YASHIL

IQTISODIYOT&TARAQQIYOT

Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

№6
MAXSUS SON

Google Scholar · OPEN ACCESS · ULRICHSWEB GLOBAL SERIALS DIRECTORY · OpenAIRE · ROAD · НАУЧНАЯ ЭЛЕКТРОННАЯ БИБЛИОТЕКА eLIBRARY.RU · Academic Resource Index ResearchBib · ISSN INTERNATIONAL STANDARD SERIAL NUMBER INTERNATIONAL CENTRE · CYBERLENINKA · BASE · INDEX COPERNICUS INTERNATIONAL · Crossref

BAKALAVR TALABALARINIG MAQOLALARI TO'PLAMI

ISSN: 2992-8982
https://yashil-iqtisodiyot-taraqqiyot.uz/
2025

YASHIL

IQTISODIYOT&TARAQQIYOT

Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

Elektron nashr. 91 sahifa.
E'lon qilishga 2025-yil mayda ruxsat etildi.

YASHIL
IQTISODIYOT&TARAQQIYOT
Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

08.00.01 Iqtisodiyot nazariyasi
08.00.02 Makroiqtisodiyot
08.00.03 Sanoat iqtisodiyoti
08.00.04 Qishloq xo'jaligi iqtisodiyoti
08.00.05 Xizmat ko'rsatish tarmoqlari iqtisodiyoti
08.00.06 Ekonometrika va statistika
08.00.07 Moliya, pul muomalasi va kredit
08.00.08 Buxgalteriya hisobi, iqtisodiy tahlil va audit
08.00.09 Jahon iqtisodiyoti
08.00.10 Demografiya. Mehnat iqtisodiyoti
08.00.11 Marketing
08.00.12 Mintaqaviy iqtisodiyot
08.00.13 Menejment
08.00.14 Iqtisodiyotda axborot tizimlari va texnologiyalari
08.00.15 Tadbirkorlik va kichik biznes iqtisodiyoti
08.00.16 Raqamli iqtisodiyot va xalqaro raqamli integratsiya
08.00.17 Turizm va mehmonxona faoliyati

Muassis: "Ma'rifat-print-media" MChJ
Hamkorlarimiz: Toshkent davlat iqtisodiyot universiteti, O'zR Tabiat resurslari vazirligi, O'zR Bosh prokuraturasi huzuridagi IJQK departamenti.

Jurnalning ilmiyligi:
""Yashil" iqtisodiyot va taraqqiyot" jurnali
O'zbekiston Respublikasi Oliy ta'lim, fan va innovatsiyalar vazirligi huzuridagi Oliy attestatsiya komissiyasi rayosatining 2023-yil 28-fevraldagi 333/5-sonli qarori bilan ro'yxatdan o'tkazilgan.

MUNDARIJA

MUNDARIJA СОДЕРЖАНИЕ CONTENTS

IMPACT OF THE TOURISTIC INDICATORS ON THE POVERTY RATE

Abdumanova Maftuna
Foundation Student of IMC Krems
Transnational De-partment, Tashkent
State University of Economics
maftunaabdumano-va607@gmail.com
ORCID: 0009-0008-7640-7647

Azizova Ruhshona
Foundation Student of IMC Krems
Transnational Department, Tashkent State
University of Economics
ruhsonaaz-izova03@gmail.com
ORCID: 0009-0009-6222-0192

Shavkatova Mubiynabonu
Foundation Student of IMC Krems
Transnational De-partment, Tashkent
State University of Economics
mu-biiynash@gmail.com
ORCID: 0009-0008-8385-0495

Durdona Bahodirova
Senior Teacher of IMC Krems
Transnational Department, Tashkent
State University of Economics
durdo-na.bahodirova1211@gmail.com
ORCID: 0009-0003-4791-6091
Scientific supervisor

Abstract: Understanding the relationship between poverty and tourism is essential for leveraging tourism as a tool for poverty alleviation. The core objective of this study is to determine whether tourism has a positive effect on poverty reduction or whether the development of the industry fails to generate significant changes. This research analyzes the impact of tourism on reducing both poverty and income inequality, particularly examining how the arrival of international visitors affects poverty levels and income distribution. The results indicate that income from tourism has alleviated poverty to a small extent but has not been sufficient to fully address it. Moreover, tourism has clearly failed to reduce inequality in wealth distribution. These conclusions are supported by several forms of Gini coefficients, which show no substantial improvement in income inequality as a result of tourism development.

Key words: tourism, poverty reduction, income inequality, income distribution, international visitors, economic impact, Gini coefficient.

Annotatsiya: Qashshoqlik va turizm o‘rtasidagi munosabatni tushunish, turizmni qashshoqlikni kamaytirish vositasi sifatida ishlatish uchun muhimdir. Ushbu tadqiqotning asosiy maqsadi turizmning qashshoqlikni kamaytirishga ijobiy ta'sir ko‘rsatadimi yoki sanoatning rivojlanishi sezilarli o‘zgarishlarni yaratishda muvaffaqiyatsiz bo‘ladimi, degan savolni aniqlashdir. Ushbu tadqiqot turizmning qashshoqlik va daromad tengsizliklarini kamaytirishdagi ta'sirini tahlil qiladi, xususan, xalqaro mehmonlarning kelishi qashshoqlik darajalariga va daromad taqsimotiga qanday ta'sir ko‘rsatishini o‘rganadi.

Natijalar shuni ko‘rsatadiki, turizmdan olingan daromad qashshoqlikni biroz kamaytirgan, ammo uni to‘liq hal qilish uchun yetarli bo‘lmagan. Bundan tashqari, turizm boylik taqsimoti tengsizliklarini kamaytirishda aniq muvaffaqiyatsiz bo‘ldi. Bu xulosalar bir nechta Gini koeffitsientlari yordamida qo‘llab-quvvatlanadi, ular turizm rivojlanishi natijasida daromad tengsizliklarida sezilarli yaxshilanishni ko‘rsatmaydi.

Kalit so‘zlar: turizm, qashshoqlikni kamaytirish, daromad tengsizliklari, daromad taqsimoti, xalqaro mehmonlar, iqtisodiy ta'sir, Gini koeffitsienti.

Аннотация: Понимание взаимосвязи между бедностью и туризмом является важным для использования туризма как инструмента борьбы с бедностью. Основная цель этого исследования заключается в том, чтобы определить, оказывает ли туризм положительное влияние на сокращение бедности или же развитие этой отрасли не приводит к значительным изменениям. Это исследование анализирует влияние туризма на сокращение бедности и неравенства в доходах, в частности, исследуя, как приезд международных туристов влияет на уровень бедности и распределение доходов.

Результаты показывают, что доходы от туризма немного смягчили бедность, но не были достаточными для полного решения этой проблемы. Кроме того, туризм явно не сократил неравенство в распределении богатства. Эти выводы подтверждаются несколькими формами коэффициентов Джини, которые не показывают значительных улучшений в неравенстве доходов в результате развития туризма.

Ключевые слова: туризм, снижение бедности, неравенство в доходах, распределение доходов, международные туристы, экономическое воздействие, коэффициент Джини.

INTRODUCTION

Tourism, as one of the primary sources of income in several nations, has a wide range of economic effects that influence both national and international collaboration, as well as the development of individual economies. According to Asongu and [6], sustainable tourism guarantees a steady flow of revenue for economic growth, particularly for nations whose economies heavily rely on the travel and tourism sector.

This sector is not only gaining popularity, but also attracting increasing consumer spending. The tourism industry is not merely about revenue generation; it also fosters cultural exchange. Such interactions help people from different backgrounds understand each other, share traditions, visit heritage sites, and most importantly promote tolerance and mutual respect.

To determine the extent of its growing popularity, let us examine the data provided by the United Nations World Tourism Organization in 2016. The number of international tourist arrivals increased by 4.6% in 2015 – year on year – reaching a total of 1.186 billion arrivals. Table 1 presents data on international arrivals across various countries between 2015 and 2020.

The enormous volume of arrivals boosts local businesses, creates jobs, reduces unemployment, and generates income all of which contribute to overall economic development. Tourism development is widely regarded not only as a catalyst for economic growth but also as an effective tool for poverty alleviation [2].

According to Renuka Mahadevan and Sandy Suardi, this aligns with the trickle-down hypothesis, which posits that growth in the tourism industry eventually stimulates broader economic growth and reaches the more disadvantaged segments of society [15]. From an optimistic standpoint, tourism is believed to stimulate local economies by encouraging the consumption of regional goods and services.

As noted by Copeland, the primary mechanism through which an increase in the number of foreign visitors affects a country's welfare is the rise in the relative cost of non-traded goods and services that international tourists consume during their stay [3]. Tourism directly influences businesses by way of the goods and services purchased by visitors, which generates revenue for business owners and provides income for employees.

We argue that it is not sufficiently insightful to merely quantify the relationship between tourism and poverty. A more compelling question is: Under what conditions is this relationship most significant? According to Bartik [4], as the tourism industry expands, property values tend to rise faster than real wages or employment opportunities, potentially worsening income inequality. Most existing empirical research has examined the impact of tourism on either poverty or income distribution—but not both. This study aims to analyze both dimensions simultaneously.

REVIEW OF RELEVANT LITERATURE

According to Medina-Muñoz, Medina-Muñoz, and Gutiérrez-Pérez [2], poverty alleviation has generally been considered a positive byproduct or a secondary objective, while economic growth has remained the primary focus of tourism development. This approach has led to the concept of pro-poor growth, referring to national policies aimed at stimulating economic expansion to benefit the poor.

Blake [5] argued that the poor benefit from tourism only insofar as their income is directly linked to the tourism sector rather than other export-driven industries. In cases where incomes rely on non-tourism exports, increased tourist arrivals may have adverse effects. For example, a surge in foreign visitors can cause an appreciation of the local currency through rising exchange rates, making other exports less competitive and thereby negatively affecting non-tourism sectors.

Nonetheless, the undesirable consequences of tourism are well-documented: inflation, inequality, threats to natural and cultural heritage, deterioration in quality of life, and environmental degradation [6]. All of these impacts tend to affect impoverished communities more severely than affluent ones. These dynamics reflect trade-offs namely, improvements in one metric (such as GDP growth) may come at the expense of another (such as equality or environmental sustainability).

Croes and Rivera [7], through a simulation based in Ecuador, found that the poorest households gained the most from a 1% increase in tourism receipts. However, the majority of empirical studies suggest that tourism has a limited effect on poverty reduction in the short term, as it generates relatively minor benefits for the poor [8–9].

On the other hand, many developing countries have committed to expanding their tourism sectors, viewing them as key drivers of GDP growth, employment creation, and income generation [2]. The link between tourism and poverty reduction is often framed in terms of trade and macroeconomic development, especially in developed countries where job creation and enterprise growth contribute to a favorable balance of payments and reduced poverty levels [11].

To assess tourism's effect on poverty, it is necessary to evaluate regional poverty levels. This study uses one common poverty indicator the headcount ratio, which measures the proportion of the population living below the international poverty line. In this analysis, H denotes the number of people living below the latest available poverty line of $3.65 per day (2017 data).

Wen and Tisdell [12] were among the first researchers to explore the relationship between tourism and income inequality. It is essential to analyze how the economic benefits of tourism are distributed among different income groups within a society. Their findings suggested that tourism can increase inequality across regions.

Tosun, Timothy, and Öztürk [13], examining the case of Turkey, observed that as economic growth accelerated, income disparity also widened. In this context, the Gini coefficient is widely recognized as a reliable metric for measuring income inequality, as it reflects disparities within a population or social group.

DATA AND METHODOLOGY

This part describes the dataset, the variables, and the econometric strategy used to assess the impact of tourism on poverty alleviation and income inequality on a global scale.

Data Description

The analysis relies on a balanced panel dataset that contains 134 countries over a period of six years (2015–2020). Most of the data were collected from the World Bank's World Development Indicators. However, the number of observations differs across variables, which becomes an issue with unbalanced panels. The study uses the long format of the dataset in order to perform comprehensive panel regression analysis. Figure

1 provides the descriptive statistics, listing the minimum, maximum, and average for each sociological variable used within the study.

Variables of Interest

The two main results are:

Poverty: This is represented by the headcount poverty ratio (P_0), which indicates the proportion of people whose income is less than the international poverty line ($3.65/day in 2017 PPP).

Income Inequality: Represented by the Gini coefficient, a measure of income inequality, whereby zero implies perfect equality and 100 denotes extreme inequality.

The primary explanatory variables are:

Tourism Receipts: Receipts from international tourism, measured in logarithmic form, including all spending by foreign tourists, whether paid to local airlines or other national carriers. The summation of foreign tourists shows the international tourist arrivals. The log-transformed values of the total number of tourists for a specified area serve as tourist arrival indicators.

This set of variables, as Croes and Rivera, Mahadevan and Suardi, and Lei et al. argue, reflects both the chronological and economic depth of capturing the impacts of tourism activity in terms of its volume benefit for estimations [8, 15, 16].

Control Variables

To refine the model, these variables serve as inputs which, according to the objective of the study, lead to improved precision:

Per capita income, which serves as a universal alternative measure of the level of economic progress.

Annual fixed effects, to capture unexplained uniform global or regional shocks or trends affecting all countries in t simultaneously.

These aim to address the unobserved or exclusive general environment that defines the impact of the controls on the economic context relative to timeframe differences.

Estimation Strategy

The approach contains both fixed and random effects for the two-way panel regression analysis. Decision on model specification is based on the Hausman test result.

Should the Hausman test p-value < 0.05, then the Fixed Effects Model is adopted since there are pertinent differences among the two models.

A p-value greater than 0.05 indicates the use of a Random Effects Model is appropriate since individual effects are not correlated with the explanatory variables.

Based on the results of the Hausman test, it was determined that the p-value is less than 0.05, which implies that the Fixed Effects Model is, indeed, consistent and more appropriate for estimating the relationship between indicators of tourism and poverty/income inequality.

In this study, in order to understand the effect of tourism on income distribution and poverty alleviation, we examined panel data among 134 countries, and to make the data sustainable for analysis, this paper has used a long format. In line with Li et al., Croes and Rivera, and Renuka Mahadevan & Sandy Suardi, tourism is quantified in this study using tourism receipts [8, 15].

The varying sizes of the economies must be taken into consideration when employing a group of nations under a single analytical framework. This variable explains expenditures by international inbound visitors, including payments to national carriers for international transport. Computing comparable, reliable data on poverty and income inequality for a set of countries using the same benchmark is a formidable task [16].

We utilize the headcount poverty ratio (P_0), which represents the percentage of the population living in poverty, as the most widely used indicator of poverty [15]. Additionally, our article analyzes the impact of tourism not only on the incidence of poverty (headcount ratio) but also on income inequality (Gini coefficient). The Gini index obtained from the World Bank database is taken as an indicator of income inequality [5, 11].

Over the past 20 years, tourism has been crucial to the economy. It is one of the industries that has brought in the most revenue, creating jobs, supporting the building, transportation, and commerce industries, and encouraging infrastructure development. All the mentioned factors are the result of increasing tourist arrivals, and according to many empirical research papers, this study will examine the number of arrivals and how it impacts poverty alleviation and income distribution [5, 15, 21].

Researchers often study GDP per capita as a key economic indicator to assess the average economic well-being of individuals in a country. This indicator is widely used and valuable, which emphasizes the importance of considering a range of indicators and contextual factors to gain a more nuanced understanding of a country's economic and social situation [17].

A-priori expectations: Considering the variable of interest, we focus on tourism receipts. If the tourism receipts ratio increases, the poverty level should decrease, which means there is a negative correlation between the two variables. Next is the relationship between income distribution and poverty receipts. If foreign expenditures rise in a city, it will benefit locals and reduce income inequality. The control variable is also expected to be negative, as the number of arrivals increases, the level of poverty decreases.

Hypothesis:

According to all research papers, the topic is divided into two categories—whether there is a positive effect of tourism on poverty alleviation and income distribution, or there is no effect of tourism in reducing poverty.

H_0: Tourism growth reduces the number of poor people (headcount poverty).

H_1: Tourism growth fails to reduce the number of poor people (headcount poverty).

H_0: Income distribution is affected by tourism growth (pro-poor tourism).

H_1: Income distribution is not affected by tourism growth (pro-poor tourism).

Hypothesis Results

The following conclusions are made pertaining to the hypotheses after the analysis of the regression results provided in the Results and Discussion section.

H_0: The growth in tourism decreases the number of people living in poverty (headcount ratio of poverty).

– Accepted. The coefficient on tourism receipts was negative and statistically significant, which means that more income from tourism corresponds with lower poverty levels. H_1: There is no effect of tourism growth on the reduction of the number of poor people.

– Rejected. There is evidence suggesting a poverty-reduction impact due to tourism receipts.

H_0: Effects of tourism growth on income distribution mean that tourism growth is pro-poor.

– Accepted. The regression of the Gini coefficient showed a notable relation to tourism receipts, which means that inequality gaps within society are economically impacted by tourism activities.

H_1: There are no effects of changes in inequality due to tourism growth.

– Rejected. There is statistical evidence that income and its distribution across residents are subject to changes due to tourism.

Variable		Mean	Std. dev.	Min	Max	Observations
countr~e	overall	.	.	.	.	N = 0
	between		.	.	.	n = 0
	within		.	.	.	T = .
countr~d	overall	1067.5	38.70547	1001	1134	N = 804
	between		38.82654	1001	1134	n = 134
	within		0	1067.5	1067.5	T = 6
year	overall	2017.5	1.708888	2015	2020	N = 804
	between		0	2017.5	2017.5	n = 134
	within		1.708888	2015	2020	T = 6
headco~t	overall	8.554348	16.49663	0	89.1	N = 414
	between		23.95598	0	88.6	n = 100
	within		1.949056	-3.895651	21.00435	T-bar = 4.14
arrivals	overall	1.42e+07	3.08e+07	5400	2.18e+08	N = 709
	between		2.90e+07	6120	1.93e+08	n = 126
	within		8533298	-9.18e+07	4.67e+07	T = 5.62698
gdppc	overall	22070.38	30070.61	435.761	199382.8	N = 798
	between		30054.37	485.1634	182375.2	n = 133
	within		2577.374	-12003.02	39078.02	T = 6
gini	overall	35.3401	7.057147	23.2	59.1	N = 414
	between		7.201695	24.56667	59.1	n = 100
	within		1.085521	29.10676	40.2901	T-bar = 4.14
tourec	overall	9.75e+09	2.37e+10	1500000	2.42e+11	N = 623
	between		2.24e+10	2650000	2.10e+11	n = 111
	within		6.42e+09	-1.16e+11	4.20e+10	T = 5.61261

Figure 1: International Tourist Arrivals by Country (2015–2020)

Figure 1 provides descriptive statistics for a panel dataset that was created using World Bank indicators for 134 countries from 2015 to 2020, amounting to 804 observations. The dataset contains variables such as headcount poverty ratio, international tourist arrivals, GDP per capita, Gini index, and tourism expenditure. Each variable is accompanied by its average, standard deviation, minimum and maximum values, in addition to between and within variation figures. The dataset is unbalanced due to data availability inconsistencies among countries for particular years, with some variables such as tourism expenditure having far fewer observations (N = 111). The data illustrate significant differences between countries; for example, GDP per capita has a notable range from $435.76 to $199,382.8, and international arrivals from just over 6,000 to more than 219 million. Such variation demonstrates the economic and social differentiation within the sampled countries and serves as reasoning to study the linkage of tourism with economic factors like poverty and inequality.

RESULTS AND DISCUSSION

This section analyzes and evaluates the results of empirical models built to examine the interplay between tourism and poverty, as well as other inequalities in income distribution. Both fixed and random effects models were applied, but following the results from the Hausman test and the notable changes of important variables over time, it was determined that the fixed effects model best suited the analysis.

In the first regression model, the focus is set towards estimating the impact of international tourist arrivals and the value of tourism on the poverty headcount ratio. According to the regression results presented in Table 3:

There exists a positive correlation that is statistically significant between international tourist arrivals and poverty. A 1% increase in the number of arrivals is associated with a 0.027-unit increase in the headcount ratio, ceteris paribus.

Conversely, tourism receipts have an equally negative and statistically significant impact on poverty. A 1% increase in tourism receipts corresponds to a 0.04-unit decline in the headcount ratio, holding all other things constant.

These conclusions imply that an increase in tourism by itself does not result in poverty alleviation and could even exacerbate the issue; however, when the earnings from tourism are kept and spent domestically, they play a greater role in poverty alleviation.

Hence, the null hypothesis that "there exists tourism growth which reduces poverty headcount ratio" has been accepted. The alternative hypothesis is disproved.

Impact of Gini Coefficient on Tourism's Effect on Income Distribution

The second regression measures the effect of tourism indicators on income distribution using the Gini index. The results are illustrated in Table 4:

The regression coefficient corresponding to the variable of tourist arrivals was found to be positive. The statistical results show that a 1% increase in arrivals results in a 0.014-unit rise in the Gini index, reflecting an upsurge in inequality.

Conversely, the correlation of income from tourism was found to be negative and significant with regard to a Gini index higher than baseline inequality. When tourism receipts increase by 1%, the Gini coefficient declines by 0.011 units.

This suggests that relative to local income, a proportionately greater share of income from tourist arrivals goes to the foreign population or businesses, while local spending decreases socioeconomic disparity. Therefore, the null hypothesis is accepted which states that income distribution is not affected in any way by growth in tourism. The alternative hypothesis is not accepted.

These findings capture the intricate interaction between tourism and socio-economic factors. The number of tourists, calculated in terms of arrivals, does not seem to help cure poverty and fuels inequality instead. On the other hand, well-managed and retained tourism revenues can serve to aid in poverty reduction and income disparity.

For policymakers, this points out the need to develop plans that aim at more than just increasing the number of tourists to the area. Focus should be directed towards:

Encouraging active local participation and ownership in tourism.

Formulation of community-centered tourism policies.

Strengthening tourism interrelations with other domestic sectors so as to enhance the multiplier effect.

With these strategies in place, the tourism sector can foster sustainable development instead of simply being a driver of economic growth. In this research, two key explanatory variables are constructed to represent the scale and economic depth of tourism activities:

lgarrvls (log of arrivals): This variable represents the natural logarithm of international arrivals of tourists. The change to logarithmic form is applied to control for skewness, variances, and to interpret the coefficients as elasticities in the regression framework. This variable acts as a proxy for the level of tourism activity in each country.

lgtours (log of tourism receipts): This variable refers to the total international receipts of tourism in logarithmic form. It captures the total income received from non-resident tourists, such as expenses on hotel services, meals, local transport, and various entertainment activities. Like lgarrvls, it is also transformed to logarithmic form in order to better fit the model and hence accept greater distribution. This variable is used to assess the economic burden of tourism expenditure of non-residents in the national economy.

Both variables were put into logarithmic form to allow comparison measures across countries of different sizes and economic scales while maintaining uniform clarity. The log change also alleviates concerns associated with heteroscedasticity, which is usual in economic data on a cross-country basis.

Headcount = $B_0 + B_1 \text{lgarrvls} - B_2 \text{lgtours}$

In order to analyze the given data, we have to identify which regression should be used, whether it is the random effects approach or the fixed effects approach. But before starting, we should test xttest cid year to ensure that it is strongly balanced. The cleaned data gave such a result after analysis, taking into consideration that it is a random effects GLS regression.

```
Random-effects GLS regression                   Number of obs     =        335
Group variable: cid                             Number of groups  =         84

R-squared:                                      Obs per group:
     Within  = 0.0557                                         min =          1
     Between = 0.3163                                         avg =        4.0
     Overall = 0.0918                                         max =          6

                                                Wald chi2(2)      =      36.35
corr(u_i, X) = 0 (assumed)                      Prob > chi2       =     0.0000

------------------------------------------------------------------------------
   headcount | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
    lgarrvls |   3.257656   .9360555     3.48   0.001     1.423021    5.092291
      lgtour |  -5.417837   1.041467    -5.20   0.000    -7.459074     -3.3766
       _cons |   84.21645   11.52865     7.30   0.000     61.62071    106.8122
-------------+----------------------------------------------------------------
     sigma_u |  19.037999
     sigma_e |  2.3079152
         rho |  .98551691   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Figure 2: Regional Distribution of Tourism Receipts

The analyzed random-effects GLS regression estimating the effect of tourism on poverty levels, operationalized as the headcount ratio, is shown in Figure 2. It contains a total of 335 observations from 84 countries. The model has an R-squared value indicating that 31.6% of the variance between countries is captured, compared to only 5.6% within countries over time.

The coefficient for log-transformed international tourist arrivals has a positive value and is economically significant, with $\beta = 3.26$, $p < 0.01$, which implies that a greater number of tourists may be associated with higher poverty levels.

On the other hand, tourism expenditure (also log-transformed) displayed a significant negative coefficient, $\beta = –5.42$, $p < 0.01$, showing that greater expenditure on tourism leads to a decrease in poverty levels.

The model's overall significance is confirmed with the Wald chi-squared test ($\chi^2 = 36.35$, $p = 0.000$). The value of rho, rising to a total of 0.99, indicates that most of the variation is due to differences across countries rather than within countries over time.

```
Fixed-effects (within) regression               Number of obs     =        335
Group variable: cid                             Number of groups  =         84

R-squared:                                      Obs per group:
     Within  = 0.0574                                         min =          1
     Between = 0.2752                                         avg =        4.0
     Overall = 0.0728                                         max =          6

                                                F(2, 249)         =       7.58
corr(u_i, Xb) = 0.0420                          Prob > F          =     0.0006

------------------------------------------------------------------------------
   headcount | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
    lgarrvls |   2.744648    .991357     2.77   0.006     .7921335    4.697162
      lgtour |  -4.059567   1.121133    -3.62   0.000    -6.267679   -1.851456
       _cons |   55.59849   12.21361     4.55   0.000     31.54332    79.65365
-------------+----------------------------------------------------------------
     sigma_u |  22.570028
     sigma_e |  2.3079152
         rho |  .98965196   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(83, 249) = 161.15                   Prob > F = 0.0000
```

Figure 3: Effects of International Tourism on Poverty Headcount Ratio: Fixed Effects Regression Results

The Fixed Effects (within) regression model presented in Figure 3 analyzes how international tourism affects the headcount ratio of poverty in terms of its magnitude (how ‘deep’ poverty is) as a ratio. The analysis incorporates panel data from 84 countries over six years (2015–2020), amounting to 335 observations. The model includes two primary independent variables: the logarithm of international tourist arrivals (lgarrvls) and the logarithm of tourism expenditure (lgtour). The cross-sectional variable is country ID, and time-invariant country-specific effects are also accounted for (cid).

The regression results indicate that an increase in lgarrvls is associated with an increase in poverty levels, suggesting that greater tourist arrivals positively correlate with poverty. This relationship is statistically significant, with a coefficient of 2.74 ($p = 0.006$).

On the other side of the spectrum, lgtour has a statistically significant negative coefficient of –4.10 ($p = 0.000$), indicating that greater tourism receipts are effective in reducing poverty. The constant term (_cons) is statistically equal to 55.6, which represents the poverty headcount ratio in the absence of the specified independent variables.

The R-squared (within) value is 0.057, meaning approximately 5.7% of the variation in poverty over time within countries is explained by the model. The overall R-squared is 0.0728. The F-test for model significance yields 7.58 ($p < 0.001$), confirming the overall significance of the regression.

The variance decomposition statistics reveal a high rho value of 0.986, indicating that most of the variation in the dependent variable is due to differences across countries rather than within-country changes over time.

Overall, this Fixed Effects regression analysis confirms the hypothesis that tourism receipts help in reducing poverty, whereas an increase in tourist arrivals alone does not benefit the poorer population unless it is accompanied by adequate spending and targeted policy.

```
                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |      FEM          REM         Difference       Std. err.
-------------+----------------------------------------------------------------
    lgarrvls |   2.744648     3.257656       -.5130084        .4352528
      lgtour |  -4.059567    -5.417837        1.358269         .527498
------------------------------------------------------------------------------
                          b = Consistent under H0 and Ha; obtained from xtreg.
           B = Inconsistent under Ha, efficient under H0; obtained from xtreg.

Test of H0: Difference in coefficients not systematic

    chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
            =  27.82
Prob > chi2 = 0.0000
```

Figure 4: Hausman Test Comparing Fixed and Random Effects Models

Figure 4 shows the results of the Hausman specification test aimed at selecting the correct model — Fixed Effects (FEM) or Random Effects (REM) — for the panel data analysis econometric model. The test uses coefficient estimates from both models and determines whether the Random Effects estimator is consistent and efficient, or whether Fixed Effects is to be preferred.

In this analysis, the test compares the coefficients for two independent variables: the log of tourist arrivals (lgarrvls) and the log of tourism receipts (lgtour). For both models, the difference in coefficients for lgarrvls between FEM and REM is –0.5130, while for lgtour the difference is 1.3583. The differences are computed alongside their standard errors and assessed using a chi-square distribution.

The chi-square statistic is 27.82 with 2 degrees of freedom, and the p-value is 0.0000, which is extremely significant. This leads to a rejection of the null hypothesis (H_0), which in this case postulates that the difference in coefficients is not systematic (meaning REM is appropriate).

Hence, the conclusion is that the Fixed Effects model is more appropriate for this dataset. To put it simply, the results of the Hausman test indicate that there are indeed inherent unobserved factors specific to countries that are likely to correlate with the regressors (in the case of lgarrvls and lgtour), making the estimates derived from Random Effects unreliable.

Because of this, using the Fixed Effects model becomes justified and more appropriate for examining the relationship between tourism and poverty in this panel dataset. With this, the dependability of the study’s regression analysis increases, while the likelihood of deviation from the reality of how tourism impacts poverty alleviation in the countries of observation decreases.

Gini coefficient = $B_0 + B_1 \mathrm{lgarrvls} - B_2 \mathrm{lgarrvls}$

Furthermore, we have to examine the effect of tourism on income distribution, and what outcomes it is leading to. First, we would test the Random Effects GLS regression.

Random-effects GLS regression — Number of obs = 335
Group variable: cid — Number of groups = 84

R-squared: Within = 0.0399; Between = 0.0029; Overall = 0.0349
Obs per group: min = 1; avg = 4.0; max = 6

Wald chi2(2) = 6.42
corr(u_i, X) = 0 (assumed) — Prob > chi2 = 0.0403

gini	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
lgarrvls	1.100327	.4449496	2.47	0.013	.2282415	1.972412
lgtour	-.980599	.4897082	-2.00	0.045	-1.94041	-.0207886
_cons	41.26385	5.424556	7.61	0.000	30.63192	51.89579
sigma_u	7.374243					
sigma_e	1.2075398					
rho	.97388584	(fraction of variance due to u_i)				

Figure 5: Random Effects GLS Regression Table

Next comes the Fixed Effects model.

Fixed Effects Regression on Tourism and Poverty: This section explains the results of a Fixed Effects regression model. The analysis for this model was conducted considering the association between tourism and the poverty headcount ratio.

Key factors included are:

the logarithm of foreign tourist arrivals (lgarrvls),

tourism expenditure (lgtourex),

and the country's per capita GDP.

Regression results show that an increase in the number of tourists contributes positively, and is statistically significant, to poverty levels, indicating that growth in tourist numbers does not help the poorer population.

On the other hand, expenditures on tourism have a significant negative effect, which means that growth in income paid by tourists helps to alleviate poverty to a greater extent.

This result shows a p-value less than 0.05, and as a consequence, it might appear as random; however, we preferred to use the Fixed Effects model due to inconstant variables.

Fixed-effects (within) regression — Number of obs = 335
Group variable: cid — Number of groups = 84

R-squared: Within = 0.0416; Between = 0.0099; Overall = 0.0407
Obs per group: min = 1; avg = 4.0; max = 6

F(2, 249) = 5.40
corr(u_i, Xb) = -0.3657 — Prob > F = 0.0051

gini	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
lgarrvls	1.476723	.5186946	2.85	0.005	.4551353	2.498311
lgtour	-1.158023	.5865953	-1.97	0.049	-2.313344	-.0027024
_cons	38.21952	6.390367	5.98	0.000	25.63346	50.80558
sigma_u	7.7902603					
sigma_e	1.2075398					
rho	.97653678	(fraction of variance due to u_i)				

Figure 6: Fixed Effects Regression on Poverty Headcount

This table displays the results of the Fixed Effects regression model that applies panel data from 84 countries between 2015–2020, with 335 total observations, and studies the impact of tourism indicators on the level of poverty in the world.

The two primary independent variables include the logarithm of international tourist arrivals (lgarrvls) and tourism receipts (lgtour).

Regression results suggest that a 1% increase in the number of tourists translates into a statistically significant increase in the poverty rate ($\beta = 2.74$, $p = 0.006$), which implies that an increase in visitor numbers does not single-handedly alleviate poverty.

On the contrary, tourism receipts exert a strong and notably negative effect ($\beta = -4.10$, $p < 0.001$), highlighting the fact that increased income from tourism indeed aids in poverty reduction when retained in the local economy.

The model further incorporates the impacts of country-specific effects, and the R-squared values denote that some part of the within-country variation over time is accounted for by these indicators.

Table 7: The Hausman Test for Model Selection

	Coefficients (b) FEM	(B) REM	(b-B) Difference	sqrt(diag(V_b-V_B)) Std. err.
lgarrvls	**1.476723**	**1.100327**	**.3763966**	**.2769741**
lgtourec	**-1.158023**	**-.980599**	**-.1774244**	**.3339265**

b = Consistent under H0 and Ha; obtained from **xtreg**.
B = Inconsistent under Ha, efficient under H0; obtained from **xtreg**.

Test of H0: Difference in coefficients not systematic

chi2(**2**) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= **8.82**
Prob > chi2 = **0.0122**

These outcomes support the assumption that to have a positive effect on poverty, the economic value accrued from tourism must be substantially available and equitably shared. The Fixed Effects model eliminates factors that remain constant over time for specific countries, thereby enabling a clearer perspective of the changes occurring within those countries over time. Unfortunately, the model is biased due to heteroscedasticity, which means that there are unexamined errors in the model that need to be addressed.

According to our first pooled regression, the following results occur:

Before interpreting the regression, we pay attention to the p-value, which is less than 0.05, indicating that the model is statistically significant.

There is a positive correlation between the two variables, and a 1 percent increase in the number of arrivals leads to a 3.257656 unit increase in the headcount ratio, keeping other variables constant.

The second variable shows a negative relationship and is also statistically significant, which permits interpretation: a 1 percent increase in tourism receipts leads to a 0.04 unit decrease in the headcount ratio.

The second regression explains how the number of arrivals and tourism receipts impact income inequality (Gini coefficient):

There is a positive relationship between income distribution and the number of arrivals, and the model is statistically significant. A 1 percent increase in the number of visitors results in a 0.014 unit increase in the Gini index, keeping all other variables constant.

This regression also shows a negative correlation between tourism receipts and income inequality, and the results are statistically significant: a 1 percent increase in tourism receipts leads to a 0.011 unit decrease in the Gini coefficient, ceteris paribus.

CONCLUSION

In this research, a fixed effects model was implemented in a panel data analysis to study the correlation between the growth of tourism and income inequality. The results provided a rather nuanced picture regarding the economic effects of tourism. On the bright side, while overall tourism expenditure does not have a remarkable impact on income inequality, the growth in the number of tourist arrivals has some modest impact due to the creation of seasonal employment opportunities. These positions, albeit short-lived, provide the low-income group an opportunity to earn some extra money and serve to slightly reduce income disparity, at least in the short run.

Moreover, tourism revenues have clearer potential for addressing income inequality in the context of poverty. Once the poor are given access to employment and business opportunities, especially in the tourism industry, their earnings are usually sufficient to go beyond mere subsistence levels. This can improve their living standards, enable access to education and healthcare, and stimulate local economic growth. However, the extent of these benefits largely depends on how well local communities are integrated into tourism activities.

There is, nevertheless, a concern that the revenue from tourism will not be fairly or automatically distributed. If no efforts are made to incorporate fair practices and comprehensive planning, a significant share of income from tourism may be channeled to external actors or a small group of stakeholders. Therefore, it is vital to advocate for community-based tourism projects and foster local participation throughout the tourism value chain.

Incorporating the local economy into tourism development is fundamental to augmenting its multiplier effect. This includes promoting the consumption of local goods and services, offering skill development opportunities to the local workforce, and creating an ecosystem conducive to the growth of small and medium-sized enterprises (SMEs). Ensuring decent working conditions and competitive wages is essential for effective and sustainable poverty alleviation.

As previously explained, tourism alone will not solve chronic income inequality; however, with proper and inclusive management, it can help alleviate poverty and contribute to a more equitable income distribution. All public policies and participation-driven interventions should focus on equitable allocation and targeted opportunity creation. Countries that seek to maximize the developmental benefits of tourism must ensure meaningful local engagement in tourism planning and execution. This inclusive approach is key to achieving broader economic and social development goals.

LIST OF USED LITERATURE

1. Odhiambo, N. M. (2021). Tourism development and poverty alleviation in sub-Saharan African countries: an empirical investigation. Development Studies Research, 8(1), 396–406. https://doi.org/10.1080/21665095.2021.2007782
2. Medina-Muñoz, D. R., Medina-Muñoz, R. D., & Gutiérrez-Pérez, F. J. (2016). The impact of tourism on poverty alleviation: An integrated research agenda. Journal of Sustainable Tourism, 24(3), 270–287. https://doi.org/10.1080/09669582.2015.1071383
3. Copeland, B. R. (1991). Tourism, welfare and de-industrialization in a small open economy. Economica, 58(232), 515–529. https://doi.org/10.2307/2554519
4. Bartik, T. J. (1991). Who benefits from state and local economic development policies? W.E. Upjohn Institute for Employment Research. https://doi.org/10.17848/9780585223940
5. Blake, A. (2008). Tourism and income distribution in East Africa. International Journal of Tourism Research, 10(6), 511–524. https://doi.org/10.1002/jtr.692
6. Ashley, C., & Roe, D. (2002). Making tourism work for the poor: Strategies and challenges in southern Africa. Development Southern Africa, 19(1), 61–82. https://doi.org/10.1080/03768350220123882
7. Bowden, J. (2005). Pro-poor tourism and the Chinese experience. Asia Pacific Journal of Tourism Research, 10(4), 379–398. https://doi.org/10.1080/10941660500363716
8. Croes, R., & Rivera, M. A. (2017). Tourism's potential to benefit the poor: A social accounting matrix model applied to Ecuador. Tourism Economics, 23(1), 29–48. https://doi.org/10.5367/te.2015.0536
9. Saayman, A., Rossouw, R., & Krugell, W. (2012). The impact of tourism on poverty in South Africa. Development Southern Africa, 29(3), 462–477. https://doi.org/10.1080/0376835X.2012.706040
10. Kim, H. B., Song, H., & Pyun, J. H. (2016). Tourism's impacts on regional poverty reduction: Evidence from South Korea. Tourism Management, 53, 29–41. https://doi.org/10.1016/j.tourman.2015.09.009
11. Croes, R., & Vanegas, M. (2008). Cointegration and causality between tourism and poverty reduction. Journal of Travel Research, 47(1), 94–103. https://doi.org/10.1177/0047287508318907
12. Wen, J., & Tisdell, C. (1997). Tourism and China's development: Policies, regional economic growth and ecotourism. World Development, 25(1), 55–70. https://doi.org/10.1016/S0305-750X(96)00083-2
13. Tosun, C., Timothy, D. J., & Öztürk, Y. (2003). Tourism growth, national development and regional inequality in Turkey. Journal of Sustainable Tourism, 11(2–3), 133–161. https://doi.org/10.1080/09669580308667200
14. World Bank. World Development Indicators. Retrieved from https://data.worldbank.org
15. Mahadevan, R., & Suardi, S. (2017). Panel evidence on the impact of tourism growth on poverty, poverty gap and income inequality. Current Issues in Tourism. https://doi.org/10.1080/13683500.2017.1375901
16. Haughton, J., & Khandker, S. R. (2009). Handbook on Poverty and Inequality. The World Bank.
17. Wang, F., Du, L., Tian, M., Liu, Y., & Zhang, Y. (n.d.). Sustainability of rural tourism in poverty reduction: Evidence from panel data of 15 underdeveloped counties in Anhui Province, China. Beijing Forestry University.
18. Springer Nature (journals, books): https://link.springer.com
19. Web of Science (reference and citation data): https://www.webofscience.com
20. EBSCOhost (journals, books): https://search.ebscohost.com/Login.aspx
21. Oviedo-García, M. Á., González-Rodríguez, M. R., & Vega-Vázquez, M. (n.d.). Does Sun-and-Sea All-Inclusive Tourism Contribute to Poverty Alleviation and/or Income Inequality Reduction? The Case of the Dominican Republic.

YASHIL
IQTISODIYOT&TARAQQIYOT
Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

6-Maxsus son. Bakalavr talabalarining maqolalari to‘plami

Mazkur jurnalda maqolalar chop etish uchun quyidagi havolalarga
maqola, reklama, hikoya va boshqa ijodiy materiallar yuborishingiz mumkin.
Materiallar va reklamalar pullik asosda chop etiladi.
El.Pochta: sq143235@gmail.com
Bot: @iqtisodiyot_77
Tel.: 93 718 40 07

Jurnalga istalgan payt quyidagi rekvizitlar orqali obuna bo‘lishingiz mumkin. Obuna bo‘lgach, @iqtisodiyot_77 telegram sahifamizga to‘lov haqidagi ma’lumotni skrinshot yoki foto shaklida jo‘natishingizni so‘raymiz. Shu asosda har oygi jurnal yangi sonini manzilingizga jo‘natamiz.

““Yashil” iqtisodiyot va taraqqiyot” jurnali 03.11.2022-yildan
O‘zbekiston Respublikasi Prezidenti Adminstratsiyasi huzuridagi
Axborot va ommaviy kommunikatsiyalar agentligi tomonidan
№566955 reyestr raqami tartibi bo‘yicha ro‘yxatdan o‘tkazilgan.
Litsenziya raqami: №046523. PNFL: 30407832680027

Manzilimiz: Toshkent shahar, Mirzo Ulug‘bek tumani
Kumushkon ko‘chasi, 26-uy.

Jurnal sayti: https://yashil-iqtisodiyot-taraqqiyot.uz