard errors   Number of obs     =        32
Method: Fixed-effects regression                 Number of groups  =         6
Group variable (i): id                           F(  8,     6)     =  11588.70
maximum lag: 2                                   Prob > F          =    0.0000
                                                 within R-squared  =    0.9251
```

rcpt	Coef.	Drisc/Kraay Std. Err.	t	P>|t|	[95% Conf.	Interval]
disaacik	11742.24	8379.222	1.40	0.211	-8760.974	32245.46
nufart	-26930.39	2712.072	-9.93	0.000	-33566.6	-20294.19
dov	333.7195	114.7976	2.91	0.027	52.8198	614.6192
agency	-1.639927	.9614148	-1.71	0.139	-3.992424	.7125704
accom	-.8558485	.2462265	-3.48	0.013	-1.458343	-.2533541
fbindentrp	.5752174	.1104676	5.21	0.002	.304913	.8455218
tspend	.0047077	.0007976	5.90	0.001	.0027559	.0066595
arrival	.0010948	.0001244	8.80	0.000	.0007904	.0013992
_cons	-103527.7	12398.29	-8.35	0.000	-133865.3	-73190.19