



Presence of Tourism-Led-Growth Hypothesis in Pakistan: Empirical Evidence with ARDL Model

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ABSTRACT

Tourism has become the world's third-largest export earning industry. According to the World Bank, in recent times international tourism has attracted a great attention and 7% of world's total trade involves tourism. Tourism is considered one of the endogenous factors to boost the economic growth and development of any nation. It has versatile impacts on country growth and contributes directly and indirectly to GDP. The paper aims to bring forth confirmation of the tourism-led-growth hypothesis (TLGH) for Pakistan using time series data from 1995-2020 by incorporating inflation, international tourism, and tourism expenditure as regressors. For checking the stationarity of time series data, unit root tests Augmented Dickey-Fuller test (ADF) and Phillip Perron test indicate that Economic Growth and inflation are stationary at their first difference while tourism expenditure and number of international arrivals are stationary at level. ARDL approach has been utilized to establish the link to how tourism affects the economic growth of Pakistan and the Cumulative Sum of Recursive Residual (CUSUM) and CUSUM of square has been used to check the stability of the model. The result depicts that a long-run relation exists among the variables. Inflation has a negative and significant impact on economic growth while international arrival and tourism expenditure have a positive and significant impact on economic growth. Furthermore, to enhance tourism activities and attract foreign tourists, the government must focus on macroeconomic stability because such factors have a direct effect on tourism and thus multifaceted impact on economic growth.

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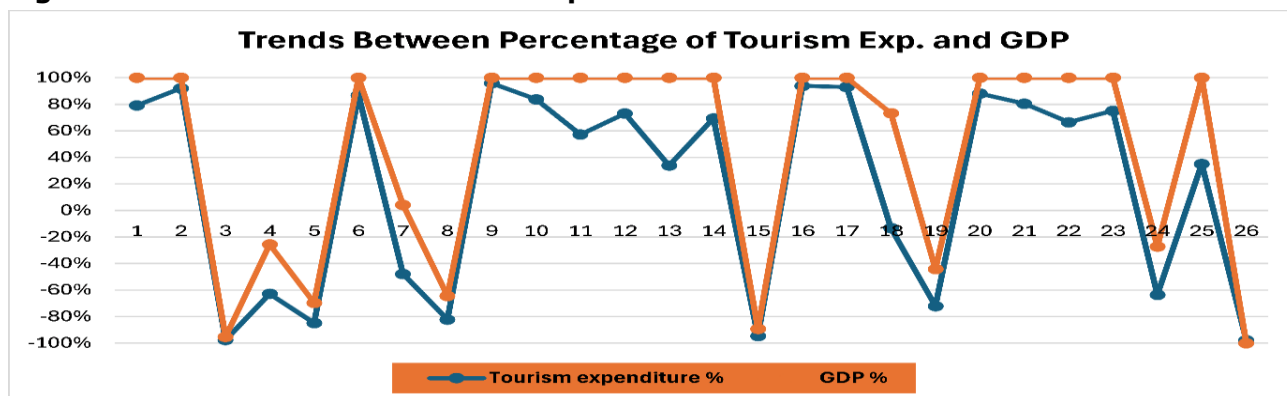
1. Introduction

Tourism stimulates different industries either through direct affect or indirect affects, thus contributing towards income and potential source of employment. The world has been transformed into global village. Some developments have tremendously changed the dynamics of world. These developments opened new avenues and sources of income that significantly contributed to their GDP like Thailand. Pakistan is among those countries having a geographical location with diverse cultures, values, rituals, traditions, and customs. It became the biggest source of revenue that not just attracts the world to visit but can be also a roadmap to boost industrialization, trade, and infrastructure development (Q. R. Khan, 2023). Being a social and cultural phenomenon, tourism has significant affect in economic development of any country

and contributing towards export earnings. Tourism has gained much importance in recent times and now considered as important variable determining economic growth, and employment generation, to pose a good global outlook, like human and physical capital (Li, Jin, & Shi, 2018) and exports thus improving terms of trade. The objective of this study is to investigate the tourism-led growth (TLG) hypothesis, and to probe to what extent a boom in an economy can be contributed via improvement in the tourism sector. International tourism poses a positive effect on the expansion of economic activities and in this way long-run economic growth through various channels. First, significant foreign exchange earned through tourism activities contributes to capital goods that can be employed in the manufacturing process (Muhammad Atif Nawaz, 2018). Most economies focus on strengthening foreign exchange gains utilized to pay for imports and support the level of international reserves. The tourism sector has contributed much more for small islands to their balance of trade, computed as a percentage of total exports, which is exceptionally high. Second, tourism induces investments in new infrastructure, in promotion of hotels, resorts, human capital and external competition among various competing nations to attract more international tourists. Various factors such as Human and physical capital, technology and environmental resources determine the success or failure of the tourism sector. To enhance economic activities through job creation and increasing income of local residents, investment in human capital is one of the backbone of tourism, thus bring significant socioeconomic changes in those localities. As UNWTO (2019) reports, in 2019 by contributing \$3.5 trillion, the Travel & Tourism sector generated a significant share, 4% of the total world GDP. Thus, tourism is the centre of attention of modern as well as emerging economies to raise the living standard of their nationals. Saner, Yiu, and Filadoro (2019) explored components of physical capital, which encompasses a wide range of public and private infrastructure, such as roads, good health facilities, airports, and good quality hotels. Thus, the diversification of environmental friendly infrastructure is a decisive requirement to achieve a sustainable and competitive tourism sector. Whenever the government aims to promote tourist activities, the government must ensure tourist spots are easily accessible, and provided with good quality roads and accommodation facilities at reasonable prices, thus easy access for each other.

Technology contributes towards efficient growth, increased productivity, thus leading towards optimal allocation of resources in a way higher level of welfare can be achieved by utilizing same resources. Given such a dynamic economic environment, cooperation may result in making tourism businesses competitive (Streimikiene, Svagzdiene, Jasinskas, & Simanavicius, 2021). Providing tourists with an online application and providing them timely weather updates help them to find more about such places and routes have a significant impact on tourist satisfaction. Third, tourism stimulates other economic industries through direct effects such as infrastructure, and indirect and induced effects, either by increased income of locals and consumption thus increasing demand for food and beverages (Vita et.al, 2020). The increase in tourism expenditure will lead to multiplier effects which can be seen in tourism related industry such as hoteling, infrastructure, transportation which indicates increased economic activities, and the overall variation connected with it will be greater than the initial injection in spending. Nevertheless, indirect benefits to the economy in form of increased reward for labor, local hoteling industry, and enhanced earnings of transporters are difficult to measure numerically and lack of methodology and official assistance make it harder to compute these effects, thus its impacts cannot be measured precisely, either due to the unavailability of data or the informal nature of an economy.

Figure 2: Trends between Tourism expenditures and GDP



Fourth, tourism contributes to generate employment opportunities, more the people will be employed hence circulation of wealth causes increase in income of locals and associated stakeholders (F. Manzoor, Wei, Asif, Haq, & Rehman, 2019). International tourism expenditure finances local businesses such as newly constructed hotels, transportation sector etc. Portion of this earning is further distributed to labor as wages, capital as interest, and rent to owner of resources, which are utilized for facilitation and services. The left-over part is thus reinvested further which stimulates expenses on purchase of commodities, which increase demand for inputs, labor which generate further benefits to public as well as size of economy and results in reduced income inequality among stakeholders involved in this sector. Hence, public private partnership, increased collaboration with international agencies, cultural exchanges, make sure peaceful and secure environment to international travelers, providing incentives and subsidies to local investors can enhance local multiplier effects More the people engaged in tourism industry, its impact will be distributed among all, thus contributing toward national economic progress.

Fifth, tourism leads positive economies for achieving scale and scope (Tamene & WONDIRAD, 2019). Economy of scale helps firms to reduce their average production cost per unit as their size, or scale, increases because increase in marginal productivity causes marginal cost to reduce. Reduced average cost ultimately causes decreased total cost, thus more goods will be produced with available resources, which indicates increase in size of economy. More the arrival of international tourists, thus more goods and services will be demanded, and firms will have to expand their size. This can also be seen in case of 2022 Football world cup, where host country Qatar focused on infrastructure development such as construction of hotels, grounds, airport expansion for providing services to international tourists getting many benefits for economy. According to World Travel and Tourism Council report 2017, Pakistan's most visited places for tourism attracted about half million tourists in 2013, thus contributing \$298 million in government treasury. Over the time, share of tourism in economic growth increased. Tourism contributed 2.7% of GDP for 2016 and in monetary terms, its contribution was \$7.6 billion. The contribution of tourism in 2017 was \$8.8 billion, approximately 2.9% of GDP. In 2019, tourism contributed \$15 billion, thus accounting 5.7% of total GDP. Pakistan was declared as the world high potential adventure travel destination of visitors for 2020 as per ranking of British Backpacking Society (2018). Forbes ranked Pakistan as one of the Coolest Places to visit in 2019. This significant share in revenue is generated through different tourism linked sectors like travel, tourism services and food and beverage.

United Nation Secretary- General Antonio Guterres declared Pakistan's transformation from terrorism to tourism as remarkable, upon his visit to Pakistan in 2020. The most important benefits posed by tourism in Pakistan to promote the culture and social cultural activities for foreign tourists. Tourism helps to promote social cohesion and build social confidence among nationals of different culture, society and in this way, it improves social and global outlook. This cultural exchange can lead to greater peace and stability in the tourism region and helps to break cultural barriers and promotion of major understanding between people, creating a feeling of brotherhood. Pavilion set by Government in collaboration with Pakistan Tourism Development Corporation(PTDC) and Trade Development Authority of Pakistan(TDAP) has won the Best in show-International Tourism Development award at the Travel and Adventure show , 2024 being held in New York, which shows tourism to be potential growth engine in Pakistan and great opportunity for Pakistan to improve its international image to be a safe and peaceful and friendly country for local as well as international tourists and travellers.

Some of the key problems that the tourism industry is facing include infrastructure deficiencies, security concerns, political instability and environmental impacts, which not only impact tourism but also economic growth. Lack of infrastructure includes poor transport facilities, small no of quality hotels and lack advanced facilities for international tourists, due to these shortcomings, Pakistan is not getting true benefits from tourism. Pakistan also faced several security challenges in the past decade, and this led to security concerns about the safety of tourists visiting the country. The government took some important steps for security improvement, but still harmful activities exist, which pose a negative outlook on the country and demotivate international tourists. Political instability and anxiety between various ethnic and religious groups can be barriers to the growth of tourism in Pakistan. International tourists

hesitate these countries to visit they are politically unstable, thus hampering economic growth. The increasing growth of the tourism industry has had a greater impact on country environmental degradation. Over the time, various studies have been carried out to investigate the link between tourism and economic growth. The objective of the study is to provide empirical evidence of presence of Tourism Led Growth Hypothesis (TLGH) and to suggest a solid policy recommendation to increase exports earning by focusing on tourism and traveling industry. This study also incorporates an international tourism as well economic and financial indicator that affects the tourism activities in nations. Efforts made by Government of Pakistan and inflation has been taken additionally the expenditure incurred by Government of Pakistan as well as inflation has been taken additionally that poses reflections of internal factors that influence the tourists' attraction (Ghulam Muhammad Qamri, Haq, & Akram, 2015; Shoukat, Abdullah, Rafique, & Qamri, 2023). More the infrastructure development in those areas requires deforestation which badly affect natural ecosystem. This will have negative impact on wildlife and other things like biodiversity and pollution. The international standard hospitals and health facilities are not available in tourism areas for foreign visitors due to this discourages the foreign visitors to visit the tours areas and this will negative impact on Pakistan economic growth. Thus, government must consider sustainable tourism.

2. Literature Review

Over the time, different studies have been conducted to check impact of tourism on economic growth. The choice of explanatory variables depends upon the factors which directly or indirectly either affect the tourism or affected by tourism. Study conducted by Armstrong, Ballas, and Staines (2014) examined the lasting effects of the tourism industry on Greece's GDP growth. This study analyzed factors, such as GDP growth while discussing industry growth and international tourist arrivals. Additionally, it found that there is a connection between increased investments and international tourism earnings as well as a direct correlation between the volume and pattern of trade, between nations and foreign visitor expenditure, thus have significant positive impact on economic growth in a way that tourists and investor from different nations having different foreign currencies to purchase host country's commodities (Ghulam Muhammad Qamri, Sheng, Adeel-Farooq, & Alam, 2022). Tourism has same positive impacts on economy as development of physical capital and international trade. The existence of one-directional causality from tourism to economic activities clearly indicates that tourism international as well as local contributes positively in the growth of any economy. The employment of Auto regressive Distributed Lag (ARDL) models over the time series annual data ranging from 1972 to 2011 by Jalil, Mahmood, and Idrees (2013) confirmed long run dependence of tourism and traveling sector growth with economic activities in Pakistan. By using Auto regressive Distributed Lag (ARDL) models over the time series data from 1972 to 2011, Azam, Mahdiat, Hafeez, and Bakhtyar (2022) analyzed the impact of tourism on economic growth by incorporating labor force, official development assistance, inflation rate, local investment by using data from 1980 to 2018 by employing ARDL. The inflation rate and official development assistance has significantly negative impact on economic growth while domestic investment has insignificant positive impact on economic growth of Pakistan. Tourism is one among many factors that affect the economic development of a nation. For example, Sinha, Tirtosuharto, and Sengupta (2019) indicated that inflows such as remittances and FDI from overseas positively affected inflation rates in the country, thus increased consumption leads to economic growth over the period from 1990 to 2017.

F. Manzoor et al. (2019) attempted to capture effects of sustainable tourism on GDP growth and employment from 1990 to 2015 using Johansen Cointegration approach. Their findings indicates that tourism has contributed towards economic growth and employment in a positive way in case of Pakistan. Over the time, with expansion in tourism industry, employment opportunities increased. Aleemi (2015) used regression analysis in this study to establish a significant relationship between Tourism revenues and GDP growth of the economy covering 32 years data from 1981-2013. The study's findings suggested that tourism revenue has an important and beneficial impact on the growth of the country's economy. In terms of GDP, a rise in tourism payments, on a typical basis, made up almost 0.24% of Pakistan. The study conducted by Amjad, ur Rehman, and Batool (2022) analyzed the strong nexus between economic growth and tourism sector in Pakistan over time series data from 1985 to 2020 by utilizing the Gregory Hansen co-integration and ARDL structural break econometrics approach. The existence of structural break in the year 2009 was identified through Gregory-Hansen's approach. ARDL approach shows that all other things being equal, economic growth is a

positive function of tourism related activities. Khalil, Kakar, Waliullah, and Malik (2007) conducted a study to check impact of tourism on income in Pakistan from 1960 to 2006. The main goal of their research was to assess the interconnection between growth and revenue generated by the tourism sector. Their findings revealed two ways in which the tourism industry influences the economy. Firstly, investments in the expansion of tourism encourage the development of transportation and infrastructure (Hanim & Qamri, 2019). Secondly, it contributes to growth at a national level. Ejaz and Rasheed (2016) concluded that infrastructure development and GDP per capita have significant positive impact on tourism sector while terrorism effect tourism badly from their study on annual time series data from 1972 to 2013. Tourism increases the economic growth, but literature witness economic growth degrades the environment (Q. R. Khan, 2023). But the use of renewable energy, and hybrid technologies in transportation to promote low emissions while promoting both tourism and economic growth (Jafri, Liu, Usman, & Khan, 2021). Islamic banking along commercial banking in Pakistan is important to finance the clean energy resource for environment friendly tourism and green growth (Haider, Raza, Jameel, & Pervaiz, 2019). Adnan Hye and Ali Khan (2013) utilized bounding testing approach to determine the long-run relationship between income from tourism and economic growth using data from 1971 to 2008 by employing Johansen Cointegration, ARDL and rolling window bounds testing approach for model stability. They explained that income from tourism has led economic growth in Pakistan except in the years 2006, 2007, and 2008. The disclosure of CSR activities by tourism industry is important for transparency to attract international tourist and promote tourism in domestic country (Ehsan, Nazir, Nurunnabi, Raza Khan, Tahir, & Ahmed, 2018).

Holik (2016) conducted a study focusing on how foreign visitors impact growth in five member countries of the Association of Southeast Asian Nations (ASEAN); Indonesia, Malaysia, Thailand, the Philippines and Singapore during the period spanning from (1995-2012). It utilized a method by employing panel regression with a one-way effect. Even the recession in Indonesia, which initially was confined to an economic drawback, expanded to include the Cultural, political, and confident about problems. However, the recovery and enhancement process were completed so quickly that GDP growth moved to be positive in the years that followed. In that time, the data on foreign tourism revenue, foreign visitor arrivals, and exchange rates serve as the independent variables. According to the study's findings, there is proof that foreign travel can boost those nations' economies. Siddiqui and Siddiqui (2019) moved one step further to investigate the existence of endogeneity and causality, whether there exists uni-directional causality or two directional causalities between tourism development and economic boom. Vector Auto Regressive (VAR), a dynamic time series framework has been exercised to investigate the consequences of tourism development on economic growth in Pakistan over the period 1979 to 2017. Although their findings confirmed the existence of the tourism-led growth hypothesis but also indicates that actual contribution of tourism development towards economic progress is far less than the potential in this sector. The Granger causality test reports the existence of Bidirectional causality, which means the way tourism contributes towards economic progress, economic growth has major contribution in promoting tourism, thus both reinforce each other in a way if one improves, second will automatically get escalated. (Q. Khan, Xinshu, Haider, & Jaffari, 2021) examined the unity and connection between Pakistan current account deficit, economic growth and tourism from 1972-2007. By utilizing ECM and the Johansen Cointegration technique, this study discovers a long-term correlation between GDP and the number of tourists, growth via current account deficit reduction channel. Literature also evidenced that good governance escalates the tourism activity, which eventually increase economic growth at the cost of emissions (Q. R. Khan, 2023).

Globalization and tourism both support economic growth (Dwyer & Čavlek, 2019; Shoukat et al., 2023). Bhatti, Zafar, Ali, and Asghar (2022) examined the short- and long-term effects of globalization and tourism on Pakistan's economic development. Furthermore, the research indicates the relationships, both immediate and long-term, between tourism, globalization and Economic development. Both short- and long-term data show that Globalization and tourism both support economic growth. Amjad, ur Rehman, and Batool (2022) using annual data from 1985-2020 examined the relationship between tourism and economic growth in Pakistan using the Gregory Hansen co-integration and ARDL structural change econometrics technique. According to the results of Gregory Hansen's method, a

structural change first appeared in (2009). The ARDL approach has been utilized to determine the long-run coefficients for structural weaknesses. According to the study, economic growth is considerably accelerated by tourism receipts.

3. Theoretical Framework

Industrial Revolution in the late 18th century resulted in economic growth and rise in GDP per capita manifolds in Europe. The economies attracted their attention to achieve growth through multiple ways and expanded their economy. Economic Development was observed to be a multidimensional phenomenon and began to be achieved with a number of macroeconomic factors such as free flow of goods and services, technological advancement, as a result, world became global village. This globalization resulted in free trade, migration of people form one to other country, and thus tourism got promoted and due to its various socioeconomic benefits, many countries invested in facilitating tourism. Todaro and Smith (2020) proposed in their study that development is a multidimensional phenomenon; it depends not only on size of an economy and national institutions but also on human capital and many other socioeconomic dimensions such as poverty reduction, proportionate distribution of income (Ghulam Muhammad Qamri, Haq, & Akram, 2015). Till late 19th century, no single economic model or theory got success in admiration for its growth or development ideas. Modernization theory (MT) is one of the widely accepted model to be evolved from growth theory, which is hall mark of Keynesian Economics. Economists use some indicator to show growth, these indicators demonstrates improvement in economic and employment prospects whose benefits trickles down to each and every stage of society. The more economic growth a country achieves higher will be GDP per capita, people will increase their spending and thus people increase their budget share on tourism and traveling activities. Initially economies try to achieve higher level of growth, whenever they become successful in achieving target level of growth, they then start investing in development of public, such as investing in their skills, abilities and advanced level of technology for raising comfort of their citizens. Modernization was highly accepted because of its focus on large scale manufacturing rather than small social workshop. Furthermore, from the tourism point of view, the modernization pattern of growth incorporates the ways which involves transfer of technology from modern to developing economies, thus increased marginal productivity will expand size of economy, and more employment opportunities, thus getting a global acceptance.

Dependency theory (DT) gained much favour in the 1960s and 1970s. Neocolonial dependence model is thought to be reflection of Karl Marx’s ideology of class struggle. It is an amalgam of multiple of reinforcing economic theories and experiences and mainly highlights the inequalities of southern and poor countries in which benefits from growth are inclined toward specific class of society. DT emphasizes on International-dependence revolution, which shows dependence and dominance relationship between developed and developing nations. This theory laments the rich and developed countries for keeping the developing nations deprived of development. The rich and developed countries act in a way so as to maintain their hegemony to capture natural resources from developing countries. The rely on developed countries in a multiple ways: (1) to get benefits from technological advancement from modern and industrialized nations; (2) conception of immense debts and comprador group, local elites who facilitates foreign investment and (3) huge amount of interest on debts is repaid back to already developed countries from which debt is owed via international lenders.

Figure 3: Theoretical Framework



After facing the severe criticism in the 1970s and 1980s, Neoliberalism theory (NL) was formulated. NL advocates capitalism ideology of free global markets without state intervention, which draws additional domestic and international investment which results in increased capital accumulation. This theory emphasizes on removing all the stumbling blocks which hinder development of developing countries raised by industrialized countries. Neoclassical counterrevolution is decomposed into the free market approach, new political economy approach (Public choice theory) and the market friendly approach. Free flow of capital and trade, effective population control policies or efficient planning for development across the globe should be prioritized. In this era, it was assumed that government had capacity to earn foreign capital. As far as Neo-liberal tourism is considered, to mobilize foreign capital, hotel chains play primary role. Excessive state intervention and inefficient price mechanism results in the misallocation of resources and thus underdevelopment such as reported in economies of Africa and Latin America. Local and national economy can get escalation by infrastructure development in such areas where tourists travel more, although the state reduced its participation in various socioeconomic domains such as setting minimum wage and limiting the role of trade unions, thus reduced social welfare programs the spending on human capital, environment attracted less state attention from state. In Neo-liberal point of view, tourism halts the development of the state. Furthermore, tourism activities also humiliate and exploit the labour involved in providing these services, thus working for their own self-interest rather than state welfare, thus advocating public-choice theory. Due to the many consequences, private property of individuals was seized by government, thus caused reduction in individual liberty, no incentive for innovation and resources were not being utilized efficiently.

Ultimately, in the decades of the 1970s and 1980s, it was evident that policies were framed in a way that few elitist state got success in maintaining their hegemony over deprived state rather than benefiting poor class of world, i.e., global top-down approaches were in favour of the west only, only the developed nations benefited from these state participation. People centered development was focused by alternative development (AD) or bottom-up style which emphasizes the satisfaction of people at community level instead of mainstream development. Neoliberal development and general modernization theories declared economic growth to measure the standard of living. However, DT and AD theories of economic development questioned this approach by criticizing modern development to bring differences in living standards of life across globe and advocated development to be bottom-up approach. Tourism Led Growth Hypothesis (TLGH) gained much admiration by economists in recent times that link the tourism and economic growth. As tourism industry leads to export earnings, thus TLGH is thought to be evolved from Export-Led-Growth Hypothesis (ELGH). It claims strong link between economic growth and development of tourism industry, either in direct or indirect way. It postulates that more economic activities in an economy facilitates the development of tourism and travel industry. More, tourism activities induce multiplier effect in an economy by increasing consumption, thus increased demand for goods and services, which lead to employment generation, thus boom in business cycle which itself reflects growth as well as increased opportunities and potential for this sector to develop.

Sustainability and development (SD), both are integral part of an economy. Without focus on severe environmental impacts, benefits of economic growth can be offset by loss compensation from any environmental issues such as climate change, floods (Z. Manzoor et al., 2022; Muhammad A Nawaz & Hassan, 2016). This theory incorporates factors of both development and sustainability and emphasizes not only on growth but also show concerns about future generations. Ioannides was of view that people prefer environmental friendly and recyclable products and sustainability is used as a marketing tool by the International Federation of Tour Operators (IFTO) with the intention to maximize profit. Nowadays, sustainability is among the major factor used in determining quality, price of any commodity. Efforts are under the way to solve the issues of poverty such that each individual can enjoy similar colours of life, attaining the UN Millennium Development Goals. World Tourism Organization (2005) report focuses on the role of community tourism, cultural exchanges, bilateral trade between neighboring countries, promoting local tourism through the residents and private sector and thus pro poor tourism resulting in pro poor growth must be facilitated.

4. Econometric Model and Data

This study investigates impacts of tourism on economic growth over period of 1995 to 2020. Economic growth has been shown as GDP growth while to capture effect of tourism sector, tourism expenditure, inflation and number of international arrivals has been taken as regressors. GDP growth is treated as dependent variable. CPI has been taken as proxy to capture the effect of inflation while percentage change in tourism expenditure has been taken to show tourism expenditure incurred by government of Pakistan, number of international tourist arrivals has been incorporated to take into account of international tourism. The time series unit root test Augmented Dickey Fuller test and Phillip Perron test depicts that inflation and economic growth are stationary at their first difference while international tourist arrival and tourism expenditure are stationary at level, thus ARDL is the appropriate econometric techniques to establish the link between Tourism sector and Economic growth. Linear functional form of our econometric is as follow:

$$GDP = \beta_0 + \beta_1 \text{ tourism expenditure} + \beta_2 \text{ inflation} + \beta_3 \text{ international tourist's arrivals} + \mu_0$$

We expect that β_1 and β_3 to be positive because more the arrival of international tourists and government spending on tourism industry stimulates economic activities such as employment generation etc. β_1 and β_3 are expected to be positive because economic theories advocate more arrivals of international tourists to have positive impacts on economy. Thus, expansion in economic growth occurs while β_2 to be negative as inflation decreases the real purchasing power of consumer and hamper economic growth.

5. Results and Discussion

5.1. Description of the Variables

The impact of tourism on economic growth has been validated by incorporating international tourism and tourism expenditures incurred by the Government of Pakistan. The tourism sector is mainly affected by the price level in a country for local travellers and tourists, thus inflation has also been included as a controlled variable and measured by Consumer Price Index. The ramifications of tourism on the economy have been measured by Gross domestic product (GDP), more the services provided by the tourism industry, the more the volume of an economy.

Table 1: Description of Variables

Variables	Description	Measurement
Tourism	Tourism Expenditure	% of GDP
Inflation	CPI	Annual %
Intl Tourism	No of Arrival	Annual % change
GDP	GDP Growth	Annual %

5.2. Time Series Unit Root Test

The results of the ADF and Phillip Perron test describe the order of integration thus leading to the employment of the most appropriate econometric technique. The results of the ADF and Phillips Perron test describe the ARDL as the best technique to be utilized for establishing the link among variables. The lags in series may appear either due to psychological reason, technological reasons or institutional reasons.

Table 2: Results of ADF and Phillip Perron Test

Variable Name	Level	1 st Difference	Order of integration
Int tourism (no of arrivals)	-3.209276 (0.0331)		I(0)
Tourism (Exp)	-4.483544 (0.0017)		I(0)
Inflation (CPI)	-2.440586 (0.1415)	-5.843642 (0.0001)	I(1)
GDP	-1.974474 (0.5329)	-4.176814 (0.0036)	I(1)

5.3. Auto-Regressive Distributed Lag Model

The results of time series unit root tests, ADF and Phillip Perron suggest Dynamic econometric model Auto-Regressive Distributed Lag to be the most reliable and accurate econometric technique for the model. Furthermore, to check the short-term and long-term

dependence of variables, the Error Correction Model (ECM) has been employed. The results of ECM indicate that Economic boom or growth is affected by international tourism both in the short term as well as in the long run, thus posing a significant impact on economic growth.

Table 3: ARDL Long run form and bound test

Variables	Coefficient	Std. Error	Prob
Annual GDP	-0.600881	0.184855	0.0047
D (inflation)	-0.200192	0.075386	0.0166
D (Intl Tour)	0.001424	0.00740	0.0079
D (Tour Exp)	0.019659	0.007101	0.0131
F-stat= 4.2874923	lower Bound 10 % (2.37)	upper bound 10% (3.2)	

Table 4: Error Correction Regression

Variables	Coefficient	Std. Error	Prob
D (Inflation)	-0.200192	0.055920	0.0023
D (Intl Tour)	0.001424	0.000590	0.0273
D (Tour Exp)	0.019659	0.004709	0.0006
CointEq (-1)*	-0.600881	0.116766	0.0001
R Square	0.740650	Adjusted R Square	0 .703600
S.E of Regression	1.014290	Akaike info criterion	3. 011901

Our results confirmed the existence of the Tourism-Led-Growth Hypothesis (TLGH) in the case of Pakistan. The impact of international tourism and government spending has positive and significant impacts while inflation has a negative and significant impact on economic growth. This study's results are similar to the findings of the following studies (Adnan Hye & Ali Khan, 2013; Azam et al., 2022; Cárdenas-García, Sánchez-Rivero, & Pulido-Fernández, 2015; Chiu, Zhang, & Ding, 2021; Li, Jin, & Shi, 2018; Muhammad Atif Nawaz, Seshadri, Kumar, Aqdas, Patwary, & Riaz, 2021; Muhammad Atif Nawaz, Yousaf, Hussain, & Riaz, 2020). Findings provide support for the TLGH, but they also show sensitivity of estimates to various political, social, and economic factors such as political instability, terrorism and social violence, government priorities, data collection, model specification, estimation technique, and period. Statistics from different economic structures over time series data and panel data researches show that International tourism and traveling either in form of recreational trips, cultural exchange programs, or religious duties perform positive contribution toward economic progress and national income of a country. It is evident that tourism sector stimulates economic activities in multiple ways such as foreign currency earning, capital flow, physical and human capital accumulations, transferring of technology and innovation which contributes either directly or indirectly thus economic growth and tourism reinforce each other's. Inflation is an important factor in any economy (Ghulam Muhammad Qamri, Haq, & Akram, 2015), the consumption and spending habits of tourists have been measured by inflation, which affects the real purchasing power of travellers and tourists. Inflation has a significant negative impact on economic growth as confirmed by our findings.

A higher Consumer Price Index in any economy reduces the buying capacity of individuals, thus demand exceeds the supply. This results in overproduction of goods and further production is halted, thus less employment opportunities which affects the growth of the economy. Our findings predict that if the government elevates expenditures on tourism by 1 percentage point, the resultant effect on GDP will be almost 1.9 percentage points, keeping the other conditions constant. Over the time tourism sector attracted millions of tourists thus contributing towards major social and economic changes in the tourist attracted places. Tourism not only affects the national economy but also affects the local economy, the effects on the local economy can't be determined empirically because of the informal nature of the tourism sector. Tourism affects the economy in many ways, being a source of employment generation, social cohesion, cultural exchange, and it improves the global outlook of an economy thus attracting FDI, mutual cooperation among nations of different economic and social nature (Ghulam Muhammad Qamri, Sheng, Khan, & Hanim, 2021). Furthermore, results depict variables affect each other in long run, meaning if investment in tourism sector is done today, its economic benefits will be observed because infrastructure development, hoteling industry take relatively longer time to develop, thus short-term elasticities are higher than long run elasticities. It means whenever government increase spending on tourism industry and

more the arrivals of international tourists, its economic result will be observed in long run as indirect affects captured from tourism take relatively a longer time.

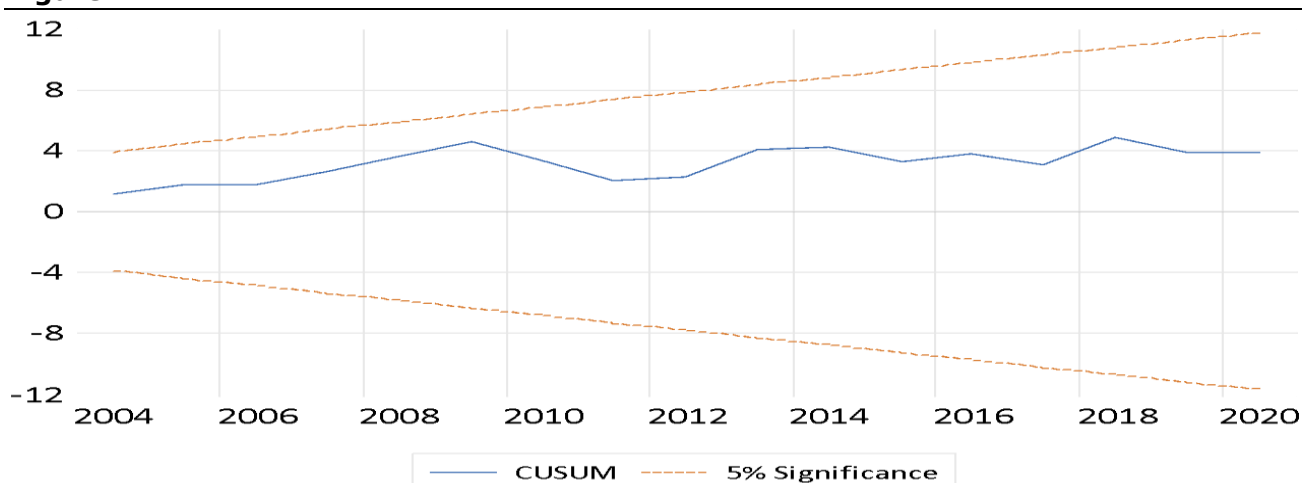
To test the long run relationship between variables, bound testing approach has been used. The coefficient of inflation shows that whenever inflation in an economy take place, economic growth will be contracted. Inflation demotivates local as well as international tourist. International tourist arrivals have significant positive impact on economic growth. More the international tourist’s arrivals more will be employment generation opportunities, increased demand for food and beverage industry, hotels accommodation thus positive impact on economy through multiple ripple effect. Our findings show that error correction term is converging and statistically significant. Our study has shown the positive relationship between economic growth and tourism sector and results are in accordance with existing findings. Schubert, Brida, and Risso (2011) examined the positive relation between growth of tourism demand and economic growth and thus improving their terms of trade. Balaguer and Cantavella-Jorda (2002) also investigated that international tourism and global competitiveness and any government policy regarding tourism promotion have positive impact on economic growth of Spain. Adnan Hye and Ali Khan (2013) concluded the long run relationship between income from tourism and economic growth. Natural disaster such as earthquake and war on terrorism affected the income from tourism over the time when economy was involved in dealing these issues, thus remarkable reduction in tourism activities, creating a dent on economic growth. Rauf, Abbas, Rafiq, Shakir, and Abid (2022) explored that political instability, food inflation and crime rate severely impact tourist’s attraction thus pose negative impact on economic growth. Bhatti et al. (2022) investigated that both globalization and tourism have contribution towards economic growth in short run as well as long run.

5.4. Stability Tests

Stability tests are employed to check whether any major economic event or structural change in history of country affected the relationship between variables or not. Stability test CUSUM and CUSUMSQ has been employed over the model. CUSUM and CUSUMSQ chart are interpreted as, if the blue line lies within the red lines, it means model is structurally stable, means no economic event has affected the dependence of economic growth on tourism. The stability of ECM coefficient is evident from the CUSUM and CUSUMSQ as all the plots are within the critical bounds at 5% significance level.

5.4.1. CUSUM

Figure 1



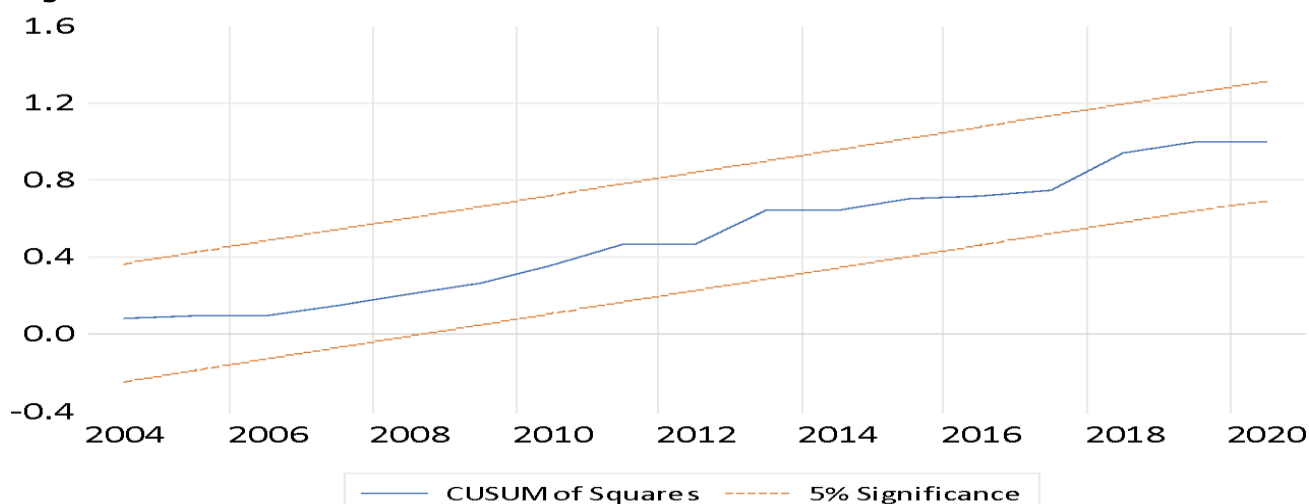
CUSUM test is applied to time series analysis to check constancy of intercept in linear regression. In this case, it concludes that the plot remains within critical bounds at a 5% level of significance or 95% confidence interval, so the model is structurally stable.

Null hypothesis: No structural break

Based on CUSUM chart, there is no inconsistency in intercept.

4.3.2 CUSAM OF SQUARE

Figure 2



CUSUMSQ is used to check whether structural breaks occur due to slope coefficients of model. In this case, it concludes that the plot remains within critical bounds at a 5% level of significance, so the model is structurally stable.

6. Conclusion and Policy Implication

Nature has blessed Pakistan with gorgeous and eye-catching natural sceneries, century-old civilization, and the golden beaches of Makran, a diverse climate, culture, and hostile nation. Natural beauty attracts millions of tourists to such places although those areas face social and economic problems such as poverty, unemployment, inflation, and infrastructure deficiencies. Millions of local and international tourists and travellers are attracted by its variety of natural scenes, ranging from desert to the world's highest altitude peaks, having ethnicity and a variety of cultures across its different demographic regions. The most visited tourist spots include Swat, Mansehra, Chitral, Dir, and Malakand districts of KPK, GilgitBaltistan, Azad Jammu and Kashmir, and historical places of Lahore, Taxila etc. The core purpose of this study is to consider how the tourism sector affects the economic growth of Pakistan. This paper incorporates time series data from 1995 to 2020 using ARDL approach. This paper concludes that there exists long run relationship between tourism sector growth and economic growth. Tourism has direct as well indirect effect on economy of Pakistan. Pakistan must focus on its various socioeconomic problems such as Terrorism, ethnic disputes etc. that affects its global image, government must focus on enhancing tourist activities. Federal government in cooperation with provincial governments must focus on encouraging tourism culture thus promoting tourism industry by launching advertisement and e-portal for tourist reservations, routes navigation, and relaxed visa policy for international tourists. Government must allocate budget for improvement of infrastructure projects to attract tourist. Various projects under the CPEC Project and their extension towards tourist places must be initiated to promote this industry.

This study suggests that through development of tourism industry, government can create employment opportunities, income sources for local residents, thus lessen burden on government, as well as other economic activities that directly impact economic growth. Travel and Tourism can attract foreign direct investment. Government should prioritize tourism industry by providing incentive such as for development of infrastructure, i.e., good transportation facilities, improved quality of hotels. Government should focus on those factors which hamper tourism promotion such as political instability, terrorism, crime rate in that area because such activities not only destroy the tourism sector but also abolish the soft image of Pakistan. Thus, state should formulate such policies which promote sustainable tourism in Pakistan. The government must implement a rigid policy regarding terrorism and political stability because these factors affect tourism adversely. Tourism in Pakistan can be promoted keeping in view the Modernization theory, Dependency theory as well as aspects of Sustainability. More developed infrastructure, easy and secure access to tourism destinations, establishing relationships with modern economies, cultural exchange programs and

environment-friendly tourism and economic policies to guarantee benefits for future generations. Pakistan must focus on the promotion of the tourism industry to get the full benefits embodied in its natural blessed beauty. The government should develop sustainable infrastructure in such areas, technological advancement, and private-public collaboration to enhance the volume of investment; promoting natural land and cultural heritage is the key component of tourism. Provinces must implement a dedicated tourism policy. If the government properly focuses on tourism, this sector has the potential to be a growth engine for an economy.

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