

Effect of Tourism and Remittance Income on Economic Growth in SAARC CountriesArjun Kumar Dahal¹ & Rohit Kumar Shrestha, PhD²¹Principal author

Lecturer

Department of Economics

Mechi Multiple campus, Bhadrapur, Jhapa, Tribhuvan University, Nepal

*larjundahal@gmail.com/ arjun.dahal@memc.tu.edu.np**https://orcid.org/0000-0003-4816-4576*²Corresponding author

Reader

Faculty of Management, Padmakanya Multiple Campus, Kathmandu

Tribhuvan University, Nepal

*rohitshrestha92@gmail.com***Abstract**

The paper examines the effect of remittance and tourism income on economic growth in SAARC countries. It is based on the exploratory and descriptive research design and is mainly guided by the positivist research philosophy. The secondary data are used for the analysis, collected from the various reports of the World Bank and economic surveys of respective countries. The unbalanced panel data ranges from a maximum of 23 to a minimum of 14; altogether, 169 observations are evaluated. Some statistical and econometric tools like descriptive statistics, correlation analysis, panel unit root testing, and panel ARDL model are utilized to observe the relation and impact of tourism and remittance income on the GDP growth of SAARC countries. There is a high degree of correlation between GDP and remittance income. There is a moderate degree of positive association ship between GDP and tourism income. Tourism and remittance income positively and significantly impact the economic growth of SAARC countries in the long run. One per cent increase in remittance and tourism income increased 0.277 and 0.518 per cent in GDP, respectively, in SAARC countries. The impact of tourism income is stronger than the impact of remittance income in promoting economic growth in SAARC countries. But in the short run, the significant impact of tourism and remittance income is not identified.

Keywords: ARDL model, residuals, co-integration, GDP growth, intensity*JEL classification:* J₆₂, O₁₁, Z₃₂

Introduction

The remittance and receipt from tourism income play a significant role in developing countries economic development. Remittance is the amount of money received from foreign employment. Remittance income is the sum of money sent by someone working in foreign countries to their family back home (Koechlin and Leon, 2014). A remittance income is forwarded to another party, usually in another country. By remittance, we mean sending money or goods in home by the migrant workers earned outside their home country (Gaudal, 2007).

The remittance income has significantly contributed to improving people's living standards. Absolute poverty has decreased with the increase in foreign employment and remittance income. It increases literacy and the quality of education among the people (Shahbaz et al., 2014). Remittance income has increased the accessibility of quality and technical education and increased knowledge and skills. Similarly, remittance income has increased financial access, expanded services, raised banks and financial institutions' turnover, increased foreign exchange reserves, and, ultimately, the nation's economic growth. The remittance revenue received by the households is used to create small sales industries, pay off debt, buy land, build houses, use better seeds, apply new technologies, and do other things that directly or indirectly boost the national economy (Sapkota, 2013).

Remittance is essential in developing countries' economic development, especially for those who cannot utilize their human resources in their own countries. Reduction of unemployment in the economy, improvement in the living standard, poverty alleviation, increase in literacy rate, increase in knowledge, skill, expansion of service sector, increase in the turnover of the banks, and increase in the foreign exchange reserve are the positive aspects of remittance income.

A tourist is a person who travels to a place for pleasure and many other purposes. Tourism is the business that provides services to tourists (Cottrell et al., 2008). The income earned from the tourism industry is called tourism income. The tourism industry generates income, employment, and foreign exchange earnings. So, it has a driving role in economic development (Aslan, 2015).

Remittance and tourism income are the primary sources for the economic development of SAARC countries. Foreign remittance is an essential component of further economic growth for many countries. Foreign remittances are much more stable income flows than foreign direct investment (Depken et al., 2021). The South Asian Association for Regional Co-operation (SAARC) was established on 8 December 1985. SAARC has eight member countries: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. It was established to promote the regional welfare of the people of south Asian countries. A brief introduction to SAARC countries is given below:

Table 1*Basic Information about SAARC Countries*

Country	Area (Sq.km)	Population	GDP (Billion USD)	PCI (USD)	HDI value	HDI rank	Currency	Capital City
Nepal	147187	29191480	36.29	1372	0.602	143	Rupees	Kathmandu
India	3287263	1388052928	3173	2257	0.645	132	Rupee	New Delhi
Bhutan	38394	779900	2.315	3266	0.654	127	Ngultrum	Thimphu
Pakistan	76095	222590000	346.3	1505	0.557	161	Rupee	Islamabad
Afghanistan	652860	39835428	14.79	1666	0.511	169	Afghani	Kabul
Sri-Lanka	65610	22156000	88.93	3894	0.782	73	Rupee	Colombo
Bangladesh	148460	166303494	416.3	2824	0.632	129	Taka	Dhaka
Maldives	297.8	543620	5.406	10366	0.740	90	Rufiyaa	Male

This article aims to research the impact of remittance and tourism receipts on the economic growth of SAARC countries. It also seeks individual and joint influence of tourism and remittance income on the economic growth of SAARC countries.

Without an introduction chapter, this article is divided into the following sections: section 2 presents the theoretical and empirical review of the literature. Section 3 gathers the research design, nature of data, variables, and model specification. Section 4 covers the presentation and analysis of data. While section 5 covers the summary, conclusion, and policy implication of the research.

Literature Review

Numerous studies have examined the impact of tourism or remittance income on economic growth. The pertinent literature is reviewed in this section. They discuss the literature's theoretical and empirical reviews on how tourism and remittance revenue affect economic growth.

Theoretical Consideration

Four theories are developed regarding foreign remittances' contribution to rising GNP. The cannons that fit together between tourism and economic growth are the tourist-led economic growth hypothesis (TLGH), economic-driven tourism growth hypothesis (EDTH), bi-directional causality hypothesis (BCH), and no causality hypothesis (Chatziantoniou et al., 2013).

According to tourism-led economic growth, increasing tourism encourages economic growth. This theory holds that the rise of the tourism industry boosts foreign exchange, encourages investment, creates job opportunities, raises incomes, and ultimately leads to solid

<https://doi.org/10.3126/jom.v6i1.58862>

national economic growth. According to the economic-driven tourism growth hypothesis, the nation's economic growth determines how the tourism industry develops. As the economy expands, tourism booms (Payme and Mervar, 2010). More investment is required for the growth of tourism and tourist destinations. It is achievable when the nation can invest in the tourism sector. According to the bi-directional causality concept, both economic growth and tourism are positively correlated with each other. However, the no-causation theory contends that tourism does not affect economic growth (Tang, 2013).

The optimistic, pessimistic, and pluralist hypotheses are created to establish a link between remittance income and economic growth (Jushi et al., 2021). The benefits of remittance money and international work support the optimistic view. Working abroad boosts domestic income, investment, employment, capital formation, and economic growth. The negative aspects of remittance money and international work are included in the optimistic hypothesis. Foreign labour migration stunts economic growth and fosters reliance and brain drain. Employment abroad is not only required but also desired. Wage income alone cannot bring national economic prosperity. It's because the fruit they produce in foreign nations only accounts for a small fraction of their remittance income. According to the remittance development pluralist theory, the country's actual situation determines whether remittance income has a good or negative effect. Empirical data can be used to make a decision. (Bucevska, 2022).

Literature on Remittance Income for Economic Growth

Fayissa and Nsiah (2010), Ramirez (2013), Topxhiu and Krasniqui (2007), and Comes et al. (2018) found a positive relationship between remittance income and economic growth. Similarly, Cooray (2012), Jawaid and Raza (2016), Chemi et al. (2005), and Oshota and Badejo (2014) found a positive and significant impact of remittance income to increase the GDP in their respective countries.

Sutradhar (2020) investigated the impact of workers' remittances on economic growth. The empirical regression analysis confirms an adverse effect of remittances on economic growth in Bangladesh, Pakistan, and Sri Lanka, but remittance positively impacts economic growth in India.

Touch and Roa (2016) and Hasan and Shakur (2017) observed remittance income's long-term negative growth effect. However, Barajas et al. (2009) found no impact on the economic growth of the remittance income of the workers. ``

Depken et al. (2021) found a unidirectional causal relationship between foreign remittance to economic growth but no link in the opposite direction in the case of Croatia. Leon-Ledesma et al. (2004) and Simionescu and demitrescu (2017) found a positive effect of

remittance on economic growth, both directly and indirectly. Similarly, Gjini (2013) and Jahjah et al. (2003) found a negative impact of remittance income on economic growth.

Literature on Tourism Income for Economic Growth

Gautam (2012) discovered a positive impact on Nepal's economic growth. The evidence confirmed that tourism receipts cause economic growth in the short and long run. Rasool et al. (2011) discovered that tourism financial development and economic growth were co-integrated in the long run. They also found bidirectional causality between inbound tourism and economic growth and validated the feedback hypothesis in Brazil, Russia, India, China, and South Africa (BRICS countries).

All nations worldwide recognize tourism's value as a vehicle for economic development. Due to its several advantages, including creating jobs, obtaining foreign currency, and increasing household income and government revenue. (Henry and Deane 1997; Po and Huang 2008), although Tang (2013) and Katircioglu (2009) found an insignificant association between tourism and economic growth.

Young et al. (2018) and Liu (2017) found that tourism income and economic growth are significantly correlated in the Chinese economy. Nyasha (2021) observed that tourism expenditure negatively affects economic growth, but tourism receipts have the opposite effect in Sub-Saharan Africa (SSA). Akan et al. (2007) observed the positive role in the structural change of the economy from the tourism income in Turkey. Harun et al. (2016) found a positive effect of tourism on economic growth. They found that a one per cent increase in tourism receipts leads to the economic growth of 0.314 per cent.

Yalcinkaya et al. (2018) looked at the 20 nations that generate the most income from tourism to investigate the impact of international tourist receipts on economic growth. They discovered that foreign tourism earnings had a favorable and considerable impact on economic expansion. It was found that there was a one-way causal relationship connecting foreign tourism receipts to economic growth.

Three different categories of literature have been reviewed in this section. Most research focuses on how tourism receipts or remittance income affect economic growth. However, this study examined how tourism revenue and remittance income affected SAARC nations' economic expansion. Therefore, there is a significant research gap between earlier studies and the current one.

Materials and Methods

Research Design

This study is predominantly based on exploratory and descriptive research design. The exploratory research design is used to examine the impact of tourism receipt and remittance

income in promoting the economic growth of SAARC countries. The descriptive research design describes the variables and results from the analysis of the impact exploration.

Source of Data and Data Processing

This research is based on the secondary data collected from the various reports of the world bank and economic surveys of the respective countries. The unbalanced panel data ranges from a maximum of 23 to a minimum of 14; altogether, 169 observations are evaluated. The country-wise number of data is listed in table 2.

Table 2

Number of included Data from SAARC Countries

Crossed	Country	Number of Observation	Fiscal Year
1	India	23	1999/00-2021/22
2	Nepal	23	1999/00-2021/22
3	Bhutan	17	2005/06-2021/22
4	Bangladesh	23	1999/00-2021/22
5	Sri Lanka	23	1999/00-2021/22
6	Pakistan	23	1999/00-2021/22
7	Maldives	23	1999/00-2021/22
8	Afghanistan	14	2008/09-2021/22
	Total	169	

Simple statistical and econometric tools are used, and the data are analyzed by EViews12 data processing software.

Variable Specification

In this study, remittance income, tourism income, and gross domestic product are included for the study. Gross domestic product is taken as the dependent variable, and the other two variables, remittance income and tourism receipts are taken as independent variables. In this study, the theoretical concept is developed that the GDP of SAARC countries depends upon the tourism income and income earned from foreign countries.

Model Specification

The concept of Cobb-Douglas production is hired to establish the relationship between dependent and independent variables.

The Cobb-Douglas production function: $Q = AK^{\alpha}L^{\beta}$ (1)

Or, Log Q = log A + α log K + β log L (2)

In these equations, Q stands for total output, K stands for Capital input, and L stands for labour input. ‘A’ shows the efficiency parameter or that portion of the product that depends

upon other things without labour and capital input. So, it is called residual produce. α and β contribute to production from capital and labour, respectively.

The GDP of SAARC countries depends upon tourism receipts and income earned from foreign employment. In this sense,

$$GDP = f(TI, RI) \tag{3}$$

$$\text{In logarithmic form, } LnGDP = f(LnTI, LnRI) \tag{4}$$

The simple model for panel data analysis:

$$Z_{it} = \alpha + \beta Y_{it} + \mu_{it} \tag{5}$$

In this equation, i presents various countries included in this study, t stands for the time period, Y_{it} shows the independent variables for all cross sections, i.e., $i = 1, 2, 3, \dots, n$ over time $t = 1, 2, 3, \dots, n$, Z_{it} is the independent variable of various countries over a time t . Similarly, μ_{it} is the error term. More specifically,

$$LnGDP_{it} = \alpha + \beta_1 LnRI_{it} + \beta_2 LnTI_{it} + \mu_{it} \tag{6}$$

In this equation, $LnGDP_{it}$ indicates the Gross Domestic Product of SAARC countries over time t , and α stands for intercept, and β_1 and β_2 are the coefficients of remittance income and tourism income, respectively, indicating the speed at which the dependent variable may adjust to long-run equilibrium.

The panel ARDL approach investigates the short- and long-run connection between dependent and independent variables. The general form of the panel ARDL model is:

$$Z_{it} = \alpha_{it} + \sum_{k=0}^n \beta_{it} Z_{j,t-k} + \mu_{it} \tag{7}$$

After introducing all variables in logarithmic forms, the panel ARDL model is specified as given below:

$$\Delta LnGDP_{it} = \beta_0 + \sum_{k=0}^n \beta_{1j} \Delta LnGDP_{j,t-k} + \sum_{k=0}^n \beta_{2j} \Delta LnRI_{j,t-k} + \sum_{k=0}^n \beta_{3j} \Delta LnTI_{j,t-k} + \alpha_1 LnGDP_{j,t-1} + \alpha_2 LnRI_{j,t-1} + \alpha_3 LnTI_{j,t-1} + \mu_{it} \tag{8}$$

In this equation, β_0 is the intercept, also called the drift components, β_1 , β_2 , and β_3 are the short-run coefficients, and α_1 , α_2 , and α_3 are the long-run coefficients of respective variables. $1, 2, 3, \dots, n$ shows the countries, $t = 1, 2, 3, \dots, n$ indicates the time index, and μ_{it} is the random disturbance or error term.

Results and Discussion

Descriptive Statistics

Descriptive statistics are used to summarize or describe the characteristics of the given data set. Descriptive statistics include the measure of central tendency (mean, median), measurement of variability (variance, standard deviation, and coefficient of variation), and the condition of frequency (count). It gives knowledge about the state of dependent and independent variables. Table 3 presents the descriptive statistics of response and predictor variables.

Table 3*Descriptive Statistics of Response and Predictor Variables.*

Descriptions	LnGDP	LnRI	LnTI
Mean	10.521	6.926	6.334
Median	10.440	8.150	6.211
Maximum	14.972	11.396	10.311
Minimum	6.379	-1.448	2.773
Std. Dev.	2.207	3.299	1.703
Skewness	0.092	-0.723	0.392
Kurtosis	2.185	2.231	2.511
Coefficient of variation	20.98%	47.63%	26.89%
Jarque-Bera	4.915	18.894	6.015
Probability	0.086	0.0001	0.049
Sum	1778.006	1170.528	1070.474
Sum Sq. Dev.	818.290	1828.559	487.209
Observations	169	169	169

Note. Authors calculation by using EViews12.

Where LnGDP= Gross Domestic Product of various SAARC countries (after converting log).

LnRI= Remittance income (after converting log).

LnTI= Receipt from tourism industry (after converting log)

Table 3 shows the descriptive statistics of the study's various response and predictor variables. The standard deviation of tourism income is 1.703, which is smallest than others. So, the mean value of tourism income is more representative than other variables. Similarly, the standard deviation of remittance income is 3.299, which is the highest than the standard deviation of GDP and tourism income. So, the mean value of remittance income is less representative than the mean value of tourism income and gross domestic product. The data on GDP and tourism income are positively skewed (Mean > Median), whereas the data on remittance income is negatively skewed (Mean < Median).

The coefficient of variation of GDP is 20.98 per cent, which is the smallest of remittance and tourism income. So, GDP data is more consistent or uniform, or less variable than other variables' data. Similarly, the coefficient of variation of remittance income is 47.63 per cent, the highest value of others. So, the data on remittance income is more variable or inconsistent than others. The Jarque-Bera probability value of all variables is not zero, indicating that the sampled data don't have a normal distribution. A higher sum of squares deviation indicates higher variability, while a lower result indicates low variability from the mean value. The sum of the squared deviation of remittance income is the highest, and tourism

income has the lowest value. From this, we can conclude that remittance has a higher variability, and tourism income has less variability from the mean value.

Correlation Analysis

The correlation coefficient is the unit of measurement used to observe the intensity in the linear relationship between the variables included in the study. A high correlation coefficient represents the strong relationship between two variables, while a low correlation means that the variables are weakly associated. The positive correlation implies an increase in one variable leads to a rise in the other. Similarly, a negative correlation means that when one variable increases, the other variable decreases, and vice versa. In table 4, the association ship between variables is presented.

Table 4

Correlation Coefficients Between Pair of Variables

variables	LnGDP	LnRI	LnTI
LnGDP	1.00	0.915	0.545
LnRI	0.915	1.00	0.359
LnTI	0.545	0.359	1.00

Note. Authors calculation by using EViews12.

Table 4 represents the degree of association ship between pairs of variables. The correlation coefficient between GDP and remittance income is 0.915. So, there is a high degree of a positive association between GDP and remittance income. Likewise, the correlation coefficient between GDP and tourism receipt is 0.545. So, they have a moderate degree of positive correlation, but there is a low degree of association ship between tourism income and remittance income in SAARC countries.

Panel Unit Root Testing

Panel unit root testing is used to check the data, whether stationary or non-stationary. Data must be stationary for the operation of the system. To identify the order of co-integration of variables used in the study, four methods of panel unit root tests are employed, i.e., (a) Levin, Lin, and Chu t* (b) Im, Pesaran and shin w- statistics, (c) ADF-Fisher chi-square, and (d) PP-Fisher chi-square. The outcomes of panel unit root testing are reported in Table 5.

Table 5

Results of Panel Unit Root Testing

Null hypothesis: Series have unit root		Benchmark: Individual intercept		
Variables	Methods	Level	First difference	decision
LnGDP	Levin, Lin, and Chu t*	-1.832 (0.033)	-5.024 (0.00)	Stationary after the
		-0.199 (0.431)	-4.522 (0.00)	

Variables	Methods	Level	First difference	decision
	Im, Pesaran and shin w-stat. ADF-Fisher chi-square PP- Fisher chi-square	20.093 (0.216) 41.621 (0.0004)	54.483 (0.00) 77.011 (0.00)	first difference
LnRI	Levin, Lin, and Chu t* Im, Pesaran and shin w-stat. ADF-Fisher chi-square PP- Fisher chi-square	-5.511 (0.00) -2.983 (0.00) 37.422 (0.002) 74.611 (0.00)	-10.361 (0.00) -8.834 (0.00) 95.797 (0.00) 94.869 (0.00)	Stationary at level
LnTI	Levin, Lin, and Chu t* Im, Pesaran and shin w-stat. ADF-Fisher chi-square PP- Fisher chi-square	-2.622 (0.00) -1.111 (0.133) 20.815 (0.186) 17.851 (0.333)	-6.999 (0.00) -6.590 (0.00) 74.139 (0.00) 74.768 (0.00)	Stationary after the first difference

Note. The value of the bracket shows the probability values.

The outcomes of the panel unit root tests reported in table 5 show that GDP and tourism income data are stationary after the first difference. It is because all methods' P-values are less than 0.05, and the absolute value of t- statistics is more than 2. The data on remittance income is stationary at this level. Specifically, the GDP and tourism income is stationary at I(1) and remittance income at I(0). In mixed I(1) and I(0) order of co-integration, we can use the Panel ARDL model for the analysis (Pesaran, and Shin, 1997).

Panel Autoregressive Distributed Lag (ARDL) Model

The panel autoregressive distributed lag (ARDL) model believes that the dependent variable is influenced by its own lag value, including other independent variables. The variables are found stationary in I(1) and I(0). So, the panel ARDL model can be operated. The panel's short-run and long-run impact of remittance and tourism income on the GDP growth of SAARC countries are listed in table 6.

Table 6

Results of Panel ARDL Model: Short-Run and Long-run Coefficients

Dependent Variable: D(LNGDP)

Method: ARDL

Maximum dependent lags: 2 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (2 lags, automatic): LNRI LNTI

Selected Model: ARDL (1, 2, 2)

<https://doi.org/10.3126/jom.v6i1.58862>

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
LNRI	0.277	0.028	9.754	0.000
LNTI	0.518	0.045	11.439	0.000
Short Run Equation				
COINTEQ01	-0.241	0.047	-5.1004	0.000
D(LNRI)	-0.021	0.096	-0.226	0.821
D(LNRI (-1))	0.029	0.058	0.514	0.607
D(LNTI)	-0.019	0.042	-0.444	0.658
D(LNTI (-1))	-0.129	0.038	-3.399	0.0009
C	1.356	0.280	4.836	0.000
Root MSE	0.058	Mean dependent var		0.083
S.D. dependent var	0.093	S.E. of regression		0.069
Akaike info criterion	-2.022	Sum squared residuals		0.561
Schwarz criterion	-1.096	Log-likelihood		220.824
Hannan-Quinn criteria.	-1.645			

Note. Authors calculation by using EViews12.

The outcomes of the panel ARDL model are presented in table 6. It shows the short-run and long-run equations of the ARDL model. In the long run, the remittance and tourism income are individually significant in determining the economic growth in SARC countries. The one per cent increase in remittance income leads to 0.277 per cent increase in GDP in SAARC countries in the long run. Ramirez (2013), Topxhiu and Krasniqui (2007), and Comes et al. (2018) found a positive relationship between remittance income and economic growth.

Similarly, Cooray (2012), Jawaid and Raza (2016), Chemi et al. (2005), and Oshota and Badejo (2014) found a positive and significant impact of remittance income to increase the GDP. Likewise, a one per cent increase in tourism income leads to a 0.518 per cent increase in GP in SAARC countries. Harun et al. (2016) also found a positive effect of tourism on economic growth. They found that a one per cent increase in tourism receipts leads to the economic growth of 0.314 per cent. It means the impact of tourism income is stronger than the impact of remittance income in promoting economic growth in SAARC countries. The long-run regression equation is estimated as follows.

$$D(LNGDP) = 0.277lnRI+0.518LnTI. \tag{9}$$

In the short run, most of the P-values are more than 0.05. So significant impact of tourism and remittance income is not identified. Only first lag tourism income is substantial,

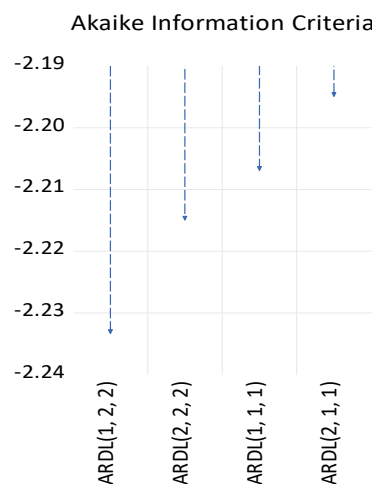
but unfortunately, it negatively impacts GDP. Barajas et al. (2009) found no impact on the economic growth of the remittance income of the workers. So, it is concluded that tourism and remittance income have no significant effect on GDP in the short run. The co-integrating equation or error correction term (ECT) is negative and significant. The variables move to long-run equilibrium at the speed of 24.1 per cent. The short-run equation is estimated as follows:

$$D(LNGDP) = 1.355 - 0.217D(LNRI) + 0.0299D(LNRI(-1)) - 0.0188D(LNTI) - 0.129D(LNTI(-1)) \quad (10)$$

The root means squared error (MSE) is 0.058. The small value of root MSE indicates that the actual data and observed value move together with slight variation. The standard error of regression represents the average distance the observed values fall from the regression line. It tells how wrong the regression model is on average using the units of the response variables. The value of the regression line's standard error (SE) is 0.069. it is not a significant value. So, the observed values from this model are near the regression line or fitted line. The smaller SE values are better because they indicate that the observation is closer to the matched line. Akaike info criteria, Schwarz criteria, and Hannan-Quinn criteria are the model selection criteria. The Akaike info criteria value is smaller than another model. The proof is displayed in figure 1.

Figure 1

Model Selection Criteria



The sum of squared residuals shows the variance of the sum of residuals or error term, which is tiny or 0.561. The smaller value of the residual sum of squares (RSS) fits the data for a better model. Otherwise, it poorly fits the data. The RSS value is 0.561. So, a smaller RSS indicates a tight fit of the model. The log-likelihood value for a given model measures the goodness of fit for a model. The higher the log-likelihood value, the better it fits a data set. The value of log-likelihood is 220.824. it is not such a small value. So, the predicted value built by this model is best.

Summary, Policy Implication, and Limitations

In SAARC countries, there is a moderately favorable association between tourism revenue and GDP, but a strong positive relationship between remittance income and GDP. Short-term economic growth is not considerably impacted by tourism or remittances. However, in the long run, remittances and tourism revenue each play a substantial role in predicting economic growth in SAARC nations. In the long run, a 1% increase in remittance income results in a 0.277% increase in GDP. Similarly, a 1% rise in tourism revenue results in a 0.518% increase in GDP in SAARC nations. The impact of tourism income is stronger than the impact of remittance income in promoting economic growth in SAARC countries.

Comparing how tourism and remittances affect economic growth in SAARC nations is useful. It aids in determining if foreign employment or tourism development is more crucial for economic progress. Revenue from tourism has a greater impact than income from remittances. The expansion of tourism might therefore be prioritized by governments for economic growth.

This study includes 169 observations from eight SAARC member countries, with a maximum of 23 and a minimum of 14 data points. Only two independent variables, tourism receipts and remittance income, are used to calculate GDP growth in SAARC countries. To examine the relationship and impact of tourism, and remittance income on economic growth, simple statistical tools such as descriptive statistics, correlation analysis, and the ARDL model are used. As a result, additional research is required using other variables, additional data, tools, countries, techniques, and data processing software.

References

- Akan, Y., Arslan, İ., & Isik, C. (2007). The impact of tourism on economic growth: The case of Turkey. *Journal of Tourism*, 9(1), 1-24.
- Aslan, A. (2015). The sustainability of tourism income on economic growth: does education matter? *Qual Quant* 49, 2097–2106. <https://doi.org/10.1007/s11135-014-0095-7>
- Barajas, A., Gapen, M. T., Chami, R., Montiel, P., & Fullenkamp, C. (2009). *Do workers' remittances promote economic growth?* (No. 2009-2153). International Monetary Fund.
- Bucevska, V. (2022). Impact of remittances on economic growth: empirical evidence from south-east European countries. *South-East European Journal of Economics and Business*, 17(1), 79-94, DOI: 10.2478/jeb-2022-0006
- Chami, R., Fullenkamp, C., & Jahjah, S. (2005). Are immigrant remittance flows a source of capital for development? *IMF Staff papers*, 52(1), 55–81.

- Chatziantoniou, I., Filis, G., Eeckels, B., & Apostolakis, A. (2013). Oil prices, tourism income, and economic growth: A structural VAR approach for European Mediterranean countries. *Tourism Management*, 36, 331-341. DOI: 10.1016/j.tourman.2012.10.012
- Comes, C. A., Bunduchi, E., Vasile, V., & Stefan, D. (2018). The impact of foreign direct investments and remittances on economic growth: A case study in Central and Eastern Europe. *Sustainability*, 10(1), 238. <https://doi.org/10.3390/su10010238>
- Cooray, A. (2012). The impact of migrant remittances on economic growth: Evidence from South Asia. *Review of International Economics*, 20(5), 985–998
- Cottrell, S., Pearce, P., & Arntzen, J. (2008). Tourism as an Income Earner. *Botswana Notes and Records*, 39, 13–22. <http://www.jstor.org/stable/41236629>
- Depken, C., A., Radić, N., M., & Paleka, H. (2021). Causality between foreign remittance and economic growth: empirical evidence from Croatia. *Sustainability*. 13(21), <https://doi.org/10.3390/su132112201>
- Fayissa, B., & Nsiah, C. (2010). The impact of remittances on economic growth and development in Africa. *The American Economist*, 55(2), 92–103.
- Gaudel, Y., S. (2006). Remittance income in Nepal: Need for economic development, *Journal of Nepalese Business Studies*, 3(1), <https://www.nepjol.info/index.php/JNBS/article/view/491/478>
- Gautam, B., P. (2012). Tourism and economic growth in Nepal. Nepal Rastra Bank, *Economic Review*. 23-2, 18-30, <https://shorturl.at/BNST7>
- Gjini, A. (2013). The role of remittances on economic growth: An empirical investigation Of 12 CEE Countries. *International Business & Economics Research Journal (IBER)*, 12(2), 193–204. <https://doi.org/10.19030/iber.v12i2.7631>
- Harun, B. A. L., Akça, E. E., & Bayraktar, M. (2016). The contribution of tourism to economic growth: research on Turkey. *Akademik Yaklaşımlar Dergisi*, 7(1), 1-20. <https://dergipark.org.tr/en/pub/ayd/issue/27225/286552>
- Hasan, G. M., & Shakur, S. (2017). Nonlinear effects of remittances on per capita GDP growth in Bangladesh. *Economies*, 5(3), 1–11.
- Henry, E. W., & Deane, B. (1997). The contribution of tourism to the economy of Ireland in 1990 and 1995. *Tourism Management*, 18(8), 535-553. [https://doi.org/10.1016/S0261-5177\(97\)00083-6](https://doi.org/10.1016/S0261-5177(97)00083-6)
- Jahjah, S.; Chami, R.; Fullenkamp, C.(2003). Are Immigrant Remittance Flows a Source of Capital for Development? *IMF Work. Pap.* 3, 1. <https://doi.org/10.5089/9781451859638.001>
- Katircioglu, S. (2009). Testing the tourism-led growth hypothesis: The case of Malta. *Acta Oeconomica*, 59(3), 331-343. <https://www.jstor.org/stable/40729910>
- Koehlin, V., & Leon, G. (2007). International remittances and income inequality: An empirical investigation. *Journal of Economic Policy Reform*, 10(2), 123-141. <https://doi.org/10.3126/jom.v6i1.58862>

- Payne, J. E., & Mervar, A. (2010). Research note: The tourism–growth nexus in Croatia. *Tourism Economics*, 16(4), 1089-1094. <https://doi.org/10.5367/te.2010.0014>
- Leon-Ledesma, M.; Piracha, M. (2004). International Migration and the Role of Remittances in Eastern Europe. *International Migration*. 42, 65-83, <https://doi.org/10.1111/j.0020-7985.2004.00295>
- Liu, Y., M. (2017). An empirical study on tourism revenue and economic growth in Jiangsu Province based on grey system theory. *Journal of Tourism Survey*, 5(2), 190-192.
- Pesaran, M. H., & Shin, Y. (1997). Autoregressive distributed modeling approach to co-integration analysis, <http://www.eprg.org.uk/faculty/pesaran/ardl.pdf>
- Po, W. C., & Huang, B. N. (2008). Tourism development and economic growth—a nonlinear approach. *Physica A: Statistical mechanics and its applications*, 387(22), 5535-5542, DOI: 10.1016/j.physa.2008.05.037
- Oshota, S. O., & Badejo, A. A. (2014). The impact of remittances on economic growth in Nigeria: An error correction modelling approach. *Zagreb International Review of Economics & Business*, 17(2), 21–43.
- Jawaid, S. T., & Raza, S. A. (2016). Effects of workers’ remittances and its volatility on economic growth in South Asia. *International Migration*, 54(2), 50–68.
- Jushi, E.; Hysa, E.; Cela, A.; Panait, M.; & Voica, M.C. (2021). Financing Growth through Remittances and Foreign Direct Investment: Evidence from Balkan Countries. *Journal of Risk and Financial Management* 14 (3): 1-17. <https://doi.org/10.3390/jrfm14030117>
- Rasool, H., Maqbool, S. & Tarique, M. (2021). The relationship between tourism and economic growth among BRICS countries: a panel co-integration analysis. *Future Business Journal*, 7(1) <https://doi.org/10.1186/s43093-020-00048-3>
- Ramirez, M. D. (2013). Do financial and institutional variables enhance the impact of remittances on economic growth in Latin America and the Caribbean? A panel co-integration analysis. *International Advances in Economic Research*, 19(3), 273–288.
- Sapkota, C. (2013). Remittances in Nepal: Boon or Bane? *The Journal of Development Studies*, 49(10), 1316-1331, DOI: 10.1080/00220388.2013.812196
- Shahbaz, M., Rehman, I.U., & Mahdzan, N.S.A. (2014). Linkages between income inequality, international remittances and economic growth in Pakistan. *Qual Quant* 48, 1511–1535. <https://doi.org/10.1007/s11135-013-9850-4>
- Simionescu, L.N.; Dumitrescu, D. (2017). Migrants Remittances Influence on Fiscal Sustainability in Dependent Economies. *Amfiteatru Economic Journal*, 19, 640–653, <https://hdl.handle.net/10419/169095>

- Sutradhar, S., R. (2020). The impact of remittances on economic growth in Bangladesh, India, Pakistan, and Sri Lanka. *International Journal of Economic policy studies*, 14, 275–295.
<https://doi.org/10.1007/s42495-020-00034-1>
- Tang, C., F. (2013). Temporal Granger causality and the dynamic relationship between real tourism receipts, real income, and real exchange rates in Malaysia. *International Journal of Tourism Research*, 15(3), 272-284, <https://doi.org/10.1002/jtr.1869>
- Tolcha, T., D., & Rao, P. N. (2016). The impact of remittances on economic growth in Ethiopia. *Indian Journal of Commerce and Management Studies*, 7(2), 1–15.
- Topxhiu, R., M., & Krasniqi, F. X. (2017). The relevance of remittances in fostering economic growth in The West Balkan countries. *Ekonomika*, 96(2), 28–42.
- Ömer Yalçinkaya, O., Daştan, M., Karabulut K. (2018). The Effects of International Tourism Receipts on Economic Growth: Evidence from the First 20 Highest Income Earning Countries from Tourism in the World (1996-2016). *Montenegrin Journal of Economics*, 14(3), 55-71, DOI: 10.14254/1800-5845/2018.14-3.4
- Yong, Q., Yuyan, L., Yuqing, Z., Jin, Z. (2018). Research on the relationship between tourism income and economic growth based on a meta-analysis. *Applied Mathematics and Nonlinear Sciences*, 3(1), 105-114, <https://doi.org/10.21042/AMNS.2018.1.00008>