

THE IMPACT OF AZERBAIJAN'S NATIONAL ECONOMIC DEVELOPMENT ON TOURISM SECTOR

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ABSTRACT

This article the influence of GDP on travel vouchers in a long- and short-term perspective, travel vouchers sold to Azerbaijani citizens for long-term internal journeys, the price of travel vouchers sold to Azerbaijani citizens, the number of beds per person in a day, the number of beds per all citizens in a day, and the number of residential areas per citizens. In addition, it analyzes the impact of GNI on those same items. Unlike other research about the influence of tourism development on GDP, this article examines the reverse impact - the impact of GDP on tourism development. In Azerbaijan, the primary source of GDP growth is the export of energy resources. Tourism is not a major contributor to economic development. The problem, therefore, is to find alternative ways to develop tourism based on the economic growth that comes from the export of energy resources. To explain this further, tourism development should rely on supply rather than the demand generated by GDP and GNI growth. As a result, GDP positively affects tourism development while GNI has a negative impact. We recommend considering the development of a stable supply for tourism that is not dependent on the revenues derived by energy exports.

Keywords: economic development, tourism, ARDLBT, Engel-Granger, cointegration

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INTRODUCTION

Tourism is thought to be one of the most dynamically developing sectors for the economy of any country in the modern world. The tourism sector is allocated significant investment in Azerbaijan, and sustainable development can add to the country's socio-economic progress. Investment in tourism is reflected in opening new workplaces and establishing tourism entities and infrastructures. The tourism sector

also plays an important role in diversifying the regions within Azerbaijan. Competition and rivalry among tourism producers to provide profitable opportunities are high (Mikayilov et al., 2019). At the same time, this competition is a mechanism for regulating a social product (Nazaraliyev, 2019).

Since gaining its independence, Azerbaijan has been developing an open market economy and has extended economic ties with different

countries, integrating itself into the international sphere. And thanks somewhat to its ages-old link to the Great Silk Way, Azerbaijan is full of natural, cultural, national, and ethnographic monuments. This, plus its suitable geographical position - nine climate zones, incredible nature, location on the coast of the Caspian Sea, cuisine, and hospitality - are the main factors that influence tourism. Besides, Azerbaijan has announced that tourism is crucial to developing the non-oil sector.

There is a wide range of opportunities to develop tourism facilities (village, health, ecology, culture, social, commercial sport, religion, etc.). In that regard, Azerbaijan has a lot of aims to develop tourism: research for tourism resources; surveys to determine the demand for tourism; the establishment of necessary services; the extension of health centers; building more tourism facilities such as hotels; and increasing types of tours. The main issue is to turn the country's economy into a sustainable, effective, competitive, and developed one. There is a rising tendency in this direction.

Natural resources, many types of climate zones, and rich cultural and historical heritage provide an opportunity to create a tourism product. In the last 10 years, reforms, state programs, and legislation prove that tourism is one of the main sectors. As a result of these measures, Azerbaijan tourism has penetrated into a new phase and the country is going to be recognized as a tourism-oriented country; integration into the global tourism market is developing every year.

In recent years, Azerbaijan's tourism potential, including information about infrastructure, public transport, tourism products, companies and hotels, were improved for internal and external tourists, providing information about and a database for tourism. Much of the information was targeted at German and Russian tourist-oriented websites.

Many actions have been taken for the development of the Azerbaijan tourism sector. New hotels, relaxation centers were built, and visa terms were simplified. Focusing on its beautiful nature, mineral water resources, the only health unit in the world with oil (Naftalan oil), ancient monuments, culture, national cuisine and other factors, the goal is to provide a good and safe rest in Azerbaijan that will appeal to all types of tourism, including business, sport,

health, hunting, exotic, beach and winter tourism. And, due to COVID-19, online work is expected to continue to be popular so that people will have more time for leisure activities, further boosting tourism. It is noteworthy that, unlike other foreign countries, reforms in Azerbaijan tourism caused an increase in quality with a price decrease.

This article includes the following sections. The Introduction presents the urgency and importance of the topic related to the tourism sector, which suffers from the wave of COVID-19. The Literature Review identifies different research in this field. The Data and Methods section describes the data sources taken from the ARDL model, Engel-Granger cointegration test, and standard Unit Root test to check stationary of rows, Auto-Regressive Distributed Lags Bounds Testing (ARDLBT) and diagnostics test methodology. The Results and Discussion section presents the subcategories of the Unit Root Tests results, ARDL model results, Cointegration Testing Results, ARDL Results from bound tests, Long Run and Short Run Coefficients, Diagnostic Test Results (F/LM Version), Engle-Granger analysis results (Granger cause-and-effect analysis evaluation results. Wald Test.). Finally, the Conclusion and Policy Implications present a summary and recommendations about the research area.

LITERATURE REVIEW

In modern times, the tourism economy and its role in overall economic development were of great interest to economists (Madlberger, 2014). Thus, the income generated from tourism undeniably improves the country's balance of payments and increases the level of employment and budget revenues (Khan et al., 1990; Durberry, 2002). Although publications on the various economic effects of tourism and the cause-and-effect relationship between tourism and economic growth have long been known, such studies have grown relatively rapidly since 2002. As such, Kim et al. (2006) concluded that theoretical models examining the cause-and-effect relationship between tourism and economic growth are a product of recent years.

Lanza and Pigliaru (2000), Balager and Cantavella Jorda (2002) were the first to study the relationship between tourism and economic growth empirically. Since then, publications have increased significantly (Croes and Manuel, 2008;

Muhammad, 2013; Khaled, 2020). In addition to the studies mentioned above that analyze the main cause-and-effect relationship between growth and tourism activities, many other aspects of tourism have been studied (Lucas 1988; Lanza et al., 2003; Algieri, 2006; Smykova, 2015; McKenzie, 2014), including the analysis of the characteristics of the tourist flow of independent tourists (Chun-Yan and Hyung-Ho Kim, 2020), econometric analysis of tourist demand

(Bayramli and Aliyev, 2020), the sustainable development of the tourism sector (Khalid Mohammad Hasan et al., 2020), ecotourism (Tai-GiAn and Lim-Soo Shin, 2020), empirical research on sports tourism service providers (Vanessa et al., 2020), instead of tourism in households (Dwi et al., 2019), environmental capital investments and research on the relationship between tourism (Mohammad et al., 2019).

Table 1. Summary of the studies

Authors	Country	Time Period	Empirical Method	Variables	Results
Shakouri et al. (2017)	Iran	1980-2014	ARDL, Granger Causality Test, Bayer and Hanks non-cointegration test	The effects of tourism receipts, physical capital, human capital, household consumption expenditure and economic growth	$T \leftrightarrow GDP$
Gövdeli & Direkci (2017).	34 OECD Countries	1997-2012	Panel FMOLS, panel cointegration tests. Pedroni and Kao cointegration tests	Relationship between economic growth and tourism (tourism revenues)	$T \rightarrow GDP$
Kurtuluş Bozkurt (2017)	36 OECD Countries	1995-2016	CADF test, SURADF test, Westerlund ECM panel integration test	The impact of tourism from agriculture, economic growth and sustainable development	$T \rightarrow GDP$ $T \rightarrow AG$ $T \rightarrow SD$
Ongan et al, (2017)	USA from Some European Union Countries	1996-2015	Cross-Sectional Dependence Tests for Variables. Cross-Sectional Dependence Tests for Model and Homogeneity Tests. CADF. ECM Panel Co-integration Test. CCE Estimates for the Panel. CCE Estimates for the Countries.	The Effects of Real Exchange Rates and Income on International Tourism Demand	$RER \rightarrow IT$ $I \rightarrow IT$
Işık et al, (2017)	France, USA, Spain, China, Italy, Turkey, Germany, United Kingdom,	1995-2013	VAR with lag order and the maximal order of integration due to Toda and Yamamoto Granger causality test for	Economic growth (Y) is the dependent variable, and energy consumption	$T \rightarrow GDP$ $EGY \rightarrow GDP$

Table 1. Continued

	Russia, and Mexico		cross-sectionally dependent panels developed by Emirmahmutoglu and Kose	(EGY) and tourism are the independent variables.	
Filipiak <i>et al.</i> (2020)	EU countries	2011–2018	Kendall's Nonparametric Test for Monotonic Trend	Relationship between the level of development of digitization (e-commerce ICT) and the development of the tourism industry and relationship between the development of the tourism industry and sustainability factors (SDG) and economy growth (GDP).	ICT → T T → GDP T → SDG
Băndoi <i>et al.</i> , (2020)	EU countries	2015 and 2018	Hierarchical Cluster Analysis	Direct contribution of travel and tourism to GDP (TDGDP), Direct contribution of travel and tourism to employment (TEMP)	T → TDGDP T → TEMP
Rufaro Garidzirai Tafadzwa Matiza (2020)	BRICS	1995–2017	P-ARDL	Tourism (receipts from exports, the travel subsector, hospitality and accommodation subsector) and poverty alleviation (final household consumption)	T → PA

In addition to the research mentioned above, we would claim that although there are several research studies about the impact of tourism on economic development - Garrigos-Simon *et al.*, (2018), León-Gómez *et al.*, (2021), and Pablo-Romero and Molina (2013) as an example of bibliometric research - there are few types of research about the impact of economic development on tourism and income. Some of this research includes Opstad *et al.* (2021), who researched the impact of German and Sweden

tourists on the Norwegian krone, and Chen *et al.* (2020), who researched the impact of fiscal decentralization and urban-rural income gap on tourism. In addition, Alaminos *et al.* (2020) and Škrinjarić (2019) researched the impact of economic development on tourism. Furthermore, Drăgoi *et al.* (2017) researched the impact of regional development on agrotourism, and Giap *et al.* (2016) researched the main aspects of tourism and influencing factors on the tourism industry.

Our research is a bit different. We researched the real impact of GDP and GNP on the tourism industry.

DATA DESCRIPTIONS

The data (2000-2018) were obtained from the State Statistics Committee of Azerbaijan. The change in their levels is presented in the descriptive statistics of all these variables (Table 2).

Table 2. Data and internet resource

<i>GNI</i>	Gross national income-dollars	www.stat.gov.az
<i>GDP</i>	Gross domestic product - dollars	www.stat.gov.az
<i>CTV</i>	Cost of tourist vouchers (thousand manats)	www.stat.gov.az
<i>CTVACAC</i>	The cost of tourist vouchers for Azerbaijani citizens to travel around the country (thousand manats)	www.stat.gov.az
<i>CTVACOC</i>	The cost of tourist vouchers of Azerbaijani citizens for trips outside the country (thousand manats)	www.stat.gov.az

METHODOLOGY

Our study was first introduced by Pesaran et al. (2001) from the Autoregressive Distributed Lags Bounds (ARDL) and the Engel-Granger cointegration test. Several cointegration approaches are used for different situations for empirical evaluation. The first cointegration approach is Engle and Granger, suitable for both variables (I(1)). The second cointegration approach is Johansen and Juselius, which can be used for any variable consisting of large sample size and an equal integration sequence. Both approaches to cointegration have several constraints that limit the static variables studied and have similar integration rules.

URT

Before evaluating regression equations, the stationarity of the variables using URT has to be determined. This is because when estimating the

relationship between two or more variables using regression analysis, it is necessary to have stability in the variables over time. For a time series variable to be stationary, its probability distribution must be the same for each time interval taken.

To make the stationary test results more reliable, three different single root tests are performed, both with and without a trend. The single root tests used are: (ADF), (PP), and (KPSS).

ARDLBT

It should be noted that the ARDL method is more valuable than other cointegration approaches and offers reliable results for small samples (Abbasov and Aliyev, 2018).

ARDL boundary test models can be expressed as follows (Equations (1-6)):

$$\Delta LCTV_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LCTV_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \lambda_1 LCTV_{t-1} + \lambda_2 GNI_{t-1} + \lambda_3 GDP_{t-1} + \varepsilon_t \quad (1)$$

$$\Delta LCTVACAC_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LCTVACAC_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \lambda_1 LCTVACAC_{t-1} + \lambda_2 GNI_{t-1} + \lambda_3 GDP_{t-1} + \varepsilon_t \quad (2)$$

$$\Delta LCTVACOC_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LCTVACOC_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \lambda_1 LCTVACOC_{t-1} + \lambda_2 GNI_{t-1} + \lambda_3 GDP_{t-1} + \varepsilon_t \quad (3)$$

$$\Delta LBND_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LBND_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \lambda_1 LBND_{t-1} + \lambda_2 GNI_{t-1} + \lambda_3 GDP_{t-1} + \varepsilon_t \tag{4}$$

$$\Delta LACCBND_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LACCBND_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \lambda_1 LACCBND_{t-1} + \lambda_2 GNI_{t-1} + \lambda_3 GDP_{t-1} + \varepsilon_t \tag{5}$$

$$\Delta LCCNPP_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LCCNPP_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \lambda_1 LCCNPP_{t-1} + \lambda_2 GNI_{t-1} + \lambda_3 GDP_{t-1} + \varepsilon_t \tag{6}$$

Here L logarithmic functions, ψ_0 , is a constant quantity, ε_t - indicates a white noise error. $\psi_{1i}, \psi_{2i}, \psi_{3i}$ are short-run coefficients, $\lambda_1, \lambda_2, \lambda_3$ and represent long-run coefficients.

The ARDL error correction model (ECM) is based on the following short-term relationships between variables (Equations (7-12)):

$$\Delta LCTV_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LCTV_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \varphi_1 ECT_{t-1} + \varepsilon_t \tag{7}$$

$$\Delta LCTVACAC_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LCTVACAC_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \varphi_2 ECT_{t-1} + \varepsilon_t \tag{8}$$

$$\Delta LCTVACOC_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LCTVACOC_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \varphi_3 ECT_{t-1} + \varepsilon_t \tag{9}$$

$$\Delta LBND_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LBND_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \varphi_4 ECT_{t-1} + \varepsilon_t \tag{10}$$

$$\Delta LACCBND_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LACCBND_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \varphi_5 ECT_{t-1} + \varepsilon_t \tag{11}$$

$$\Delta LCCNPP_t = \psi_0 + \sum_{i=1}^p \psi_{1i} \Delta LCCNPP_{t-1} + \sum_{i=0}^p \psi_{2i} \Delta LGNI_{t-i} + \sum_{i=0}^p \psi_{3i} \Delta LGDP_{t-i} + \varphi_6 ECT_{t-1} + \varepsilon_t \tag{12}$$

The ARDLBT approach examines whether there is a cointegration relationship between the variables after the *ECM* is established. The ARDL bounds-testing cointegration method uses the Wald test (F -stat) on λ_i to indicate the existence of long-term cointegration between selected variables, which checks whether there is a cointegration relationship ($H_0: \lambda_1 = \lambda_2 = \lambda_3 = 0; H_1: \lambda_1 \neq \lambda_2 = \lambda_3 \neq 0$). An alternative hypothesis is the cointegration relationship between variables. Pesaran et al., (2001), F - proposed two types of boundaries based on criterion statistics (i.e., upper bound and lower bound). If

the estimated value of the F -criterion is below the lower limit, it means that there is no significant long-term relationship between the variables. Furthermore, if the predicted value of the F -criterion is higher than the upper limit, this indicates the existence of a long-term relationship between the variables. However, if the calculated statistics of the F -test are within limits, this means that the results are uncertain.

Engel-Granger cointegration test

The Engel-Granger (EG) (Engle and Granger, 1987) cointegration test allows the verification of the existence of a long-term relationship and investigates the short-term relationship, and determines the direction of the relationship between the related variables. In the first stage of the EG cointegration test, the regression equation is evaluated for variables.

Thus, for the three variables given in our example (Equations (13-18)):

Table 3. Equations for the three variables.

$LCTV_t = \psi_0 + \lambda_1 GNI_t + \lambda_2 GDP_t + \varepsilon_t$	(13)
$LCTVACAC_t = \psi_0 + \lambda_1 GNI_t + \lambda_2 GDP_t + \varepsilon_t$	(14)
$LCTVACOC_t = \psi_0 + \lambda_1 GNI_t + \lambda_2 GDP_t + \varepsilon_t$	(15)
$LBND_t = \psi_0 + \lambda_1 GNI_{t-1} + \lambda_2 GDP_t + \varepsilon_t$	(16)
$LACCBND_t = \psi_0 + \lambda_1 GNI_t + \lambda_2 GDP_t + \varepsilon_t$	(17)
$LCCNPP_t = \psi_0 + \lambda_1 GNI_t + \lambda_2 GDP_{t-1} + \varepsilon_t$	(18)

Here, ψ_0 , λ_1 and λ_2 are the regression coefficients to be evaluated, and LCTV, LCTVACAC, LCTVACOC, LBND, LACCBND and LGNI, LGDP represent the dependent and free variables, respectively, ε - noise error, while t represents time. After evaluating the regression equation, the next step is to check the steady state of the white noise error. If ε_t is stationary, it means that there is a cointegration relationship between these variables and that this relationship is not spurious. Based on this, equations 13-18 are considered to be long-term equations. Finally, the ECM is evaluated using stationary variables and a periodic delay white noise error (ECT_{t-1}) to check the cause-and-effect relationship between the variables, in other words, the strength and direction of the dependence (Equations (7-12)).

Here ψ_0 , ψ_{1i} , ψ_{2i} , ψ_{3i} , φ_1 , φ_1 , φ_3 , φ_4 , and φ_5 express the coefficients; p is the optimal delay size, and ε is the white noise error of the model and the direction of the relationship between the variables. In the first stage of the EG cointegration test, the regression equation is evaluated for variables. EG shows that if there is cointegration between variables, this dependence should also be evaluated. If the cointegration relationship is stable (the ECT), ECT_{t-1} coefficients φ_1 , φ_1 , φ_3 , φ_4 , φ_5 and φ_6 should be negative and statistically significant. Is usually rated between -1 and 0.

The following cause-and-effect relationships can be tested using equations 7-12.

The Granger cause-and-effect relationship for the short run is evaluated using F -statistical or X_i - square statistical values by checking the statistical significance of the coefficients of all delayed first-order differences (all $\Delta LGNI_{t-i}$ and $\Delta LGDP_{t-i}$) together for each free variable (zero hypotheses: $H_0: \psi_{2i} = \psi_{3i} = 0, i = 1 \dots p$). The rejection of the zero hypothesis suggests that GNI and GDP have short-term effects on LCTV, LCTVACAC, LCTVACOC, LBND, and LACCBND.

Using the t-test to check the Granger cause-and-effect relationship for the long run, the statistical significance of the coefficient ECT_{t-1} is checked. The zero hypothesis for this ($H_0: \varphi_1 = 0, \varphi_1 = 0, \varphi_3 = 0, \varphi_4 = 0, \varphi_5 = 0 \vee \varphi_6 = 0$) needs to be tested. If, as a result, the null hypothesis is rejected, this long-run period shows that deviations from the equilibrium state affect the dependent variable and will return to the equilibrium state over time.

A strong cause-and-effect relationship is, in fact, both a short-term and a long-term cause-and-effect relationship. In other words, using the F - statistic or X_i - square statistical values through the Wald test as a zero hypothesis for each variable taken hypotheses are tested.

- $(H_0: \psi_{2i} = \psi_{3i} = \varphi_1 = 0, i = 1 \dots p, ;$
- $H_0: \psi_{2i} = \psi_{3i} = \varphi_2 = 0, i = 1 \dots p, ;$
- $H_0: \psi_{2i} = \psi_{3i} = \varphi_3 = 0, i = 1 \dots p, ;$
- $H_0: \psi_{2i} = \psi_{3i} = \varphi_4 = 0, i = 1 \dots p, ;$
- $H_0: \psi_{2i} = \psi_{3i} = \varphi_5 = 0, i = 1 \dots p, ;$
- $H_0: \psi_{2i} = \psi_{3i} = \varphi_6 = 0, i = 1 \dots p,)$

Diagnostics

This study uses the Breusch-Godfrey LM test, the heteroscedasticity test, the Breusch-Pagan-Godfrey test, and the Autoregressive Conditional Heteroskedasticity test ARCH and Ramsey RESET Test (statistical) to check the stability of the ARDL model. The J-B Normality test is used to check the normal distribution of the white noise error. The CUSUM and CUSUMSQ tests are also used to investigate the stability of the ARDL model.

RESULTS AND DISCUSSION

Unit Root Tests Results

According to the ADF test in the With Intercept

only model, there is no variable I(0). However, LCTV, LCCNPP, LBND, LACCBND, LCTVACOC, and LCTVACAC I(1). Only LBND and LACCBND I(0) are in the With Intercept & Trend model. LCCNPP, LBND, LACCBND, LCTVACOC and LCTVACAC I(1). There is no variable I(0) in the No Intercept & No Trend model,. All variables are I(1).

According to the PP test, in the With Intercept only model, only the LBND and LACCBND variables are I(0). In addition, LCTV, LCCNPP, LBND, LACCBND, LCTVACOC, and LCTVACAC I(1). In the With Intercept & Trend model, there is no variable I(0). However, LCTV, LCCNPP, LBND,

LACCBND, LCTVACOC and LCTVACAC I(1). In the No Intercept & No Trend model, there is no variable I(0). All variables are I(1).

According to the KPSS test in the With Intercept only model, all variables are I(0). In addition, LCTVACAC is also I(1). In the With Intercept & Trend model, all variables of the same year are I(0). In addition, LCTVACAC is also I(1).

The ADF, PP, and KPSS unit root test evaluation results suggest that the ARDL method and the ARDL boundary-test approach can be used to evaluate short-term and long-term associations between variables.

Table 4. Models

Model 1	$F_{LCTV} = (LCTV/GLNI, LGDP)$	ARDL (1, 0, 0) (AIC) C lag, automatic
Model 2	$F_{LCTVACAC} = (LCTVACAC/LGNI, GDP)$	ARDL (1, 1, 1) (AIC) C @TREND lag, fixed
Model 3	$F_{LCTVACOC} = (LCTVACOC/LGNI, LGDP)$	ARDL (1, 0, 0) (AIC) C lag, automatic
Model 4	$F_{LBND} = (LBND/LGNI, LGDP)$	ARDL (1, 0, 0) (AIC) C lag, automatic
Model 5	$F_{LACCBND} = (LACCBND/LGNI, LGDP)$	ARDL (1, 0, 0) (AIC) C lag, automatic
Model 6	$F_{LCCNPP} = (LCCNPP/LGNI, LGDP)$	ARDL (1, 0, 0) (AIC) C lag, automatic

Cointegration Testing Results

Table 5. ARDL Results from bound tests

	F-statistic	
Model 1	2.085722	No-Cointegration
Model 2	8.914515***	Cointegration
Model 3	2.852949	No-Cointegration
Model 4	3.919256	No-Cointegration
Model 5	2.902750	No-Cointegration
Model 6	1.447234	No-Cointegration

Unrestricted Constant and No Trend: The results of the ARDL boundary test are given in Table 5. Related to ARDL, but in the second equation $F_{CTVACAC} = (CTVACAC/GNI, GDP)$ F, the

result showed that there is cointegration between the variables. First $F_{CTV} = (CTV/GNI, GDP)$, third $F_{CTVACOC} = (CTVACOC/GNI, GDP)$ fourth $F_{BND} = (BND/GNI, GDP)$, fifth $F_{ACCBND} = (ACCBND/GNI, GDP)$ and sixth $F_{CCNPP} = (CCNPP/GNI, GDP)$ equations demonstrated the absence of long-term cointegration.

Restricted Constant and No Trend: F-statistic- Model 1 (4.642194**), Model 3 (4.826476**), Model 4 (7.773800***), Model 5 (3.685004), Model 6 (6.915941***) and Unrestricted Constant and Restricted Trend: F- statistic- Model 2 (6.709281***).

Table 6. L-R and S-R Coefficients.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
LGDP	12.571578**	-7.389749	10.039092*	4.635798	5.068816	31.323433
LGNI	-11.511155*	6.844846	-8.834922*	-6.123730	-5.618064	-46.230541
C	-27.435866***	26.954241	-23.117005**	17.224403	6.983759	89.198546
@TREND		0.195243				
Short Run Coefficients (Error correction estimates)						
Δ LGDP	8.301504*	0.991916	6.380504*	0.426301	0.763803	0.179130
Δ LGNI	-7.601265*	-0.824544	-5.615175	-0.563129	-0.846567	-0.234862
Δ @TREND		0.183527**				
ECT ₋₁	-0.660339*	-0.939994	-0.635566**	-0.091959	-0.150687	-0.005080
<i>Note:*** ≤ 1%, ** ≤ 5% and * ≤ 10%.</i>						

Table 7 presents the results of the long-term and short-term approaches of ARDL. The evaluation results of the ARDL model show that in Model 1, GDP has a positive and significant effect on CTV in both long-term and short-term perspectives. Thus, a 1% increase in GDP increases CTV by 12.57% and 8.30%, respectively. In Model 2, GDP has a negative and insignificant impact on the CTVACAC in the long run and a positive and negligible impact in the short term (-7.38% and 0.99%). In Model 3, GDP has a positive and significant impact (10.03% and 6.38%) on CTVACOC both long and short term. In Model 4, 5, and 6, the GDP as BND, ACCBND, and CCNPP has a positive and insignificant effect in the long term and the short term (4.63% and 0.42%; 5.06% and 0.77%, respectively; 31.32% and 0.18%).

The situation is entirely different with GNI, however. In Model 1, GNI has a negative and significant effect on CTV in both the long term and the short term. A 1% increase in GNI reduces the CTV by 11.51% and 7.60%, respectively. In Model 2, GNI based on the CTVACAC has a positive and insignificant impact, in the long run, a negative and negligible effect in the short term (6.84% and -0.82%). In Model 3, GNI has a negative and significant (-8.83%) long-term (-8.83%) and insignificant (-5.61%) impact on CTVACOC. In Model 4, 5, and 6, the GNI as the BND, ACCBND, and CCNPP has a negative and insignificant impact in the long term as well as in the short term (-6.12% and -0.56%; -5.61% and -0.85%, respectively; -46.23% and -0.23%).

Diagnostic

Table 7. Diagnostic Test Results (F/LM)

	Ramsey RESET	JB	HT		B-GSC LM χ^2	GUSUM / GUSUM of Squares
			ARCH χ^2	B-P-G		
Model 1	0.424858	0.863855	1.761739	2.385289	0.466354	stability/ stability
	0.5259	0.649257	0.2043	0.1129	0.6382	
	0.651811	N/A	1.786781	6.088410	1.298161	
	0.5259	N/A	0.1813	0.1074	0.5225	
Model 2	0.981970	1.030387	0.004455	0.655959	0.607375	no-stability/ stability
	0.3672	0.597385	0.9481	0.6892	0.5884	
	0.990944	N/A	0.005343	5.149563	3.028287	
	0.3672	N/A	0.9417	0.5248	0.2200	
Model 3	1.423546	0.770738	1.352139	2.201353	0.995074	stability/ stability
	0.2541	0.680200	0.2631	0.1333	0.3982	
	1.193124	N/A	1.405710	5.769401	2.560563	
	0.2541	N/A	0.2358	0.1234	0.2780	
Model 4	0.136838	1.133508	1.328505	7.280988	2.456993	no-stability/ no-stability
	0.8933	0.567364	0.2671	0.0035	0.1275	
	0.018725	N/A	1.383138	10.96932	5.229503	
	0.8933	N/A	0.2396	0.0119	0.0732	
Model 5	7.818175	19.55625	0.179456	1.036310	0.431777	stability/ no-stability
	0.0188	0.000057	0.6779	0.4068	0.6591	
	7.818175	N/A	0.200980	3.270850	1.208373	
	0.0188	N/A	0.6539	0.3517	0.5465	
Model 6	0.268017	4.248617	0.622787	0.514467	1.535655	stability/ no-stability
	0.7929	0.119516	0.4423	0.6789	0.2548	
	0.071833	N/A	0.677688	1.787332	3.668133	
	0.7929	N/A	0.4104	0.6177	0.1598	

Table (7) presents the results of diagnostic tests ARDL models. The evaluation results of the

Breusha – Godfrey (BG) method confirmed that our ARDL model had no problems with

sequential correlation. The results of the Breusha-Pagan-Godfrey (BFG) and ARCH methods later confirmed that heteroscedasticity was not a problem. According to the Ramsey RESET test, the model is well defined. The table shows the total amount of recursive balances

(CUSUM) and the squares of recursive balances (CUSUMQ), indicating that the ARDL model is constant during the sampling period (CUSUM). The results obtained are not statistically significant (Table 8).

Engle-Granger analysis results

Table 8. Wald Test.

	Short-term period				Long-term period		Strong impact			
	$\Delta LGDP$		$\Delta LGNI$		ECT_{-1}		ECT_{-1} and $\Delta LGDP$		ECT_{-1} and $\Delta LGNI$	
	Chi-sq.	F-st.	Chi-sq.	F-st.	t-st.	F-st.	Chi-sq.	F-st.	Chi-sq.	F-st.
Model 1	2.668777 (0.1023)	2.668777 (0.1283)	2.012852 (0.1560)	2.012852 (0.1814)	-1.444685 (0.1741)	2.087116 (0.1741)	3.134966 (0.2484)	1.567483 (0.2086)	2.612205 (0.2709)	1.306103 (0.3068)
Model 2	0.319077 (0.5722)	0.319077 (0.5898)	0.376787 (0.5393)	0.376787 (0.5587)	-0.204050 (0.8441)	0.041637 (0.8441)	0.320806 (0.8518)	0.160403 (0.8548)	0.376790 (0.8283)	0.188395 (0.8324)
Model 3	1.803185 (0.2042)	1.803185 (0.1793)	1.222650 (0.2688)	1.222650 (0.2905)	-1.638377 (0.1273)	2.684280 (0.1273)	3.046598 (0.2180)	1.523299 (0.2573)	2.749241 (0.2529)	1.374620 (0.2900)
Model 4	1.729623 (0.1885)	1.729623 (0.2130)	2.869226 (0.0903)	2.869226 (0.1161)	-1.978538 (0.0713)	3.914614 (0.0713)	4.225603 (0.1209)	2.112801 (0.1636)	4.249137 (0.1195)	2.124569 (0.1622)
Model 5	2.215530 (0.1366)	2.215530 (0.1624)	1.934058 (0.1643)	1.934058 (0.1896)	-2.520190* (0.0269)	6.351357 (0.0269)	5.478051* (0.0392)	3.239025 (0.0750)	6.423141* (0.0403)	3.211570 (0.0764)
Model 6	0.009282 (0.9232)	0.009282 (0.9248)	0.002522 (0.9599)	0.002522 (0.9608)	-0.037388 (0.9708)	0.001398 (0.9708)	0.009749 (0.9951)	0.004874 (0.9951)	0.002604 (0.9987)	0.001302 (0.9987)
ADF										
	-3.218731**	-3.109346*	-3.014014*				-5.366855***		-3.740895**	-1.815922
<i>Note:</i> *** $\leq 1\%$, ** $\leq 5\%$ and * $\leq 10\%$.										

CONCLUSION AND RECOMMENDATION

To summarize the whole article, we come to these conclusions: GDP affects positively and significantly travel voucher price in a long- and short-term perspective, impacts negatively and little on travel vouchers sold to Azerbaijani citizens for long-term internal journeys, but influences positively in the short term. In addition, GDP has a positive effect either in the long term or short-term perspective on travel voucher's price sold to Azerbaijani citizens, the number of beds per person in a day, the number of beds per all citizens in a day, and the number of people in total.

The situation regarding gross national income is entirely different, however. GNI affects negatively yet significantly travel voucher price in a long- and short-term perspective impacts positively yet little on travel vouchers sold to Azerbaijani citizens for long-term internal journeys, influences negatively yet significantly on travel voucher price sold to Azerbaijani citizens for external journey in a short-term

period; oppositely, it affects less in the long term. In addition, gross national income affects negatively and little to the number of beds per person in a day and the number of beds per all citizens in a day both in the long and short term.

We concluded that proper state policy is a must to ensure the sustainable development of tourism, which has a tremendous reciprocal impact on national economic development. From this perspective, Azerbaijan has determined the tourism sector as one of the leading industries besides oil. In fact, state programs approve this trend by adopting relevant laws and acts.

The research does have some limitations: the topic is new to Azerbaijan; data is only given by years; tourism potential is not fully utilized; freed areas in Azerbaijan can play an important role in tourism, and the pandemic is still in progress. All of these make the interpretation of the results difficult.

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