Tourism Development in BRICS: Unraveling the Role of Foreign Direct Investment & Trade

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ARTICLE DETAILS

ABSTRACT

This article presents the findings of a study that utilized a panel ARDL (autoregressive distributive lag) model to scrutinize the association of foreign direct investment (FDI), trade, human capital, government expenditures, with tourism in the BRICS nations. The research analyzed data spanning the period from 1995 to 2020 and unveiled crucial insights into the dynamics influencing tourism development in these countries. The results revealed that FDI, trade, and human capital demonstrated positive associations with the tourism sector, in the short and long time period. These factors played a significant role in boosting tourism activities within the BRICS (Brazil, Russia, China, India & South Africa) nations. However, an inverse correlation was observed between government expenditures and tourism during the same time frame, suggesting the need for careful allocation and optimization of public funds to enhance the sector's growth and performance. This study sheds light on the complex interplay between various determinants of tourism development in BRICS countries, providing valuable implications for policymakers and industry stakeholders.

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1. Introduction

Tourism is a socio-cultural phenomenon that attracts visitors from both domestic and international locations for personal, professional, economic, recreational, and other purposes (Chaudhry et al., 2022). It serves as a vital and sustainable source of economic development, promoting entrepreneurship, and generating revenue for hotel management, facilitating foreign exchange, and fostering business opportunities. Additionally, tourism plays a pivotal role in addressing poverty, fostering peace-building efforts, and facilitating the exchange of cultural values (Arshad et al., 2018). Tourism is recognized as the largest non-voluntary global currency allocation earning a commendable reputation in the global economy. It provides an excellent opportunity for individuals from diverse
Tourism has evolved into a vital factor driving economic growth and advancement in countless nations across the globe (Meo et al., 2021). Over the years, the tourism industry has witnessed substantial transformations, fueled by factors such as globalization, technological advancements, and increased international travel. In this context, Foreign Direct Investment (FDI) has proven to be an important catalyst in shaping the growth and performance of the tourism sector. As nations seek to tap into the vast potential of tourism, attracting foreign investments has become a priority for policymakers and industry stakeholders alike. Internationalization is a frequent characteristic connecting FDI as well as tourism, however only a handful of empirical studies have examined the extent to which they are connected (Khan et al., 2020). Tourism may include transport to the main location as well as local transportation, accommodation as well as entertainment, leisure shopping, and food. In the present, there is a consensus among the public that growth in tourism must be sustainable, but the method to accomplish this remains a topic of debate. Certain, many industries play a crucial part in the expansion of countries, however the tourism has emerged the most outstanding industries in the last few years and has been a major impacting business around the world. Additionally it is a process performed by non-residents of any country to spend their time away from the normal surroundings for various reasons; vacation, work or research, family, and religious ceremonies for a certain duration. The rate of international tourism arrivals has significantly in recent years. Tourism and international trade have long been interconnected, forming a symbiotic relationship that profoundly influences the economies of nation’s worldwide (Musa et al., 2021; Yang et al., 2021; Chaudhry et al., 2021). As globalization continues to bridge borders and facilitate international transactions, the dynamics between trade and tourism have evolved significantly (Anwar et al., 2016; Faheem et al., 2021; Farooq et al., 2020). The exchange of goods and services across borders has not only fostered economic growth but also played a pivotal role in shaping the tourism landscape (Ali et al., 2020). Many studies have been proved the linkage between above mentioned variables. The evidence in the form of mixed and ambiguous in different regions including BRICS.

In the realm of tourism, human capital emerges as a paramount factor that not only influences the industry's success but also shapes the overall experiences of travelers. As the tourism sector continues to evolve in response to changing global trends and heightened customer expectations, the significance of skilled and knowledgeable human resources becomes increasingly apparent. Human capital positively contributed in overall tourism sector development. The tourism industry, being a vital driver of economic growth and a source of employment, has consistently featured as a priority sector in the developmental agendas of nations worldwide (Li & Qamruzzaman, 2022; Chaudhry et al., 2021). In the pursuit of bolstering tourism and realizing its immense potential, governments play a pivotal role as enablers and regulators. The allocation of public funds for tourism-related initiatives and infrastructure development holds the promise of transforming destinations into thriving hubs for travelers and fostering sustainable growth (Kožić, 2019; Chaudhry et al., 2019; Faheem et al., 2022).

Government spending is intricately intertwined with the tourism sector, forming a crucial...
connection that shapes the industry's growth, sustainability, and overall influence. By strategically allocating resources, governments hold significant sway over activities related to tourism. An essential aspect lies in the development of infrastructure; investments in roads, airports, and transportation networks not only improve access to tourist spots but also enhance seamless travel experiences (Farooq et al., 2021; Obi & Ogbeide, 2022; Tanveer et al., 2022). Additionally, governments allocate funds to promote their nations as appealing tourist destinations, effectively showcasing unique attractions to a global audience. This, in turn, can substantially increase the number of visitors, thereby boosting local economies. Cultural preservation and the maintenance of heritage sites also fall within the purview of governments, as these treasures attract tourists seeking authentic and immersive experiences. Through allocating funds to protect historical monuments and natural marvels, governments safeguard their allure and enrich the tourism landscape. Equally critical is ensuring safety and security; given that tourism’s success hinges on travelers' confidence, governments invest in law enforcement, emergency services, and proactive security measures to foster a secure environment for visitors (Meo et al., 2018; Khan et al., 2020; Faheem et al., 2022). Environmental conservation closely aligns with the sustainable trajectory of tourism, as the beauty of nature is a significant draw for travelers. To this end, government funding often supports conservation efforts, preserving ecosystems and habitats to uphold the intrinsic appeal of destinations. Concurrently, governments nurture tourism-specific infrastructure, encompassing hotels, resorts, and recreational facilities, catering to diverse visitor preferences and expanding the industry's capacity. However, the relationship goes beyond tangible assets (Tanveer et al., 2021). Government-shaped regulatory frameworks and policies mold the tourism landscape by encouraging responsible practices, ensuring fair distribution of economic benefits, and safeguarding local communities. Simultaneously, investments in training and workforce development enhance service quality, equipping professionals with the skills needed to provide exceptional experiences to tourists. Funding directed toward cultural events, festivals, and attractions invigorates the sector by injecting vibrancy into local economies, fostering cultural exchange, and generating memorable experiences. Beyond economic stimulation, government backing is crucial for research and data collection, which informs strategic decision-making, facilitates sustainable planning, and identifies trends that shape the industry's trajectory (Sokhanvar & Jenkins, 2022; Faheem et al., 2022; Stauvermann & Kumar, 2017). The symbiotic relationship between government spending and tourism underscores the sector's pivotal role in economic development. As governments strategically allocate resources, tourism emerges as a robust generator of employment, revenue, and foreign exchange earnings. Often, the sector becomes a cornerstone of national economic diversification, mitigating reliance on single industries and fostering resilience (Khan et al., 2020; Köksal, 2021; Chaudhry et al., 2021; Tanveer et al., 2022).

The article presents a significant research contribution by employing a panel ARDL model to investigate the interrelationships among foreign direct investment (FDI), trade, human capital, government expenditures, and tourism in the BRICS nations. The study covers data from 1995 to 2020 and provides valuable insights into the dynamics affecting the tourism sector in these emerging economies. The findings offer valuable insights for policymakers and industry stakeholders, guiding them in formulating effective strategies to enhance the tourism sector’s growth, competitiveness, and sustainability in these emerging economies.

The remaining sections of the article is as following: The literature review section critically examines and synthesizes existing scholarly works related to the research topic. The research design, data assortment process, and analytical technique are explained in detail in the data and methodology section. The results and discussions section presents the findings of the data analysis. The conclusion section summarizes the main findings of the study and restates the research objectives.
2. Literature Review

Zafar et al. (2023) inspected the relationship among economic growth, trade, tourism, and ICT in the BRICS countries. Cross sectionally auto regressive distributive lag model technique was used in this study. Data was used in this research over the time period from 1990 to 2019. Results were showed that there was negative impact of trade, economic growth and tourism on environment. Farooq et al. (2023) explored the relationship foreign direct investment, economic growth and trade on tourism in GCC countries. Data sample collect over the time period from 1996 to 2019. In the GCC countries pollution haven hypothesis have a great role in the tourism sectors. Roumiani et al. (2023) revealed that economic growth, human capital and tourism in tourism countries. Twenty four year data period was used over the time period from 1995 to 2019. Study results were showed that there was a possible relation between selecting variables.

Nasir et al. (2015) revealed the association among economic growth and tourism in the determined the liaison between tourism and GDP in the selected the country that was Spain. The data were gathered using time series for the period of 2005 until 2012 and through an analysis of multiple regressions find the fact that tourism from abroad has played significant contributions to the economic growth of Andalucia. Khan et al. (1995) in their study of the impact of travel on growth concluded the existence of direct in the multiplier effect, indirect, and induced impacts of tourism on the economy. The direct effect is the initial income stream from travel and tourism agencies and hotels. The indirect effect is derived from the earlier agents purchasing the necessary inputs to their businesses and the induced effect results from spending on non-related products and services. An analysis by Lee and Kwon. (1995) further emphasized the significance of foreign tourism revenues as an engine of growth, revealing that the multiplier effect of tourism can create jobs that have a higher value. This research has led governments to view tourism as a key sector. Ahmed et al. (2017) studied the effect of the exchange rate on exports for Pakistan. The results of the study revealed that exchange rate has an impact that is negative, but not significant on the exports and World’s income has a significant optimistic impact on exports.

Haseeb and Rubaniy. (2014) investigated the affiliation between the instability of exchange rates and sectoral exports in the case of Pakistan. In this study sectoral exports was used dependent variables exchange rate, GDP and tourism were used as independent variables. The study results revealed that food exports and exchange rate have negative relationship. Mustafa and Nishat. (2004) investigated the correlation between the fluctuation of exchange rates and expansion in exports of Pakistan. Outcomes were showed that there was a negative relationship between the two significant trade partners UK and USA and USA, whereas in the instances that of India and Pakistan. Sokhanvar. (2019) studied the indirect and direct impacts from FDI on the development of 7 European Union (EU) countries with astonishing levels of tourism revenue as well as FDI within their economy. The large percentages of GDP from tourism revenue and FDI in these countries indicate that policymakers view the receipts from tourism and FDI as key factors that can accelerate economic growth. Utilized the impulse response serve as a supplement to exogeneity Wald test, this study demonstrates that this is not just an illusion. The FDI effect is negative on the development of five countries, and it is also a surprising driver of the tourism in no of the countries we studied.

Rahaman et al. (2022) studied the effects of foreign direct investment (FDI) and tourism consumption of electricity, and emission of CO2 from Bangladesh in the period 1990 to the year 2019. The results of the empirical study show that electricity consumption, FDI have significant and positive effects over the long term in CO2 emission. Tourism however has a negative influence. The GDP square adversely affected. This means that the EKC postulate has been proven to be true. The results of FDI are
significant and negative. The ECM is also statistically significant and negative. Based on these results the whole system is adjusting to 60 percent. It is estimated that the Granger causality study provides the possibility of a causal link between the use of electricity and CO2 emissions. Emissions as well as economic growth the consumption of electricity and economic development and FDI as well as CO2 emissions.

Siddique and Siddique (2019) conducted a study investigating the relationship between travel, foreign direct investment (FDI) flows, and macroeconomic variables in Pakistan from 1979 to 2017. The results of the co-integration test demonstrate that tourism, FDI, GDP, inflation rate, exchange rate, and trade openness are co-integrated. The VECM model outcomes reveal the existence of long-term causality paths: from GDP, tourism, inflation, and exchange rate to trade openness, FDI, and exchange rate in Pakistan. These include causal links from FDI to tourism, from GDP to FDI, from FDI to inflation, and between trade openness and FDI. Additionally, causality is observed from tourism to GDP, and from tourism to inflation, as well as from trade openness to GDP, and from exchange rate to trade openness.

Khaliq and et al. (2019) revealed an empirical the survey method was employed and the primary data was collected by utilizing a structured questionnaires. The results showed that two of the six hypotheses were confirmed. Particularly, customer capital been identified to be one of the main elements of intellectual capital in the model. The research results revealed that total impact of intellectual capital is on the overall performance of SMEs. Results provide more insight into the impact that the various components of intellectual capital can have on the organizational performance of SMEs especially when compared to Pakistan.

Khan et al. (2022) undertook an exploration of the challenges confronted by the tourism sector. The study revealed that security concerns, infrastructure limitations, and the influence of inflation are significant factors impacting the tourism industry. Pakistan’s potential in the realm of tourism is immense, boasting towering mountains, pristine lakes, and captivating natural landscapes, making it a favored destination for adventurous travelers both domestic and international. As a developing nation, Pakistan has actively promoted tourism to drive economic growth and elevate the quality of life for its populace. Presently, the country is witnessing a remarkable surge in tourist arrivals, positioning tourism as a pivotal component in Pakistan’s growth strategy. Nonetheless, despite the apparent growth in the Pakistani tourism sector, the overall progress in terms of social and economic development hasn’t been as robust as desired. Pakistan encounters numerous obstacles in the advancement of its tourism industry, a fact substantiated by research conducted within the country. Muhammad et al. (2019) investigated the effects on quality of tourism institutions, and FDI on environmental degradation in Pakistan. Data was used in this study over the time span from 1996 to 2017 and 2000 to 2017. Ordinary Least Square (OLS) regression was used to estimate the results of this study. Results of this study were showed that tourism have relationship with pollution in Pakistan. Foreign direct investment also have impact on environment and insignificant in both long and short time period.

Iftikhar et al. (2022) considered the impact the impact of travel on sustainability looking at the quality of the institution as a moderating factor. In addition, exchange rates urbanization consumption of household’s per capita income and the amount of renewable energy per person were all important factor in the determination of smooth development. The results of GMM proved statistically relevant and positive character of sustainable development as well as its relation to tourism as well as other determinants, at a significance level of one percent to BRI countries. The quality of institutions boosted the 4.693 percent sustainability pathway to reach sustainability goals (SDGs) agenda, with countries
that are interconnected to the regional level at an significance level of 1. The per-capita amount of renewable energy and per capita income played an important and positive impact, whereas currency exchange rates, consumption by households and urbanization adversely impacted negatively on the direction of sustainable development. Khalid et al. (2021) studied the impact on regional trade agreements (RTAs)--including free trade and preferential deals, unions of customs and ordinary markets on mutual travel flows. Study examine the impacts and used the gravity panel data set that includes 163 destinations as well as 171 sources countries and 13,589 countries-pairs between 1995 to 2015. These results highlight the importance of a strong integration in the economy in encouraging global tourism flow. Strategies aimed at improving the integration of a nation's economy with other countries can assist in encouraging international tourist flows.

Kumail et al. (2023) inspected the possible impacts of growth in the economy and the emission of carbon dioxide, commerce and energy usage on the development of tourism in Pakistan between 1980 and the year 2018. The study utilized the technique of Autoregressive Distributed Lagged to calculate simultaneous association. The research showed an impact positive of energy consumption as well as economic growth and trade openness in tourism. The expansion of tourism in Pakistan, however, has been negatively impacted by CO2 emissions, according to this study. The study also used a cutting-edge accounting technique to provide reliable findings. The study found a unidirectional causal relationship between the study variables based on Toda Yamamoto's causality model. The findings point to a shift in investment choices, with policymakers and the government advising investments in the least polluting segment of the economy the service sector rather than the polluting industrial sector. As a result of the environmentally and economically sustainable expansion, this may help draw tourists.

Azmi et al. (2022) studied the Indian foreign trade and tourism relation and SAARC countries. In order to attain this goal panel cointegrations, it’s applied over a time which spans the twenty two years period 1997 to 2018. The consequences of both the cointegration tests of the first and second generation tests revealed that there is a long-term equilibrium between tourism, export and import. While there are a few distinctions between the two relationships, the results of the autoregressive distributed lagged approach shows strong connections over the long term between tourism and trade. The possibility of exports that have a positive impact on the number of tourists visiting a country is that the goods sold on international markets enhance the visibility and perception of a nation ultimately leading to more visitors. Additionally, increasing exports are likely to boost business travel and increase leisure travel and thus a strong connection between tourism and exports. However one possible explanation for the positive impact of tourism-related imports could be that destinations which offer tourists products that are based on their own tastes make it easier for tourists to visit these destinations. The results presented in study have significant implication for extending India's tourism presence in the area.

3. Methodology
To examine the effect of foreign direct investment, trade, human capital and government expenditures on tourism in BRICS. The model specifications are presented in the following way:

\[ TRM = f(FDI, TR, HC, EXP) \]

In the following:
- TRM = Tourism
- FDI = Foreign direct investment
- TR = Trade
- EXP = Government Expenditures
- HC = Human Capital
The coefficients $\beta_2$, $\beta_3$, $\beta_4$ and $\beta_5$ are the elasticity's of tourism with respect to the foreign direct investment, trade, human capital and government expenditures. The data is taken from WDI from 1995 to 2020. The variable FDI proxied by TRM by international tourism, number of arrivals, foreign direct investment inflows (%GDP), HC by school enrollment, secondary (%Gross), TR by trade (%GDP), EXP by government final consumption expenditures (Constant 2015 US$).

The study employs Panel ARDL to reveal our objective. The logic of employing a panel ARDL (Autoregressive Distributed Lag) model lies in its ability to address certain limitations associated with conventional time series or cross-sectional data analysis methods (Umar et al., 2021; Faheem et al., 2023; Tanveer et al., 2023). The panel ARDL approach combines the advantages of both panel data and autoregressive distributed lag models, making it a suitable choice for investigating complex interrelationships among variables over time and across different entities. The ARDL model accounts for the time series dynamics by incorporating lagged values of the dependent and independent variables. In the context of studying economic phenomena, many relationships are characterized by lags and may not be immediately evident from a simple cross-sectional analysis. In economic and social research, endogeneity and bidirectional causality are common issues (Faheem et al., 2021; Chaudhry et al., 2022). The panel ARDL model can address endogeneity concerns through the inclusion of lagged dependent variables and instrumental variables, if necessary. This helps in establishing causal relationships between variables more robustly (Farooq et al., 2022). Panel ARDL can provide efficient estimates even with relatively small sample sizes. This is advantageous in cases where cross-sectional observations may be limited, especially when analyzing data over an extended period (Farooq et al., 2023). Panel ARDL enables researchers to conduct various tests to determine the appropriate lag lengths, detect structural breaks, and evaluate model stability (Farooq et al., 2022).

4. Results and Discussion

The study employs panel ARDL to assess our objective. Table 4.1 explains the descriptive statistics and correlation matrix. Descriptive statistics provides a basic overview of the main features of a dataset, allowing researchers and analysts to understand the data's characteristics, patterns, and distributions (Faheem et al., 2022; Farooq et al., 2023). A correlation matrix is a table that shows the correlation coefficients between multiple variables in a given dataset (Tanveer et al., 2023; Farooq et al., 2023). It is a fundamental tool in statistics and data analysis, used to understand the relationships and associations between variables like TRM, FDI, HC, EXP and TR. The correlation coefficient measures the strength and direction of the linear relationship between two variables, ranging from -1 to 1 (Anwer et al., 2023).

<table>
<thead>
<tr>
<th></th>
<th>TRM</th>
<th>FDI</th>
<th>HC</th>
<th>EXP</th>
<th>TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>13006599</td>
<td>1.892877</td>
<td>85.78523</td>
<td>2.06E+11</td>
<td>43.44294</td>
</tr>
<tr>
<td>Median</td>
<td>7518000.</td>
<td>1.753125</td>
<td>91.82773</td>
<td>2.12E+11</td>
<td>46.51812</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.34E+08</td>
<td>5.368345</td>
<td>110.3383</td>
<td>1.79E+12</td>
<td>69.39328</td>
</tr>
<tr>
<td>Minimum</td>
<td>2124000.</td>
<td>0.205126</td>
<td>43.03518</td>
<td>3.84E+10</td>
<td>21.92949</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>14944457</td>
<td>1.175324</td>
<td>18.90020</td>
<td>1.95E+11</td>
<td>12.74116</td>
</tr>
<tr>
<td>Skewness</td>
<td>5.700658</td>
<td>0.652658</td>
<td>-0.916546</td>
<td>5.710019</td>
<td>-0.287622</td>
</tr>
</tbody>
</table>
Kurtosis  46.11476  2.635301  2.745827  47.55436  1.930806  
Jarque-Bera  7872.622  13.5663  8373.886  5.834908  
Probability  0.000000  0.001138  0.054071  
Sum  1.24E+09  8149.597  4127.080  
Sum Sq. Dev.  2.10E+16  33578.45  4127.080  
TRM  1  0.041  0.32  
FDI  1  0.25  0.33  
HC  1  0.31  0.21  
EXP  1  -0.2  
TR  1  

Under the LLC test for the variable TRM, the test statistic for the level is 1.98, which is not significant at the 10% level. However, the test statistic for the first difference is -3.92, which is considerable at the 1% level. This shows that TRM is integrated of order 1 (I(1)), as its first difference is stationary. Similarly, for the variable FDI, the IPS test suggests that it can be on both. In summary, the table provides important information about the order of integration for each variable based on the results of unit root tests, and it helps in understanding the time series properties of the variables in the analysis.

Table 4.2: Unit Root Test

<table>
<thead>
<tr>
<th></th>
<th>LLC</th>
<th>IPS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I(0)</td>
<td>I(1)</td>
<td>I(0)</td>
<td>I(1)</td>
</tr>
<tr>
<td>TRM</td>
<td>1.98</td>
<td>-3.92***</td>
<td>1.17</td>
<td>-5.55***</td>
</tr>
<tr>
<td>FDI</td>
<td>-1.44*</td>
<td>-7.99***</td>
<td>-2.00**</td>
<td>-9.13***</td>
</tr>
<tr>
<td>HC</td>
<td>1.44</td>
<td>-4.59***</td>
<td>1.96</td>
<td>-5.68***</td>
</tr>
<tr>
<td>EXP</td>
<td>-1.02</td>
<td>-3.19***</td>
<td>1.29</td>
<td>-3.29***</td>
</tr>
<tr>
<td>TR</td>
<td>-0.84</td>
<td>-8.27***</td>
<td>-0.28</td>
<td>-7.47***</td>
</tr>
</tbody>
</table>

Note: *,**,*** signifies the significance levels as 10%, 5%, and 1%, correspondingly.

Table 4.3 presents the results of cross-sectional dependence tests for the variables TRM, FDI, HC, EXP, and TR. Cross-sectional dependence tests are used to assess whether there is a correlation or dependence among the observations of different entities (e.g., countries, regions) in a panel dataset. These tests are essential for panel data analysis, as they account for potential interdependence among the individual units in the data.

The variable TRM, the Breusch-Pagan LM test statistic is 114.10, which is significant at the 1% level. This advocate that there is cross-sectional dependence among the observations of TRM. Similar significant results are observed for the other test statistics (Pesaran scaled LM, Bias-corrected scaled LM, and Pesaran CD) for TRM, indicating consistent evidence of cross-sectional dependence.

The same interpretation applies to the other variables (FDI, HC, EXP, and TR). The significant test statistics for each variable indicate the presence of cross-sectional dependence among their observations. In summary, Table 4.3 provides information about the presence of cross-sectional dependence in the panel dataset for the variables examined. The significant test statistics indicate that there is interdependence among the individual units, which should be taken into account when conducting panel data analysis.
Table 4.3: Cross Sectional Dependence Tests

<table>
<thead>
<tr>
<th></th>
<th>Breusch-Pagan LM</th>
<th>Pesaran scaled LM</th>
<th>Bias-corrected scaled LM</th>
<th>Pesaran CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRM</td>
<td>114.10***</td>
<td>23.28***</td>
<td>23.18***</td>
<td>10.21***</td>
</tr>
<tr>
<td>FDI</td>
<td>95.14***</td>
<td>19.04***</td>
<td>18.94***</td>
<td>9.38***</td>
</tr>
<tr>
<td>HC</td>
<td>103.21***</td>
<td>20.84***</td>
<td>20.84***</td>
<td>8.75***</td>
</tr>
<tr>
<td>EXP</td>
<td>131.10***</td>
<td>27.08***</td>
<td>26.97***</td>
<td>11.22***</td>
</tr>
<tr>
<td>TR</td>
<td>58.83***</td>
<td>10.92***</td>
<td>10.82***</td>
<td>3.62***</td>
</tr>
</tbody>
</table>

Note: *** shows significance level at 1%.

Table 4.4 presents the results of Pedroni& Kao cointegration tests. Cointegration tests are used to assess whether a long-term relationship exists between the variables in a panel dataset. Finally, the Kao Cointegration test is performed separately. The ADF test statistic is -4.86, and the p-value is 0.0000, indicating strong evidence of cointegration. In summary, the table provides results from various cointegration tests, suggesting that there is evidence of cointegration between the variables in the panel dataset. This shows long term relationship among the variables., which is an essential finding for time series analysis.

Table 4.4: Pedroni& Kao Cointegration Results

<table>
<thead>
<tr>
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<th></th>
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<tbody>
<tr>
<td></td>
<td>Stat</td>
<td>P-value</td>
<td>Stat</td>
<td>P-value</td>
<td>Stat</td>
<td>Stat</td>
</tr>
<tr>
<td>Panel v-Stat</td>
<td>0.517840</td>
<td>0.3023</td>
<td>-0.131829</td>
<td>0.5524</td>
<td>-1.433710</td>
<td>-4.86</td>
</tr>
<tr>
<td>Panel rho-Stat</td>
<td>-2.773692</td>
<td>0.0028</td>
<td>-3.041543</td>
<td>0.0012</td>
<td>-2.668800</td>
<td>0.0758</td>
</tr>
<tr>
<td>Panel PP-Stat</td>
<td>-3.585003</td>
<td>0.0002</td>
<td>-4.104910</td>
<td>0.0000</td>
<td>-1.933110</td>
<td>-2.668800</td>
</tr>
<tr>
<td>Panel ADF-Stat</td>
<td>-1.969826</td>
<td>0.0244</td>
<td>-1.983662</td>
<td>0.0236</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative hyp: individual AR coefs. (between-dimension)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group rho-Stat</td>
<td>-1.433710</td>
<td>0.0758</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group PP-Stat</td>
<td>-2.668800</td>
<td>0.0038</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group ADF-Stat</td>
<td>-1.933110</td>
<td>0.0266</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.5 presents the results of the Pooled Mean Group (PMG) estimation for a panel dataset. The PMG model is used to estimate both the long-run and short-run relationships between the variables. This variable LFDI shows a coefficient of 0.320482, indicating that the correlation between LFDI and the tourism variable in the long time is marginally significant. The coefficient for LTR is 0.221044, indicating a highly significant positive relationship between LTR and the dependent variable in the long run. The coefficient for LHC is 0.452021, suggesting a significant positive relationship between LHC and tourism in the long run. The coefficient for LEXP is -1.065153, suggesting a highly significant negative relationship between LEXP and the TRM in the long run.

The coefficient for the LFDI is 0.356407 suggesting a highly significant positive relationship between the first difference of LFDI and TRM in the short run. The coefficient of LHC, indicating a significant positive relationship between LHC and TRM in the short run. The coefficient LTR is
0.930381, suggesting a significant positive relationship between the first difference of LTR and the dependent variable in the short run. The coefficient for the first difference of LEXP is -1.460113, demonstrating that LEXP is not significant in explaining the variation in the TRM variable in the short run.

In summary, Table 4.5 provides the parameter estimates and statistical significance in the panel dataset using the Pooled Mean Group (PMG) estimation method. It allows us to understand the direction and significance of these relationships, which are essential for economic and financial analysis.

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<th>Table 4.5: Pooled Mean Group Results</th>
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<td><strong>Long Run</strong></td>
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<td><strong>Short Run</strong></td>
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5. Conclusion and Policy Recommendation

In this study, a panel ARDL (autoregressive distributive lag) model was utilized to explore the intricate relationships among foreign direct investment, trade, human capital, government expenditures, and tourism in the BRICS nations. By analyzing data spanning from 1995 to 2020, the research unveiled valuable insights. Specifically, the study found that FDI, trade, and human capital exhibited positive associations with the tourism, in long and short time period. These factors played significant roles in driving the growth and development of tourism within the BRICS countries. However, in contrast, government expenditures were negatively correlated with tourism over the same time frame. This suggests that certain aspects of government spending might not directly contribute to the enhancement of the tourism industry within the BRICS nations. The findings shed light on the complex dynamics that influence tourism development in these countries. As a result, they hold essential implications for policymaker aiming to promote growth and performance of the tourism zone.

To entice more FDI in the tourism industry, governments should strive to create a conducive environment. Achieving this can involve implementing various measures, such as providing incentives, streamlining regulations, and ensuring transparent investment procedures. Increased FDI inflows can be instrumental in developing tourism infrastructure, launching effective marketing campaigns, and improving service quality, all of which contribute to the sector's expansion. Furthermore, facilitating trade relations among the BRICS nations can be a powerful catalyst for boosting tourism. By encouraging the flow of tourists between countries, bilateral agreements, relaxed visa procedures, and joint promotional campaigns can stimulate intra-BRICS tourism, leading to mutual economic benefits. Enhancing the skills and knowledge of the tourism workforce is another critical aspect that governments should focus on. Investing in industry-specific education and training programs ensures a
highly skilled workforce that enhances service quality, ultimately leading to increased visitor satisfaction and a more thriving tourism sector. Despite the negative correlation between government expenditures and tourism, it remains essential to optimize spending in areas that directly benefit the tourism industry. By making targeted investments in tourism infrastructure, conducting effective marketing campaigns, and promoting sustainable development initiatives, governments can yield positive outcomes that contribute to the sectors overall growth and performance.

References


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