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Effect of International Tourism on Poverty: Evidence from Developing and Emerging Countries

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Abstract

This article aims to determine the impact of international tourism on poverty in 28 developing and emerging countries from 2005-2020. The Driscoll-Kraay standard errors method was used in the quantitative analysis. Unlike previous studies, this study provides concrete answers to conflicting debates about tourism development and poverty reduction. Our results robustly conclude that international tourism helps to reduce poverty perspective in countries. Specifically, more enormous tourism revenues and higher numbers of international tourists will lead to lower poverty rates in host countries. In addition, the results also emphasize the role of institutional quality in poverty reduction. Research shows that good institutions in the host country help reduce poverty. These findings may provide policy implications regarding future tourism development and poverty reduction in developing countries and emerging economies.

Keywords

International tourist, Tourism revenue, Poverty reduction, Institutional quality, Developing countries, Emerging economies

JEL Classification

I32, O11, O19

Introduction

Poverty and poverty reduction are great concerns for governments. Basically, poverty is often analyzed using monetary quantitative levels, such as the identification of the poverty line. At the macro level, poverty has generated many great policy debates that have lasted for decades (Jo, 2013). In recent decades, tourism development has been considered a source of poverty alleviation in host countries (Scheyvens, 2007; Harrison, 2008). Tourism has been recognized as a factor that promoted economic growth (Brida et al., 2016; Tung, 2021; Enilov & Wang, 2022), created new jobs, and delivered great potential opportunities for poverty alleviation (Croes, 2014; Folarin & Adeniyi, 2020; Torabi et al., 2020; Winter & Kim, 2020; Tung & Thang, 2022). There have been several previous studies aimed at clarifying the relationship between tourism and poverty; however, this topic has not yet had consistent results; not only do there exist different but also contradictory views (Saayman et al., 2012; Croes, 2014; Kim et al., 2016; Mahadevan & Suardi, 2019; Dossou et al., 2023).

Some empirical results confirm that tourism helped poor households earn money from international visitors enough to bring their families passed the poverty line (Saayman et al., 2012; Knight et al., 2017). Although some studies unveiled that tourism helped reduce poverty, others denied this evidence (Croes & Vanegas, 2008). Furthermore, some arguments are concerned that tourism growth can bring great benefits to some people but cause inequality because of the increasing larger gap between rich and poor people (Wattanakuljarus & Coxhead, 2008). Some studies included many question marks for their findings, for example ignoring relative poverty or using missing databases. Therefore, governments have difficulty providing appropriate policies to reduce poverty. Many previous studies have focused on the impact of tourism on poverty or income inequality, but there have been few studies that have delved into the effects of institutional quality on the relationship between tourism and reducing poverty.

Our current research focuses on developing countries in light of the impact of tourism growth on poverty reduction (Mahadevan & Suardi, 2017), as this is an important issue affecting progress, and social justice needs to be clarified more to have appropriate policy implications. Futhermore, the results of this paper will also answer more clearly about the impact of institutions as a driving force to help reduce poverty. The Driscoll-Kraay standard errors method is an advantage one which is used for the estimation process. We subject both tourism development and institutional quality to the econometric function of poverty, aiming to determine the impact of international tourism

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on poverty in a panel of 28 developing countries emerging from 2005 to 2020.

Totally, our research provides three contributions to the current literature. First, the result is empirical evidence that shows the clearest relationship between tourism development and poverty reduction based on the newest datasets. Second, we broadened the scope of the study to developing and emerging countries because these countries had a high prevalence of poverty, but tourism has robustly increased in recent years.

The structure of this paper is arranged into five sections. Section 2 presents an overview of the relevant literature. Section 3 includes both data description and methodology. The results are discussed in Section 4. Finally, some policy implications are presented.

Theory and literature review

The relationship between tourism and poverty reduction

In profoundly integrated world nowadays, countries increasingly benefit from the development of international tourism to diversify revenue sources, promote economic growth, create jobs for people, and increase foreign exchange earnings (Brida et al., 2016; Ajogbeje et al., 2017). Currently, researchers often choose to study the impact of tourism on economic growth, while the impact on people with low incomes is a less research-focused direction (Scheyvens, 2009; Winters et al., 2013). When studying the impact on poverty, the research results are divided into two main groups: one is the impact of tourism growth on income inequality among population classes, and the other is the influence tourism has on poverty reduction in developing countries (Saayman et al., 2012; Croes, 2014; Croes & Rivera, 2017; Njoya & Seetaram, 2018).

There are many ways to study the impact of tourism on poverty reduction, including approaches through foreign exchange earnings, tax collection, and income generation for residents who benefit from services catering to tourists (Alam & Paramati, 2016; Njoya & Seetaram, 2018). As the number of international visitors increases, social welfare will increase and pull many other industries to develop, so the increase in foreign exchange will support local poverty reduction (Njoya & Seetaram, 2018). Attracting tourists will contribute a large amount of taxes to the government; this will be the driving force for economic development, building infrastructure to serve tourism and society; the government also has the resources to improve education and healthcare, increase social welfare, redistribute income and thereby reduce poverty (Alam & Paramati, 2016; Njoya & Seetaram, 2018). As tourism develops, many workers are required to serve this industry, so income from wages will be an essential channel for poverty reduction. Residential areas with tourist attractions will benefit greatly and quickly, benefiting many classes of residents and workers (Dwyer & Thomas, 2012; Enilov & Wang, 2022).

Related studies

The link between tourism growth and poverty reduction has received a lot of attention not only from academics but also from policymakers. Previous studies that have been done on the role of tourism development in poverty alleviation could be divided into two main groups. The first group showed that tourism helped to reduce poverty. The second group argued that tourism had a negative or no effect on poverty reduction in the host countries. The relationship between tourism development and poverty has been investigated by some recent studies below.

Blake et al. (2008) used the CGE model for Brazil to assess the impact of tourism on the income of all classes of the population. The results confirmed that tourism delivered benefits for households and helped to reduce poverty. Wattanakuljarus and Coxhead (2008) found that the growth of inbound tourism demand in Thailand increased total households' income but reduces income distribution among the poor and the richest people of agricultural and non-agricultural workers. Saayman et al. (2012) identified the potential impact of tourism on poverty in South Africa using the Applied general equilibrium (AGE) model and concluded that tourism had little benefits in the short run. According to the empirical results, a 10% increase in tourism would not bring any significant benefits to the lowest-income households. Scheyvens and Russell (2012) compared the impact of small and large tourism businesses on poverty reduction and found that poverty has increased in Fiji, despite an increase in the number of tourist arrivals. This finding unveiled poor linkages between tourism and the economy and a high reliance on tourism on imported products. Croes (2014) examined whether tourism spending reduced the proportion of people below the poverty line in Nicaragua and Costa Rica and found that tourism did not have an impact on the poor in Costa Rica.

Kim et al. (2016) investigated the relationship between tourism and poverty development in a group of developing countries and identified that spending on tourism did not significantly affect poverty reduction in all developing countries in the sample. The study concluded that only the least developed countries had reduced their poverty ratios. Kebede and Bayeh (2017) calculated the effect of tourism in combating poverty in Ethiopia and found that tourism development was not consistent with poverty alleviation and the living standards of people in the study sample. The study of Njoya and Seetaram (2018) indicated that the impact of tourism development on the poverty gap in Kenya is negative.

When examining the relationship between tourism and poverty reduction in Mexico, Garza-Rodriguez (2019) found that there was a long-term relationship between international tourism and poverty reduction in Mexico. Specifically,

the empirical evidence presents that a 1% increase in international tourism leads to household consumption per capital increasing by 0.46% in the long run. However, in the short term, a 1% increase in international tourism leads to a 0.11% increase in household consumption. Mahadevan and Suardi (2019) examined the impact of tourism growth on poverty, poverty gap, and income inequality in 13 economies over the period 1995–2012. The results found that there was little evidence that tourism reduced poverty rates. However, the study provided evidence to suggest that tourism reduced the poverty gap. The poor people could earn more money and enough to push them over the poverty line.

Zhao and Xia (2020) examined the relationship between tourism and poverty in China and found that tourism had a statistically significant positive effect on poverty reduction. Folarin and Adeniyi (2020) found that tourism development significantly reduced poverty in 38 African countries. Torabi et al. (2020) analyzed the role of tourism in poverty alleviation in rural areas in Iran and found that this service sector could reduce poverty in these areas. Dossou et al. (2023) examined the link between tourism, quality of governance, and poverty reduction in Latin America in the period 2003–2015. The study concluded that tourism development exacerbated poverty, despite the quality of tourism and governance being found to have complementary effects on poverty alleviation. The previous studies are summarized by the author in Table 1.

Table 1. A brief review of the relationship between tourism and poverty.

Studies	Regions and Periods	Method	Results
Steiner (2006)	Egypt and the Middle East (2003-2005)	Qualitative content analysis	The development of tourism accompanied by institutions will bring benefits to the whole society, including improved poverty.
Blake et al. (2008)	Brazil	CGE model	Tourism could help reduce poverty.
Wattanakuljarus & Coxhead (2008)	Thailand (1998–2005)	CGE model	Tourism growth increases total household income but worsens income distribution.
Saayman et al. (2012)	South Africa	Social Accounting Matrix	Tourism did not significantly bring benefits to the lowest income households.
Scheyvens & Russell (2012)	Fiji (1996–2017)		Poverty increased in the country, despite increased tourist arrivals
Croes (2014)	Nicaragua and Costa Rica (1980-2010)	ECM model	Tourism didn't seem to matter to poor people
Kim et al. (2016)	69 Sub-Saharan countries (1995–2012)	OLS, FEM, REM	Spending on tourism didn’t significantly affect poverty reduction
Kebede & Bayeh (2017)	Ethiopia	ANOVA	Tourism development was not suitable for poverty alleviation and raising the living standards of households.
Njoya & Seetaram (2018)	Kenya (2003-2015)	CGE model	The impact of tourism development on the poverty gap and severity was negative.
Mahadevan & Suardi (2019)	13 tourism-intensive economies (1995–2012)	PVAR	Realizing that there was faint evidence to conclude that tourism reducing poverty rates.
Garza-Rodriguez (2019)	Mexico (1980–2017)	ARDL	A 1% increase in the number of international tourists leaded to per capita consumption of households increases by 0.46%.
Zhao & Xia (2020)	China (1999–2014)	GMM	Tourism had a positive impact on poverty status.
Folarin & Adeniyi (2020)	Africa (1996–2015)	GMM	Tourism development significantly reduced poverty.
Torabi et al. (2020)	Iran (2017)	Qualitative content analysis	Tourism helps reduce poverty in rural areas.
Tung & Cuong (2020)	Vietnam	FEM, REM	Tourism has a negative and significant impact on poverty.
Dossou et al. (2023)	Latin America (2003–2015)	GMM, PCSE	Tourism development exacerbates poverty.

Source: Authors' own processing based on previous studies.

Methodology and data source

Based on the theoretical framework and previous studies (Mahadevan & Suardi, 2019; Folarin & Adeniyi, 2020; Zhao & Xia, 2020), we propose the empirical models below. Where we use two different dependent variables representing poverty: The first one is the poverty gap (at $6.85 a day) and the second one is the proportion of poverty people (poverty headcount ratio at $6.85 a day).

The dependent variables in the research model are the Poverty gap (POVG) and the Poverty rate (POVR). The lagged variables ($POVG_{t-1}$) and ($POVR_{t-1}$) are independent variables that represent the potential impact of poverty trends from previous years. Tourism is represented by two variables: the number of foreign tourists (TOURIST) and the revenue from international tourism (REVENUE). Institutional quality is the overall freedom index of

countries (INSTIT), meaning that a well-functioning institution will regulate the tourism market and maintain high economic growth rates (Yap & Saha 2013; Saha & Yap 2015; Gozgor et al., 2019).

$$POVG_{i,t} = \beta_0 + \beta_1 POVG_{i,t-1} + \beta_2 TOURIST_{i,t} + \beta_3 INSTIT_{i,t} + \beta_4 GDPPC_{i,t} + \beta_5 ELEC_{i,t} + \beta_6 SO_{i,t} + \beta_7 SCI_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$POVG_{i,t} = \alpha_0 + \alpha_1 POVG_{i,t-1} + \alpha_2 REVENUE_{i,t} + \alpha_3 INSTIT_{i,t} + \alpha_4 GDPPC_{i,t} + \alpha_5 ELEC_{i,t} + \alpha_6 SO_{i,t} + \alpha_6 SCI_{i,t} + \zeta_{i,t} \quad (2)$$

$$POVR_{i,t} = \psi_0 + \psi_1 POVR_{i,t-1} + \psi_2 TOURIST_{i,t} + \psi_3 INSTIT_{i,t} + \psi_4 GDPPC_{i,t} + \psi_5 ELEC_{i,t} + \psi_6 SO_{i,t} + \psi_7 SCI_{i,t} + \eta_{i,t} \quad (3)$$

$$POVR_{i,t} = \delta_0 + \delta_1 POVR_{i,t-1} + \delta_2 REVENUE_{i,t} + \delta_3 INSTIT_{i,t} + \delta_4 GDPPC_{i,t} + \delta_5 ELEC_{i,t} + \delta_6 SO_{i,t} + \delta_7 SCI_{i,t} + \xi_{i,t} \quad (4)$$

The variable representing the development of science and education is expressed in the number of articles and scientific works published internationally (SCI). The goals of poverty reduction will be influenced by many social aspects, such as economic instability, public services, education, and the indispensable role of scientific research (Zhou & Liu, 2019; Qin et al., 2021). Scientific research will represent the strong development of education, with the ability to develop science and technology to improve the operational capacity and production of the economy and reduce poverty.

The independent variable represents the level of development of society expressed as the percentage of people accessing the internet (SO). The majority of people can and do access the internet, representing the ability for everyone in the country to access markets, reduce transaction costs, and increase income, thereby reducing poverty (Galperin & Viecens, 2017; Mushtaq & Bruneau, 2019). Currently, the internet, as a tool to connect the world and enhance social interaction, is an essential social resource to improve jobs, increase income, develop educational levels, and reduce poverty (Alderete, 2019).

Electricity access (ELEC) is the level of infrastructure development in countries. The ability of people access energy, including the electricity sector, is essential when the supply is guaranteed and reliable at a reasonable price (Bielecki, 2002). This implies that access to energy at an affordable price is an excellent condition for economic development and poverty reduction. It helps countries have more sustainable economic development strategies, improving the population's lives (Karekezi et al., 2012; Kanchanaa & Unesakia, 2014; Wang et al., 2018).

Per capita income (GDPPC), expressed as people's living standards, is an essential variable in the analysis of poverty reduction (Folarin & Adeniyi, 2019). The measurement and data sources of the variables in the research models will be summarized and clarified in Table 2.

Table 2. Measure and data source of variables.

Variable	Definition	Source
POVG	Poverty gap at $6.85 a day (2017 PPP) (%)	World Development Indicators (World Bank, 2023)
POVR	Poverty headcount ratio at $6.85 a day (2017 PPP) (% of the population)	
TOURIST	International tourists (million people/year)	
REVENUE	International tourism, receipts (current US$)	
GDPPC	GDP per capital (thousand US$/person)	
ELEC	Access to electricity (% of the population)	
SO	Individuals using the Internet (% of the population)	
SCI	Scientific and technical journal articles (Thousand articles)	
INSTIT	Evaluate the effectiveness of the economy (1=lowest to 100=highest)	The Heritage Foundation (2023)

Source: Authors 'own

This study uses a panel dataset with a research scale from 28 developing and emerging economies on all continents of the world for the period 2005-2020. The countries include Armenia, Argentina, Belarus, Bolivia, Brazil, Bulgaria, China, Colombia, Costa Rica, Dominica Republic, Ecuador, El Salvador, Georgia, Honduras, India, Indonesia, Kazakhstan, Kyrgyz Republic, Mexico, Moldova, Mongolia, Russian Federation, Pakistan, Paraguay, Peru, Thailand, Turkey, Ukraine. Statistics of all variables are downloaded from the World Development Indicators (World Bank, 2023) and The Heritage Foundation (2023). The descriptive statistics of the research variables are presented in Table 3.

Table 3. Descriptive statistics of the variables in the study models.

Variable	Max	Min	Mean	Std. Dev.	Obs
POVG	54.4	0.2	14.20	11.42109	396
POVR	92.9	1.3	36.26	22.51	396
TOURIST	162.5	0.29	14.68	29.11	434
REVENUE	64.37	0.49	6.102	9.704	427
INSTIT	77.1	42.3	59.43	7.014	448
GDPPC	15.97	0.47	5.465	3.402	447
ELEC	100	67.5	95.43	7.945	443
SO	85.94	2.38	37.83	22.69	442
SCI	528.26	0.01	20.87	66.23	392

Source: Authors´own

Result

Correlation analysis

The Pearson Correlation matrix is used to check the correlation between the variables in the study models by estimated coefficients. Besides, the coefficients show the multicollinearity problem between the variables.

The correlation coefficient between POVG and TOURIST is negative (-0.0566<0) showing the negative relationship between poverty and international arrivals. If the number of international arrivals increases, it is expected to reduce poverty and vice versa. Similarly, the correlation coefficient between POVR and TOURIST (-0.0531<0) also indicates a negative relationship between Tourism and Poverty. Similarly, the correlation coefficient of variables POVG and REVENUE is -0.1698<0, and POVR and REVENUE are -0.1952 < 0. We can conclude a negative relationship between tourism and poverty. The more development in tourism, the lower level of the poverty rate.

Based on the coefficients of the correlation matrix, the relationships between institutional quality (INSTIT), the development of science and education (SCI), and poverty are positive. Otherwise, the relationships are negative in others. To find out whether the multicollinearity phenomenon or not, we consider the Variance Inflation Factors (VIFs) in Table 5.

Table 5. The multicollinear coefficient matrix in the research models.

Dependent variable: POVG		Dependent variable: POVG		Dependent variable: POVR		Dependent variable: POVR	
Variable	*VIF*	*Variable*	*VIF*	*Variable*	*VIF*	*Variable*	*VIF*
TOURIST	3.42	GDPPC	2.01	TOURIST	3.42	GDPPC	2.01
SCI	3.21	SO	1.83	SCI	3.21	SO	1.83
GDPPC	1.90	REVENUE	1.44	GDPPC	1.90	REVENUE	1.44
SO	1.88	SCI	1.37	SO	1.88	SCI	1.37
ELEC	1.37	ELEC	1.35	ELEC	1.37	ELEC	1.35
INSTIT	1.01	INSTIT	1.01	INSTIT	1.01	INSTIT	1.01
Mean VIF	2.13	Mean VIF	1.50	Mean VIF	2.13	Mean VIF	1.50

Source: Authors ‘own

The independent variables TOURIST and REVENUE have VIF coefficients with dependent variables ranging from 1.44 to 3.42, and the independent variables have VIFs < 10 and the mean values of VIFs at the levels from 1.50 to 2.13, so there is no multicollinearity problem between the variables. However, actual regression results and tests are needed to accurately assess the impact with different levels of significance. The following part of the regression analysis will give actual results.

Table 4. Pearson correlation matrixes between variables.

Variables	POVG	TOURIST	INSTIT	GDPPC	ELEC	SO	SCI
POVG	1.0000						
TOURIST	-0.0566	1.0000					
INSTIT	0.0874	-0.0587	1.0000				
GDPPC	-0.6130*	0.2705*	0.0887	1.0000			
ELEC	-0.5376*	0.2052*	0.1432*	0.4980*	1.0000		
SO	-0.5923*	0.0965	0.1362*	0.6296*	0.5268*	1.0000	
SCI	0.0590	0.7801*	-0.2025*	0.1137	0.0748	0.0862	1.0000
Variables	POVG	REVENUE	INSTIT	GDPPC	ELEC	SO	SCI
POVG	1.0000						
REVENUE	-0.1698*	1.0000					
INSTIT	0.0874	0.0996	1.0000				
GDPPC	-0.6130*	0.3470*	0.0887	1.0000			
ELEC	-0.5376*	0.1698*	0.1432*	0.4980*	1.0000		
SO	-0.5923*	0.1343*	0.1362*	0.6296*	0.5268*	1.0000	
SCI	0.0590	0.4958*	-0.2025*	0.1137	0.0748	0.0862	1.0000
Variables	POVR	TOURIST	INSTIT	GDPPC	ELEC	SO	SCI
POVR	1.0000						
TOURIST	-0.0531	1.0000					
INSTIT	0.1751*	-0.0587	1.0000				
GDPPC	-0.6599*	0.2705*	0.0887	1.0000			
ELEC	-0.4479*	0.2052*	0.1432*	0.4980*	1.0000		
SO	-0.5952*	0.0965	0.1362*	0.6296*	0.5268*	1.0000	
SCI	0.0560	0.7801*	-0.2025*	0.1137	0.0748	0.0862	1.0000
Variables	POVR	REVENUE	INSTIT	GDPPC	ELEC	SO	SCI
POVR	1.0000						
REVENUE	-0.1952*	1.0000					
INSTIT	0.1751*	0.0996	1.0000				
GDPPC	-0.6599*	0.3470*	0.0887	1.0000			
ELEC	-0.4479*	0.1698*	0.1432*	0.4980*	1.0000		
SO	-0.5952*	0.1343*	0.1362*	0.6296*	0.5268*	1.0000	
SCI	0.0560	0.4958*	-0.2025*	0.1137	0.0748	0.0862	1.0000

Note: *denoted at the significance at 5%. **Source:** Authors 'own

Panel regression analysis

For panel data regression, we apply the fixed-effect model (FEM) and random-effect model (REM) to estimate the study models, and Hausman tests for the selection of the better one in estimated results. For checking the validity of models, the Breusch-Pagan test is used for the phenomenon of heteroscedasticity, and the Wooldridge test is identified the serial correlation. All Hausman tests show Prob>chi2 = 0.0000, indicating that FEMs are the better ones. However, the diagnostic tests show that there has been heteroscedasticity and serial correlation in the FEM results. The following table shows the diagnostic tests for heteroscedasticity and serial correlation.

Table 6. Results of diagnostic tests for heteroscedasticity and serial correlation.

Dependent variable: POVG							
Model 1				Model 2			
Test	Error Process			Test	Error Process		
Modified Wald (χ2)	Heteroscedasticity	χ2(28) =2.1e+31	Prob>χ2 =0.0000	Modified Wald (χ2)	Heteroscedasticity	χ2(27) =4.8e+30	Prob>χ2 =0.0000
Wooldridge Test (F-test)	Serial correlation	F(1,24) = 22.575	Prob>χ2 =0.0001	Wooldridge Test (F-test)	Serial correlation	F(1,23) = 23.006	Prob>χ2 =0.0001
Dependent variable: POVR							
Model 3				Model 4			
Test	Error Process			Test	Error Process		
Modified Wald (χ2)	Heteroscedasticity	χ2(28) =4.8e+28	Prob>chi2 =0.0000	Modified Wald (χ2)	Heteroscedasticity	χ2(27) =5608.5	Prob>χ2 =0.0000
Wooldridge Test (F-test)	Serial correlation	F(1,24) =32.344	Prob>chi2 =0.0000	Wooldridge Test (F-test)	Serial correlation	F(1,23) =33.184	Prob>χ2 =0.0000

Source: Authors 'own

The Driscoll-Kraay standard errors estimation is employed for the fixed-effects model (FEM) and helps to deal with heteroscedasticity and serial correlation in the quantitative analysis. The regressive results of all four models are shown in the table below.

Table 7. Estimated results.

Driscoll-Kraay standard errors estimation				
Variables	POVG is the dependent variable		POVR is the dependent variable	
	Model 1	Model 2	Model 3	Model 4
POVG (-1)	0.569*** (5.34)	0.561*** (5.31)		
POVR (-1)			0.514*** (7.93)	0.500*** (7.83)
TOURIST	-0.030* (-1.91)		-0.064* (-1.99)	
REVENUE		-0.039* (2.13)		-0.087* (-1.98)
INSTIT	-0.097** (-2.30)	-0.102*** (-2.52)	-0.108** (-2.34)	-0.122** (-3.01)
GDPPC	-0.171*** (-4.66)	-0.164*** (-5.63)	-0.558*** (-6.64)	-0.518*** (-6.74)
ELEC	-0.180** (-2.52)	-0.182** (-2.58)	-0.229*** (-5.37)	-0.232*** (-5.99)
SO	-0.020** (-2.20)	-0.020** (-2.10)	-0.078*** (-4.21)	-0.086*** (-4.37)
SCI	-0.016 (-1.40)	-0.019** (-2.18)	-0.032** (-2.10)	0.006 (0.36)
Constants	30.76** (2.71)	31.07** (2.81)	52.01*** (6.66)	52.59*** (7.87)
R-squared	0.8477	0.8392	0.8780	0.8727
Number of observations	302	294	302	294
Number of countries	28	28	28	28

Note: *,**,*** significant at 10%, 5%, 1%. The t statistical values are in parentheses below the coefficients. **Source:** Authors

From the Driscoll-Kraay standard errors method estimates, we found the coefficients on tourists and tourism revenue to be negative and statistically significant at the 10% level. The results confirm that international tourist arrivals and tourism revenues negatively affect hunger gaps and poverty rates in developing and emerging countries. Our findings are supported by studies by Garza-Rodriguez (2019) and Zhao and Xia (2020) but contradict with previous studies that said tourism development would worsen poverty in host countries by scholars such as Wattanakuljarus and Coxhead (2008), Njoya and Seetaram (2018), or Dossou et al. (2023). Where higher numbers of international tourists and tourism revenues lead to lower poverty rates and lower poverty gaps. Empirical evidence concludes that international tourism benefits poverty reduction by improving the living ability of people in

the host country. This finding extends the empirical results of previous studies in developing countries (Zhao & Xia, 2020; Folarin & Adeniyi, 2020; Tung & Cuong, 2020).

The lagged variables of poverty have significant positive coefficients, indicating that poverty is a major problem for developing economies and persists from year to year. Increased institutional quality reduces hunger in all models; the coefficients are negative and statistically significant. The estimated results show that institutional quality can improve people's quality of life and income. This finding is entirely consistent with the results of previous empirical studies on the role of institutions in poverty reduction, such as Inoue and Hamori (2012), Perera and Lee (2013), Gozgor et al. (2019), and Zhao and Xia (2020). GDP per capita has a clear impact on poverty reduction in these countries. Our research results show when per capita income increases, the corresponding poverty rate will decrease (Fosu, 2015). This view is supported by Folarin and Adeniyi (2019), when GDP increases, poverty will gradually decrease.

The more the infrastructure system modernizes, the lower the poverty rate. The coefficient of universal access to electricity has statistical significance and at 1% and 5%, respectively. The results show that if the people of a country can easily access to electricity as well as has a good infrastructure, the poverty rate will decrease. It is consistent with the previous evidence (Njoya & Seetaram, 2018). A society's development level can be realized by the proportion of people with access to the internet who operate in extreme poverty. That means that as internet coverage increases, everyone can participate in the global Internet system, and poverty rates will decrease. The estimated results show that the development of science and education can reduce poverty. Our view is supported by the research of Zhao & Xia (2020), when quality of science and national education improves, the poverty rate will also decrease.

To further clarify the relationship between international tourists, tourism revenue, and poverty in developing and emerging countries for the period 2005-2020. We use scatter plot figures with the vertical axis representing the number of international tourists and tourism revenue. The horizontal axis shows the value of the poverty gap and poverty rate (see Figure 1).

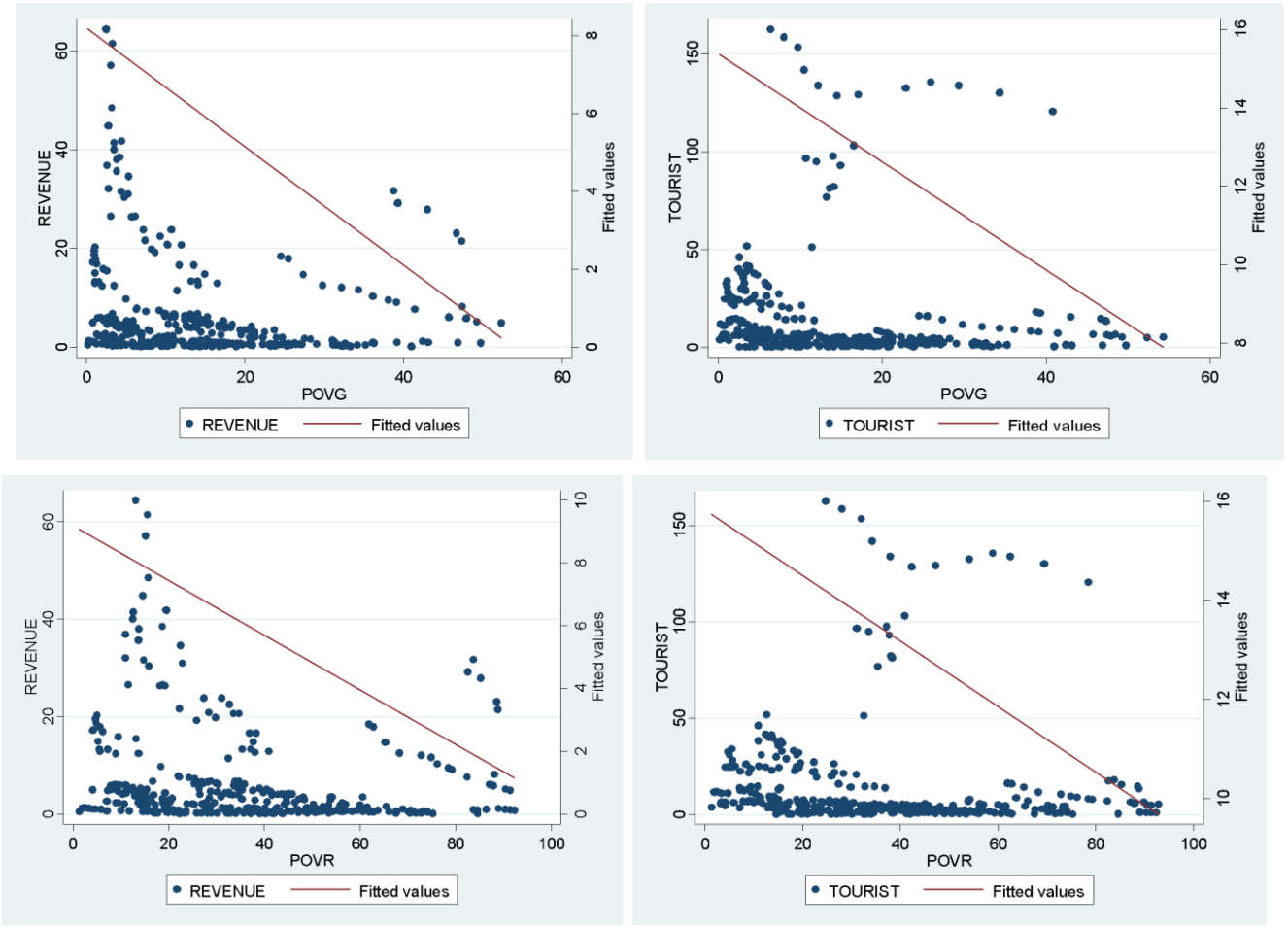

Fig. 1. The relationship between Tourists - Poverty and Revenue- Poverty.
Source: Authors

The graphs present clear illustrations of the negative relationship between tourism development and poverty reduction.

Conclusion

The impact of tourism development on poverty reduction is measured by a sample having 28 developing and emerging countries for the period 2005–2020. Empirical results confirm that tourism development helps reduce poverty in countries with increased revenue from the tourism industry and a large amount of foreign exchange from revenues such as direct revenue from international tourists, taxes, income of indigenous people serving the tourism industry and related industries. So policymakers should strengthen tourism development as an essential resource to fight poverty. Based on the empirical results, some policy implications are proposed to enhance the positive impact of tourism development on social issues such as poverty reduction in developing and emerging countries.

Firstly, governments of developing countries need to promote the attraction of international tourists and consider tourism development policies a top priority schategy to reduce poverty and improve people's living standards. These policies must be implemented over a long period. Secondly, governments of countries need to develop infrastructure systems such as airports, telecommunications, hotel systems, resorts, and beaches to enhance the national image in the views of international tourists. Obviously, visitors will be impressed with the modern countries, friendly people, beautiful landscapes, and excellent service systems. Third, tourism productions and services should be abundant and diverse. Foreign tourists will spend much more money on trips. Tourism expenditures bring benefits to countries so that poverty can be reduced. Poor households can directly receive benefits from selling goods and services to international tourists. Finally, governments should to prioritize reforming the administrative systems to promulgate progressive policies and ensures a stable social-economic environment, a reputable law system, and build a better national image for international tourists.

References

Ajogbeje, K., Adeniyi, O., & Folarin, O. (2017). The effect of terrorism on tourism development in Nigeria: A note. *Tourism Economics*, *23*(8), 1673-1678. https://doi.org/10.1177/135 481661769247.

Alam, M. S., & Paramati, S. R. (2016). The impact of tourism on income inequality in developing economies: Does Kuznets curve hypothesis exist?. *Annals of Tourism research*, *61*, 111-126. https://doi.org/10.1016/j.annals.2016.09.008.

Alderete, M. V. (2019). Examining the drivers of internet use among the poor: The case of Bahía Blanca city in Argentina. *Technology in Society*, *59*, 101179. https://doi.org/10.1016/j.techsoc.2019.101179.

Bielecki, J. (2002). Energy security: is the wolf at the door? *The Quarterly review of Economics and Finance*, *42*(2), 235-250. https://doi.org/10.1016/S1062-9769(02)00137-0.

Blake, A., Arbache, J. S., Sinclair, M. T., & Teles, V. (2008). Tourism and poverty relief. *Annals of Tourism Research, 35(1),* 107–126. https://doi.org/10.1016/j.annals.2007.06.013.

Brida, J. G., Cortes-Jimenez, I., & Pulina, M. (2016). Has the tourism-led growth hypothesis been validated? A literature review. *Current Issues in Tourism*, *19*(5), 394-430. https://doi.org/10.1080/13683500.2013.868414

Croes, R., & Vanegas Sr, M. (2008). Cointegration and causality between tourism and poverty reduction. *Journal of Travel Research*, *47*(1), 94-103. https://doi.org/10.1177/0047287507312429.

Croes, R. (2014). The Role of Tourism in Poverty Reduction: An Empirical Assessment. *Tourism Economics, 20*(2), 207–226. https://doi.org/10.5367/te.2013.0275.

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.2015.0495.

Dossou, T. A. M., Ndomandji Kambaye, E., Bekun, F. V., & Eoulam, A. O. (2023). Exploring the linkage between tourism, governance quality, and poverty reduction in Latin America. *Tourism Economics*, *29*(1), 210–234. https://doi.org/10.1177/13548166211043974.

Dwyer, L., & Thomas, F. (2012). Tourism yield measures for Cambodia. *Current issues in tourism*, *15*(4), 303-328. https://doi.org/10.1080/13683500.2011.604405.

Enilov, M., & Wang, Y. (2022). Tourism and economic growth: Multi-country evidence from mixed-frequency Granger causality tests. *Tourism Economics*, *28*(5), 1216-1239. https://doi.org/10.1177/1354816621990155.

Folarin, O., & Adeniyi, O. (2020). Does tourism reduce poverty in Sub-Saharan African countries? *Journal of Travel Research*, *59*(1), 140-155. https://doi.org/10.1177/0047287518821736.

Fosu, A. K. (2015). Growth, Inequality and Poverty in Sub-Saharan Africa: Recent Progress in a Global Context. *Oxford Development Studies*, *43*(1), 44–59. https://doi.org/10.1080/13600818. 2014.964195

Garza-Rodriguez, J. (2019). Tourism and Poverty Reduction in Mexico: An ARDL Cointegration Approach. *Sustainability, 11*(3), 845. https://doi.org/10.3390/su11030845.

Galperin, H., & Fernanda Viecens, M. (2017). Connected for development? Theory and evidence about the impact of internet technologies on poverty alleviation. *Development Policy Review*, *35*(3), 315-336. https://doi.org/10.1111/dpr.12210.

Gozgor, G., Lau, C. K. M., Zeng, Y., & Lin, Z. (2019). The effectiveness of the legal system and inbound tourism. *Annals of Tourism Research*, *76*, 24-35.https://doi.org/10.1016/j.annals.2019.03.003.

Harrison, D. (2008). Pro-poor Tourism: A Critique. *Third World Quarterly, 29* (5), 851–68. https://doi.org/10.1080/01436590802105983

Inoue, T., & Hamori, S. (2012). How has financial deepening affected poverty reduction in India? Empirical analysis using state-level panel data. *Applied Financial Economics*, *22*(5), 395-408. https://doi.org/10.1080/09603107.2011.613764

Jo, Y. N. (2013). Psycho-social dimensions of poverty: When poverty becomes shameful. *Critical Social Policy*, *33*(3), 514-531. https://doi.org/10.1177/0261018313479008

Kanchana, K., & Unesaki, H. (2014). ASEAN energy security: An indicator-based assessment. *Energy Procedia*, *56*, 163-171. https://doi. org/ 10.1016/ j.egypro.2014.07.145

Karekezi, S., Lata, K., & Coelho, S. T. (2012). Traditional biomass energy: Improving its use and moving to modern energy use. In *Renewable energy* (pp. 258-289). Routledge.

Kebede, N. S., & Bayeh, B. E. (2017). Alignment of tourism against poverty in Bale eco-region, Dinsho district, Ethiopia. *International Journal of Tourism Sciences, 17*(4), 247–261. https://doi.org/10.1080/15980634.2017.138413.

Kim, N., Song, H., & Pyun, J. H. (2016). The relationship among tourism, poverty, and economic development in developing countries. *Tourism Economics, 22*(6), 1174–1190. https://doi.org/10.1177/1354816616669038.

Knight, D. S. (2017). Are high-poverty school districts disproportionately impacted by state funding cuts? School finance equity following the Great Recession. *Journal of Education Finance*, *43*(2), 169-194. https://www.jstor.org/stable/45093658.

Mahadevan, R., & Suardi, S. (2019). Panel evidence on the impact of tourism growth on poverty, poverty gap and income inequality. *Current Issues in Tourism, 22*(3), 1–12. https://doi.org/10.1080/13683500.2017.1375901.

Mushtaq, R., & Bruneau, C. (2019). Microfinance, financial inclusion, and ICT: Implications for poverty and inequality. *Technology in Society*, *59*, 101154. https://doi.org/10.1016/j.techsoc.2019.101154.

Njoya, E. T., & Seetaram, N. (2018). Tourism Contribution to Poverty Alleviation in Kenya: A Dynamic Computable General Equilibrium Analysis. *Journal of Travel Research, 57*(4), 513–524. https://doi.org/10.1177/0047287517700317.

Perera, L. D. H., & Lee, G. H. Y. (2013). Have Economic Growth and Institutional Quality Contributed to Poverty and Inequality Reduction in Asia? *Journal of Asian Economics, 27*(8), 71–86. https://doi.org/10.1016/j.asieco.2013.06.002

Qin, Y., Wang, X., Xu, Z., & Škare, M. (2021). The impact of poverty cycles on economic research: evidence from econometric analysis. *Economic research - Ekonomska istraživanja*, *34*(1), 152-171. https://doi.org/10.1080/1331677X.2020.1780144

Saayman, M., Rossouw, R., & Krugell, W. (2012). The impact of tourism on poverty in South Africa. *Development Southern Africa*, *29*(3), 462–487. https://doi.org/10.1080/0376835x.2012.706041.

Saha, S., & Yap, G. (2015). Corruption and tourism: An empirical investigation in a non-linear framework. *International Journal of Tourism Research*, *17*(3), 272-281. https://doi.org/10.1002/jtr.1985.

Scheyvens, R. (2007). Exploring the tourism-poverty nexus. *Current issues in Tourism*, *10* (2-3), 231-254. https://doi.org/10.2167/cit318.0.

Scheyvens, R. (2009). Pro-poor tourism: Is there value beyond the rhetoric? *Tourism recreation research*, *34*(2), 191-196. https://doi.org/10.1080/02508281.2009.11081590

Scheyvens, R., & Russell, M. (2012). Tourism and poverty alleviation in Fiji: comparing the impacts of small- and large-scale tourism enterprises. *Journal of Sustainable Tourism, 20*(3), 417–436. https://doi.org/10.1080/09669582.2011.629049.

Steiner, C. (2006). Tourism, Poverty Reduction and the Political Economy: Egyptian Perspectives on Tourism's Economic Benefits in a Semi-RentierState. *Tourism and Hospitality Planning & Development*, *3*(3), 161–177. https://doi.org/10.1080/14790530601132286.

Torabi, Z., Rezvani, M. R., & Badri, S. ali. (2020). Tourism, poverty reduction and rentier state in Iran: a perspective from rural areas of Turan National Park. *Journal of Policy Research in Tourism, Leisure and Events, 13*(2), *1–16.* https://doi.org/10.1080/19407963.2020.1759081.

Tung, L. T. (2021). The tourism-led growth hypothesis in transition economies? Empirical evidence from a panel analysis. *GeoJournal of Tourism and Geosites*, *38*(4), 1076-1082. https://doi .org/10.30892/gtg.38412-746

Tung, L. T., & Cuong, L. K. (2020). Impact of Tourism on Poverty Reduction: Evidence from an Emerging Tourism Market. *Montenegrin Journal of Economics*, *16*(3), 45-55. https://doi .org/10.14254/1800-5845/2020.16-3.4

Tung, L. T., & Thang, P. N. (2022). Impact of exchange rate on foreign tourist demand: evidence from developing countries. *GeoJournal of Tourism and Geosites*, *45*, 1579-1585. https://doi.org/10.30892/gtg.454spl06-977.

Wang, S., Li, G., & Fang, C. (2018). Urbanization, economic growth, energy consumption, and CO2 emissions: Empirical evidence from countries with different income levels. *Renewable and Sustainable energy reviews*, *81*, 2144-2159. https://doi.org/10.1016/j.rser.2017.06.025.

Wattanakuljarus, A., & Coxhead, I. (2008). Is tourism-based development good for the poor? *Journal of Policy Modeling, 30*(6), 929–955. https://doi.org/10.1016/j.jpolmod.2008.02.006.

Winter, T., & Kim, S. (2020). Exploring the relationship between tourism and poverty using the capability approach. *Journal of Sustainable Tourism, 29*(10), 1655–1673. DOI:10.1080/09669582.2020.1865385.

World Bank (2023). *World Development Indicators*. Available at https://data.worldbank.org/

Zhao, L., & Xia, X. (2020). Tourism and poverty reduction: Empirical evidence from China. *Tourism Economics*, *26*(2), 233-256. https://doi.org/10.1177/0047287520947792.

Yap, G., & Saha, S. (2013). Do political instability, terrorism, and corruption have deterring effects on tourism development even in the presence of UNESCO heritage? A cross-country panel estimate. *Tourism Analysis*, *18*(5), 587-599. https://doi.org/10.3727/108354213X13782245307911.

Zhou, Y., Guo, L., & Liu, Y. (2019). Land consolidation boosting poverty alleviation in China: Theory and practice. *Land use policy*, *82*, 339-348. https://doi.org/10.1016/j.landusepol.2018.12.024.