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THE SYNERGIES BETWEEN HUMAN DEVELOPMENT, ECONOMIC GROWTH, AND TOURISM WITHIN A DEVELOPING COUNTRY: AN EMPIRICAL MODEL FOR TURKEY

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Abstract

In this study, human development in Turkey, the relationship between economic growth and tourism are examined by econometric methods. Economic growth affects human development in different dimensions. there are many studies on this subject. In addition, other arguments have been drawn up to show that tourism can affect human development and economic growth. Along with these, literature knowledge about the relationship between human development, economic growth and tourism is insufficient. In this study, first, the long-run relationship between variables was examined by Banarje et al. (2017) Fourier ADL Cointegration analysis was examined, then Hecker and Hatemi-J (2006) investigated the causality relationship between symmetric causality analysis and variables. As a result of the analyzes, it has been determined that the human development index affects economic growth and tourism positively. Besides, as a result of the causality analysis, one way between the economic growth and the human development index, and the one-way causality relationship between the human development index and tourism incomes.

Keywords: Human development, economic growth, tourism, co-integration, causality

Introduction

Within the development plans to be made with tourism, human development, poverty reduction and economic growth criteria are included (Mehrotra and Delamonica, 2007). Developing in line with these goals increases the prosperity of the individuals, creates productive individuals and thus contributes to the society of the country. On the other hand, these targets, which are included in the development

plans, are related to each other and the lack of one of these targets negatively affects the other targets and causes the positive results to be lost in the development plans.

The human development index (HDI) developed by UNDP quantitatively describes the concept of human development. Unlike conventional and income-based measures, HDI assesses a country in three different dimensions in the development race: 1) life expectancy (measured by life born at birth), 2) educational level (adult literacy rate and primary school), and 3) the level of income (measured by GDP per capita, purchasing power-STG-US dollars per capita), or, more precisely, the level of income to have a reasonable standard of living. HDI constitutes the average success of three levels of human development in a country so that when the level of development of a country is assessed only income is not the only criterion and other considerations are taken into account as important as income in terms of quality of life.

In this study, the effect of human development index on economic growth and tourism is examined. This study is similar to the work of a long-run relationship between human development, tourism and economic growth and its relationship (Folarin et al., 2017; Tang and Öztürk, 2017; Biagi et al., 2017; Rivera, 2016; Akinboade and Braimoh, 2010; as a positive relationship. Accordingly, in order for the relationship between these variables to be determined econometrically, Augmented Dickey-Fuller Test; ADF, Fourier ADL Cointegration Test, Dynamic Least Squares Method (DEKK, DOLS) and Hecker and Hatemi-J Causality Tests.

Data

In this study; Between 1980-2016 in Turkey, human development index of tourism revenues and its effect on economic growth were examined. Tourism income data are taken from the Association of Turkish Travel Agencies (ATTA) website and are calculated at the level of (tourism incomes / GDP), economic growth data are taken from the World Bank database, growth in GDP is calculated as economic growth (<http://hdr.undp.org/en/content/human-development-index-hdi>), which is published annually by the United Nations Development Program (UNDP)

Methodology and Findings

Since cointegration is performed in this study, the variables must be static levels (1). Otherwise, Cointegration will result in econometrically unreliable results. The ADF Augmented Dickey Fuller was the first to work with this information. Dickey and Fuller (DF test, 1979, 1981) developed the cumulative root test to test the stability of the time series. In this process, DF test shows whether time series variables can be expressed by autoregressive (AR) process. If autocorrelation is found in the error term as a result of the test, time series can not be expressed in first order autoregressive process (Göktaş, 2001: 35). Based on the Least Squares Method (LSM) estimation in the ADF test, the unit root test is applied for the $\gamma = 0$ hypothesis and it is decided according to the calculated t statistic. The rejection of the null hypothesis $H_0: \gamma = 0$ provides evidence to support the alternative hypothesis of stability and $H_1: \gamma < 0$. If the null hypothesis can not be rejected, the result of the series containing the unit root is reached.

Table 1. ADF Unit Root Results

Variables	I(0)	I(1)
Tourism Revenues	-0.246	-4.646***
Economic Growth	-0.403	-4.626***
Human Development Index	0.017	-3.206**

Note: ***, ** Variables are shown to be stable at 1% significance level.

According to the ADF unit root test results; the H_0 hypothesis at I (0) level is not rejected for all variables, whereas the H_0 hypothesis is rejected for all variables at first degree differences. According to this situation, it is shown that the variables are stable at I (1) level and consequently cointegration analysis can be done.

The existence of a cointegration relationship between stock exchanges was examined using Fourier ADL Cointegration entered into the literature by Banerjee et al. (2017). As a result of the analysis, the test statistics obtained are shown in Banarje et al. (2017), it is concluded that there is a cointegration relationship between the series, and in different cases there is no cointegration relation between the series.

Table 2. Fourier ADL Cointegration Results

Models	Test Statistics	Frequency	Min Aic	Critical Values
Model1: Tourism Revenues)=f(human development)	-4.137**	1	2.521	%1 -4.73 %5 -4.09 %10 -3.76
Model2: Economic growth =f(human development)	-5.374***	4	5.774	%1 -4.07 %5 -3.38 %10 -3.03

Note: ***, ** Models show co-integration at 1% and 5% significance levels, respectively.

According to the results of Table 2, it has been determined that there is a long-term relationship between human development index, tourism incomes and economic growth. Table 3 estimates long term coefficient models with Dynamic Ordinary Least Squares (DOLS).

The traditional estimation method for determining the coefficients is not objective because of internalisation and auto correlation. For this reason, parameter estimation is proposed with FMOLS proposed by Pedroni (1996) or DOLS developed by Kao and Chiang (2000). The DOLS method developed by Kao and Chiang (2000) was used in the study.

Table 3. DOLS Model Results

Modeller	Test Statistics	t-Statistics
Model 1: Tourism Revenues f(human development)	6.645*** [1.014]	6.553
Model2: Economic growth =f(human development)	8.617*** [2.996]	2.875

Note: ***, variables are meaningful at 1% significance level in this tablature.

According to the results of Model 1; the 1% increase in the human development index caused a 6.645% increase in tourism revenues. According to the results of Model 2; the 1% increase in the human development index leads to an 8.617% increase in economic growth rate.

The Granger causality test is used to determine the causality relationship between variables. Granger causality test according to VAR model when variables are stable; if the variables are not stable and there is a long-term relationship between the variables, the causality relation is investigated according to the VEC model. Toda-Yamamoto (1995) suggests that the stability or cointegrated causality relationship of variables is examined according to the improved VAR model. It is a good choice to do any pre test on this count. The Toda-Yamamoto test, however, was based on normal distributed faults. based on the assumption. Hacker and Hatemi-J (2006) found that this test failed when errors did not show normal distribution or when they had ARCH structure, and they recommend using bootstrap distribution instead of asymptotic X_2 distribution.

Claiming that there is no reason for the H0 hypothesis in the test, whereas the alternative hypothesis claims that it is causal. In this context, the fact that the statistical value is higher than the critical value means that the hypothesis H0 is rejected, and it also shows that it is the causality.

Table 4. Hacker and Hatemi-J bootstrap causality Test Results.

	Statistical Value	Critical Values		
		%1	%5	%10
Economic growth is not the Granger cause of human development index.	5.075**	7.614	4.153	2.894
Human development index is not the reason for Granger growth in economics.	0.156	7.791	2.275	2.992
The human development index is not the Granger cause of tourism revenues.	6.073**	10.383	5.809	4.139
Tourism income is not the Granger cause of human development index.	0.139	7.663	4.144	2.891

Note: The results are obtained with 10,000 bootstrap, showing 5% causality between ** variables.

As a result of Table 4, a unidirectional causality relation from the economic growth index to the human development index to the tourism incomes from the unilateral and human development index was determined.

Conclusion

The main aim of this study was to examine the effects on economic growth and human development indices of tourism revenue for Turkey. For this purpose, in order; ADF unit root test, Fourier ADL

cointegration test, DOLS cointegration coefficient estimator, and Hecker and Hatemi-J (2006) symmetric causality analyzes.

There are two models in this study; the first model examines the impact of the human development index on tourism incomes; cointegration relation in the model. It is also revealed that the human development index positively influences tourism revenues. Finally, causality analysis was conducted and unilateral causality in the direction of tourism revenues was determined only through the human development index as a result of the analysis. This finding is similar to the findings of Rivera (2016), Vanegas et al. (2015), while changes in the human development index affect tourism revenues.

In the second model, the effect of the human development index on economic growth is examined; the cointegration relationship and the human development index in this model have been found to increase economic growth. In the last case, causality analysis was conducted and as a result of the analysis, a unilateral causality relation was found from the economic growth to the human development index. This finding is evidenced in the Rivera (2016) study.

As a result of the findings of this study, not only the financial investments but also the political powers to raise the economic growth and tourism show that people should act carefully in the subjects of long and healthy life, education, transportation and human life.

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