FOREIGN TOURISM AND POVERTY IN PAKISTAN: AN APPLICATION OF ARDL APPROACH

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Abstract
This paper is an attempt to investigate the empirical relationship between tourism and poverty in Pakistan using the data from 1972 to 2016 by employing the Autoregressive Distributed Lag (ARDL) technique. Bounds testing procedure shows that there exists a long run relationship between tourism and poverty. The findings of the study show that tourism reduces the poverty in Pakistan. The study also gives some policies to promote tourism in Pakistan.

Keyword: Tourism, Poverty, ARDL, Bound Testing, Pakistan

1. Introduction
The developing countries are trapped in the vicious circle of poverty. These countries are focusing and devising many policies like export-led growth and tourism-led growth to break this cycle. For the South countries like Pakistan, tourism activities can be very important to ameliorate the economic conditions and standard of living of individuals. Tourism in Pakistan is regarded as a growing industry because of its diverse culture, people, landscape and especially the resources that the provinces are endowed with. Thousands of foreigners come to Pakistan every year and benefit the local communities and economy as a whole (Malik et al., 2010).

Tourism is considered to be a cogent factor in the growth of the economy. The current account deficit of a country can effectively be reduced via important in the tourism sector of the country. In the sphere of international relations tourism is considered to be a pivot around which political, economic and cultural ties of a country with the rest of the world revolve. Tourism ensures inflow of foreign exchange which can be used in building social overhead Capital Land ultimately reduces the incidence of poverty in a country (Malik et al., 2010).

The proposed link between tourism and poverty has been in the front line of the discussion by many studies, for example, Elliott-Jones 1971; Bryden 1973; Brohman 1996; Clancy 1999; Page

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The guarantee of tourism for reducing poverty in the developing countries works through the channel of economic growth. The impact of tourism on poverty results from generation of new employment opportunities and involving the most vulnerable section of the society to participate in the production of those goods and services used in the tourism (Ashley et al., 2000; Encontre, 2001).

In Pakistan, there are many recreational, gorgeous and stunning sites especially in Northern areas, which attract the tourists to visit these sites. Through tourism industry, poverty can be reduced because the tourism activities can open new arrays of job opportunities like tourist guide, hotel management services, and increase the demand of domestic goods. In other words, there is an expansion in production to meet the needs of tourists. Resultantly, domestic individuals’ incomes get enhanced and incidence of poverty falls.

The rest of paper is organized as: Section 2 explain the sources of tourism in Pakistan. Section 3 consists of relevant empirical literature review. Data, model and methodology have been discussed in section 4. Empirical results and conclusions have been explained in section 5 and 6 respectively.

2. Sources of Tourism in Pakistan

Pakistan with its diverse culture, people and landscapes has engrossed 0.8 million domestic and foreign tourists to the country and it will be doubled in next decade. Following are the major sources and types of tourism in Pakistan:

2.1 Religious Tourism

Pakistan is an Islamic state and it is famous for great shrines of religious figures of the World. Buddhist Gurdwaras at Nankanashib are the greatest attraction for the Sikhs all over the world. There are a large number of mosques and pilgrims for tourists especially Muslims.

2.2 Conventional Tourism

Festivals, sports, customs, traditions, arts and crafts are outlined in conventional tourism. Basant is the festival which is held in February-March that attracts the more foreign tourists. Moreover, the festival of Kalash tribe such as Chilimjusht also catches the attention of the domestic and foreign tourists.

2.3 Archaeological Tourism
The Mughal heritage, Badashahi Masjid, Shalimar garden, tomb of Jahangir, Noor Mahl, Shah Jahan mosque are the successive dynasties which are a magnet for the foreign tourists. The Gandhara civilization and the Indus valley are ancient civilizations to visit.

2.4 Adventure Tourism

Pakistan has the world’s highest mountains i.e. Hindukash, Pamir, Karakoram and Himalayas. Five other peaks above 8000 m include the second highest mountain of K-2 and the Glaciers offer tremendous attractions to foreign tourists.

3. Review of Empirical Literature

In this section, we have reviewed the various studies on the relationship between tourism and poverty. Various techniques have been employed like qualitative and quantitative to show the effect of tourism on poverty. The authors of assorted studies have inferred the momentous impact of tourism on poverty through earnings of foreign receipts which directly and indirectly improve the standard of living of poor households. Some studies have also showed the adverse effects of tourism sector on poverty. Now we present some studies that have explored the relationship between foreign tourism and poverty.

Dutta et al. (2011) highlighted poverty alleviation through sustainable tourism in the city of Kolkata by employing the qualitative and quantitative methodology. The data were collected from 120 domestic and international tourists with the help of questionnaire and from published material. The study pointed out that tourism has the significant impact on the development of Kolkata.

Mbaiwa (2011) explored the relationship between tourism and poverty in Okavango Delta and Botswana by using the primary and secondary data. The author used the qualitative technique to explain the relationship between tourism and different economic and environmental variables. The findings of the study exhibit that tourism increases the employment and income but is not a good source for reducing rural poverty. Aref (2010) explained the tourism industry for poverty reduction in Iran by employing the numerical analysis. The author used the qualitative data collected from the Focus Group Discussion (FGD) of 65 individuals of 57 years old from different villages and concluded the negative attitude of individuals towards tourism performance against poverty. Okech (2010) explained the performance of tourism in Africa by focusing on poverty alleviation using qualitative approach. The author showed the importance of tourism to create the revenue, foreign exchange earnings, government revenue and employment generation through sustainable tourism in Africa. This study determined some key issues and
leakages in economic factors to promote the performance of tourism. The author explained different economic problems which cause through poverty like low per capita income and low standard of living of households and poor education. Nazar et al. (2010) determined the Marketing strategies for developing the tourism and its impact on the poverty alleviation in Sindh by using the primary data of 2000 households. The findings of this study demonstrate that tourism contributes significantly in education, shelter, health and in economic factors. The authors concluded that tourism has a positive impact on poverty that is tourism improves the standard of living of all concerned districts of Sindh. Rueegg (2009) explained the significance of tourism on poverty through supply chain linkages in the Bolivian Altiplano using primary data by employing qualitative methodology. The findings of this study confirmed some barriers and the author showed that government of Altiplano was not supporting small farmers so there are weak linkages between tourism-agriculture. Due to that reason, tourism is not a good strategy for reducing poverty. Fernando et al. (2009) investigated the recent changes in Sri Lanka and implications for poverty reduction by employing the qualitative approach using the examples of other Asian and European countries. This study illustrated that tourism has positive impact on poverty and suggested the role of government to provide facilities to tourists. Blake et al. (2007) observed the tourism and poverty relief in Basil by using the computable general equilibrium (CGE) model and numerical simulation approach. The authors have used the secondary data of 54 industries, 6 factors of production and 4 households groups. The findings of this study show that tourism has strong significant impact on low income households and directly and indirectly, poor individuals overall benefited through tourism. Vanegas et al. (2007) examined the poverty, economic expansion with tourism in Nicaragua using the data from 1980 to 2005 employing the co-integration and causality techniques. The findings of this study explained that tourism expansion increased economic growth and expansion in growth resulted in poverty reduction and improved the balance of payment of Nicaragua. Goodwin (2006) explored measuring the exposure and impact of tourism on poverty using the secondary data in Egypt and monitoring data in Tanzania and quarterly data collected from informal sector of Gambia during 2001 to 2003. The findings revealed that tourism reduced poverty. The author has suggested for promoting data efficiency to increase the impact of tourism.

These studies have concluded both the positive and negative impacts of tourism on poverty. In some studies, authors have pointed out some barriers in the way of reducing poverty. In other
studies, the authors have observed that individuals disagree with tourism activities like in case of Botswana and Bolivian Altiplano but for the situation of Pakistan, Nicaragua and India, these studies have showed that tourism reduces poverty.

4. **Data Model and Methodology**

4.1 Data

We have taken the data for this study from Pakistan Economic Survey (various issues), published by Ministry of Finance, government of Pakistan. The data have also been acquired from the Hand Book of Statistics on Pakistan economy (2010), published by the State Bank of Pakistan. Some pieces of information have also been collected from social economic indicators published by World Tourism Division. A number of research studies have also been consulted for this study to understand the subject matter and issues.

4.2 Model and Methodology

The methodology employed for this study is Autoregressive Distributed Lag (ARDL). The model building, the construction of variables and their estimation process have been explained as follows:

4.2.1 Bounds Testing Procedure

Firstly, we apply the bounds test to verify the long run relationship between tourism and poverty as it is an essential and 1st step in ARDL technique before estimating the coefficients of different models. F-statistic is a joint test of significance is used in ARDL approach. We have used two variables for tourism sector (number of tourists and tourism receipts) in poverty equations. The ARDL specification of tourism-poverty model with number of tourists is as follows:

\[
\Delta(HC)_t = \alpha + \beta_0(HC)_{t-1} + \beta_1(NTOUR)_{t-1} + \beta_2(RGDP)_{t-1} + \beta_3(RREM)_{t-1} + \\
\beta_4(UN)_{t-1} + \beta_5(RTGE)_{t-1} + \sum_{i=1}^{p_1} \lambda_1\Delta(HC)_{t-i} + \sum_{i=0}^{p_2} \lambda_2\Delta(NTOUR)_{t-i} + \sum_{i=0}^{p_3} \lambda_3\Delta(RGDP)_{t-i} + \\
+ \sum_{i=0}^{p_4} \lambda_4\Delta(RREM)_{t-i} + \sum_{i=0}^{p_5} \lambda_5\Delta(UN)_{t-i} + \sum_{i=0}^{p_6} \lambda_6\Delta(RTGE)_{t-i} + \epsilon_t
\]  

(1)

Where HC is headcount ratio used as proxy for poverty. NTOUR is number of tourists, RGDP is real gross domestic product, RREM is real remittances, UN is unemployment and RTGE is real total government expenditures.

The null and alternative hypotheses under F-statistic are as:

\[H_0: \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0\]

\[H_1: \beta_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0\]
The calculated value of F-statistic is compared with the critical value of Pesaran (1999). The other specification of the tourism-poverty model by using the tourism receipts and other variables in the model is same except real foreign direct investment and tourist receipts.

\[
\Delta(HC)_t = \alpha + \beta_0(HC)_{t-1} + \beta_1(TREC)_{t-1} + \beta_2(RGDP)_{t-1} + \beta_3(RFDI)_{t-1} + \\
\beta_4(UN)_{t-1} + \beta_5(RTGE)_{t-1} + \sum_{j=0}^{p_1}\lambda_{j1}\Delta(HC)_{t-j} + \sum_{j=0}^{p_2}\lambda_{j2}\Delta(TREC)_{t-j} + \sum_{j=0}^{p_3}\lambda_{j3}\Delta(RGDP)_{t-j} + \\
+ \sum_{j=0}^{p_4}\lambda_{j4}\Delta(RFDI)_{t-j} + \sum_{j=0}^{p_5}\lambda_{j5}\Delta(UN)_{t-j} + \sum_{j=0}^{p_6}\lambda_{j6}\Delta(RTGE)_{t-j} + \epsilon_t
\]  

(2)

Where TREC are the number of tourists, RFDI are the real foreign direct investment and the remaining variables are same as above.

For this model the tabulated and calculated values are compared for the possible result of given technique.

The null and alternative hypothesis are constructed same as follows

\[H_0 : \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0\]

\[H_1 : \beta_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0\]

The F-computed value is larger than Pesaran (1999) value we reject the assumption of no relationship and vice versa.

5. Empirical Results and Discussions

5.1 Bounds Test for Co-integration

Bounds test is used to test the existence of long run relationship among variables. For this purpose, we form two equations and calculate the F-statistics of each equation then compare it with the upper bound of Pesaran (1999) at 95% level of probability. The rule is that if the computed F value is greater than the upper bound then the variables are co-integrated suggesting the long run relationships among variables. Bounds test results of both the equations are depicted in Table 1.
Table 1. Results of Bounds test for Co integration

<table>
<thead>
<tr>
<th>Equation</th>
<th>F-statistic</th>
<th>Upper bound</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC/NTOUR,RGDP,RREM,UN,RTGE</td>
<td>3.79</td>
<td>3.23 (95%)</td>
<td>Co integration</td>
</tr>
<tr>
<td>HC/TREC,RGDP,RFDI,UN,RTGE</td>
<td>4.14</td>
<td>3.23 (95%)</td>
<td>Co integration</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations

From Table 1, it can be observed that the calculated value of F-statistics of equation (1) and (2) are 3.79 and 3.14 respectively and the tabulated value is 3.23 at 95% as the computed value is greater than the upper bound so the conclusion is cointegration.

5.2 Long Run Results of Number of Tourists for Poverty

In this section, we have estimated the long run relationship among variables using ARDL technique. The results are shown in Table 2. The dependent variable is head count ratio (HC). The explanatory variables are number of tourists, real gross domestic product, real remittances, unemployment and real total government expenditures. The coefficient of real gross domestic product (RGDP) is negative but statistically insignificant. Results of this study are in line with the results of Agrawal (2008), Afzal (2009) study which suggest that economic growth reduces poverty.

Table 2. Long Run Effects of Number of Tourist on Poverty

<table>
<thead>
<tr>
<th>Dependent Variable: HC, SBC (2,2,0,1,2,0)</th>
<th>Coefficient</th>
<th>T-ratio [Probability]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RGDP</td>
<td>-.7264</td>
<td>-1.0276 [.314]</td>
</tr>
<tr>
<td>RREM</td>
<td>-.0074674</td>
<td>-1.7581 [.091]</td>
</tr>
<tr>
<td>NTOUR</td>
<td>-.9745</td>
<td>-1.4249 [.167]</td>
</tr>
<tr>
<td>UN</td>
<td>25.1836</td>
<td>1.5849 [.126]</td>
</tr>
<tr>
<td>RTGE</td>
<td>-.0040482</td>
<td>-2.1698 [.040]</td>
</tr>
<tr>
<td>C</td>
<td>62.1060</td>
<td>3.6287 [.001]</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations

Real remittances (RREM) are also negatively related with poverty and statistically significant. This result corroborated with the findings of Irfan, M. (2011) and Klein et al. (2001) which also show that real remittances can significantly reduce incidence of poverty. The coefficient of
number of tourists is also negative which shows that when number of tourists increase, poverty reduces. As tourism is part of the service sector which create jobs for individuals and helps earning foreign exchange and improves the balance of payment which reduces poverty. Our results are similar to the results of Goodwin (2006), Nazar et al. (2010) and Dutta et al. (2011). The coefficient of unemployment (UN) is positive. Our results are compatible with the findings of Gillani et al. (2009). Real government expenditures have negative relationship with poverty, here findings of Musahara, H (2004) supports the result of this study.

5.3 Long Run Results of Tourists Receipts for Poverty

In this section, we have explained the long run results of tourist receipts equation. In this model, we have replaced two variables i.e. real remittances with foreign direct investment and number of tourist with tourist receipts. The results are depicted in Table 3 and the dependent variable is head count ratio (HC). The first variable real gross domestic product (RGDP) is negatively related with poverty.

<table>
<thead>
<tr>
<th>Dependent Variable: HC, SBC (2,2,0,2,0,2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Variables</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>RGDP</td>
</tr>
<tr>
<td>RFDI</td>
</tr>
<tr>
<td>TREC</td>
</tr>
<tr>
<td>UN</td>
</tr>
<tr>
<td>RTGE</td>
</tr>
<tr>
<td>C</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations.

The coefficient of real foreign direct investment (RFDI) is also negative which shows the inverse relationship between poverty and RFDI. Our results are matched with that of Mahmood et al. (2012) and Klein et al. (2001). Tourist receipts are also statistical significant at lower level of probability and the coefficient is negative which shows that when tourist arrivals increase in homeland the demand of domestic goods and services increases which results in the increase of foreign exchange earnings and ultimately the balance of payment improves leading to the
increase in income and standard of living of domestic residents. Tourist receipts have the significant impact on poverty and the result is confirmed by the findings of the earlier studies as Fernando et al. (2009), Okech (2010) and Blake et al. (2007). The coefficient of unemployment is positive which shows that there is positive relationship between poverty and unemployment; the findings of this study are supported by the findings of Gillani et al. (2009). The coefficient of real total government expenditure is negative exhibiting that government expenditure is inversely related with poverty it means that when government expenditure increases poverty reduces, Musahara (2004).

5.4 Error Correction Results of Number of Tourist and Poverty

Now we explain the error correction results of equation (1) presented in Table 4. Error correction term shows the adjustment time towards equilibrium. The sign of parameter of error term is negative and significant exhibiting that the error or shock would be corrected less than half within a year.

<table>
<thead>
<tr>
<th>Table 4. Error Correction Results of Number of Tourists and Poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable: ΔHC, SBC (2,2,0,1,2,0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>T-ratio[Prob]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔHC1</td>
<td>.54123</td>
<td>2.4817 [.020]</td>
</tr>
<tr>
<td>ΔRGDP</td>
<td>-.1229</td>
<td>-3.6413 [.719]</td>
</tr>
<tr>
<td>ΔRGDP1</td>
<td>.0011090</td>
<td>2.4681 [.020]</td>
</tr>
<tr>
<td>ΔRREM</td>
<td>-.0012501</td>
<td>-2.0013 [.056]</td>
</tr>
<tr>
<td>ΔNTOUR</td>
<td>-.1609</td>
<td>-2.0376 [.051]</td>
</tr>
<tr>
<td>ΔUN</td>
<td>1.0169</td>
<td>.78868 [.437]</td>
</tr>
<tr>
<td>ΔUN1</td>
<td>3.1585</td>
<td>2.3036 [.029]</td>
</tr>
<tr>
<td>ΔRTGE</td>
<td>-.6777</td>
<td>-2.2945 [.030]</td>
</tr>
<tr>
<td>ΔC</td>
<td>-10.3968</td>
<td>-2.2378 [.034]</td>
</tr>
<tr>
<td>ecm(-1)</td>
<td>-.1933</td>
<td>-3.6770 [.001]</td>
</tr>
<tr>
<td>R-squared</td>
<td>.71648</td>
<td></td>
</tr>
<tr>
<td>R-Bar-squared</td>
<td>.57471</td>
<td></td>
</tr>
<tr>
<td>DW-statistic</td>
<td>2.0646</td>
<td></td>
</tr>
</tbody>
</table>
F-statistics & 6.7383 \\
& (.000)

Source: Authors’ calculations

The speed of adjustment is approximately 19% annually as the value is -.1933. T-ratio shows that error term is statistical significant at 1% level of significance. The sign of the coefficients of all variables remaining same as in long run results and they are all significant in short run except unemployment. The value of R-square is 0.72 which shows that approximately 72 percent variations in dependent variable. The value of Durbin-Watson (DW) test is 2.064 which indicates that there is no autocorrelation, and from the value of F-statistic, this equation or model in short run is overall highly significant.

5.5 Error Correction Results of Tourists Receipts and Poverty

In this section, we have examined the error correction results of equation (2). Table 5 shows that the sign of error correction term is negative which indicate the convergence process towards equilibrium. The adjustment speed is approximately 83% annually as the value is -.83368 and it is statistically highly significant. The sign of variables in the process of error correction mechanism at first order is same as in long run but tourist receipts (TREC) and real total government expenditure (RTGE) change their signs at second order. The value of R-square is 0.80 which shows that 80% variation is explained. Durbin-Watson test value is 2.1534 which show that there is no autocorrelation. The F-statistic shows the equation is overall highly significant.

Table 5. Error Correction Results of Tourist’s Receipts and Poverty

<table>
<thead>
<tr>
<th>Dependent variable=ΔHC, SBC (2,2,0,2,0,2)</th>
<th>Independent variables</th>
<th>Coefficient</th>
<th>T-ratio[Prob]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔHC1</td>
<td>.86516</td>
<td>4.9100[.000]</td>
<td></td>
</tr>
<tr>
<td>ΔRGDP</td>
<td>-.7798</td>
<td>-2.4524[.021]</td>
<td></td>
</tr>
<tr>
<td>ΔRGDP1</td>
<td>9219</td>
<td>-2.7386[.011]</td>
<td></td>
</tr>
<tr>
<td>ΔRFDI</td>
<td>-.0040389</td>
<td>-5.9161[.000]</td>
<td></td>
</tr>
<tr>
<td>ΔTREC</td>
<td>-.018660</td>
<td>-1.5429[.135]</td>
<td></td>
</tr>
<tr>
<td>ΔTREC1</td>
<td>.034261</td>
<td>2.4631[.021]</td>
<td></td>
</tr>
<tr>
<td>ΔUN</td>
<td>2.3419</td>
<td>3.3024[.003]</td>
<td></td>
</tr>
</tbody>
</table>
6. Conclusion and Policy Implications

In this study, we have investigated the relationship between tourism and poverty in Pakistan. We have employed the ARDL approach for the period of 1972 to 2016 to explore the tourism poverty nexus. The findings of the study reveal that number of tourists and tourism receipts decrease the incidence of poverty in Pakistan because tourism activities create the opportunities of employment and income. Thus, sustainable tourism sector is important for reducing poverty in Pakistan.

The following suggestions are put forward for the development of tourism industry in Pakistan:

- Government should provide security to foreign tourists.
- Government should form a management system to provide a good transportation and communication facility to attract foreign tourist.
- The civilizing and customary festivals should be arranged to attract foreign tourists. Pakistan Tourism Development Corporation (PTDC) should form a good system for tourism guidance.
- Government of Pakistan and tourism management should form a good system of electronic media to show the importance of tourist sites for the development of tourism industry in Pakistan.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTGE</td>
<td>- .2060</td>
<td>- .82316 [.418]</td>
</tr>
<tr>
<td>ARTGE1</td>
<td>.0014251</td>
<td>4.6859 [.000]</td>
</tr>
<tr>
<td>ΔC</td>
<td>32.8650</td>
<td>3.7625 [.001]</td>
</tr>
<tr>
<td>ecm(-1)</td>
<td>- .83368</td>
<td>- 4.2220 [.000]</td>
</tr>
<tr>
<td>R-squared</td>
<td>.80058</td>
<td>R-Bar-squared</td>
</tr>
<tr>
<td>DW-statistic</td>
<td>2.1534</td>
<td>F-statistic</td>
</tr>
<tr>
<td>Prob.(F-statistics)</td>
<td>[.000]</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ calculation
References


