Government Expenditures, Health, and Economic Growth in Pakistan: A Comprehensive Overview for Sustainable Development

Nourena Shahzadi¹, Hina Hafiz², Sadia Idrees³, Salman Masood Sheikh⁴, Saif Ur Rahman⁵

Abstract

This research is conducted to investigate the effects of FDI, Government Expenditures on Population health and economic growth in Pakistan. This study inspects and provides a summary of the theoretical and empirical research conducted on the topic. First, it provides a thorough analysis of how government spending, unemployment, poverty, and foreign direct investment (FDI) affect Pakistan's population health and economic growth. Second, it integrates theoretical and empirical findings from published sources to acknowledge the body of literature already in existence. Additionally, this article also sheds light on the theoretical foundations that support the mechanics and justifications of various approaches. Thirdly, this paper suggests directions for future study that might be productive. Through a critical study and synthesis of current theories and studies, this paper advances our understanding of the effects of foreign direct investment (FDI) and government spending on population health and economic growth.

Keywords: Economic Growth, Population health, FDI

1. Introduction

Foreign direct investment stances as one of the most popular forms of investment globally, with an advantageous impact on economic growth. Foreign direct investment, according to Thamos et al. (2008) and Huang, Rahman, Meo, Ali, & Khan, (2024) is critical to advancing technology, improving the quality of local products, and encouraging creativity within local firms. The examination of foreign direct investment's contribution to economic and human development has covered a wide range of situations, including technological and developmental advancements, as well as issues like pollution, income inequality, and environmental effects. "Health constitutes a fundamental element of development. Song, Anees, Rahman, & Ali, (2024) (Kanwal, Khalid et al. 2023). Moreover, foreign direct investment has the ability to give host countries the financial support they need to upgrade their healthcare systems, (Nunnenkamp & Spatz, 2003). However, foreign companies usually don't pay more than local companies on their own, so they can provide better public areas and safe places for their employees to work. (Burns et al., 2017; Nagel et al., 2015; Herzer & Nunnenkamp, 2012; Zhao, Rahman, Afshan, Ali, Ashfaq, & Idrees, (2023)(Kanwal, Tayyab et al. 2023; Fatima & Zaman, 2018). When the impact of foreign direct investment on population health exhibits a nonlinear connection, FDI is still associated with a slight increase in life expectancy, particularly when a more limited sample of industrialized host nations is included. Qadri, Shi, Rahman, Anees, Ali, Brancu, & Nayel, (2023). There has been a long-standing discussion in the literature about the importance of macroeconomic factors for population health. Conversely, the dominant view, similar to the seminal work by Shahzadi, Sheikh, Sadiq, & Rahman, (2023) titled 'Wealthier is Healthier,' contends that long-term or cross-national economic development is good for health. The same idea might not apply to sudden changes in macroeconomic circumstances, either. (Gerdtham, 2006) (Younas, Shoukat et al. 2023) (Kanwal, Tayyab et al. 2023; Khan & Ullah, 2017; Ismail & Saeed, 2017).

There is an efficacious health sector in Pakistan. The healthcare industry has faced many difficulties, such as inadequate planning, poor quality and inefficiencies in its structure, inadequate policy scrutiny, a lack of qualified workers, and systemic corruption in health sector (Rahman, Chaudhry et al. 2022; Labeeqye & Sanaullah, 2017). The World Health Organization (WHO) states that every country's healthcare infrastructure consists of all the specialized institutions, organizations, and resources involved in providing health-related services Hafiza, Rahman, Sadiq, Manzoor, Shoukat, & Ali, (2023). As defined, a health action is any endeavor with the primary goal of promoting, restoring, maintaining, or improving health, whether it is through cross-sector initiatives, individual healthcare, or public health services Ilyas, Banaras, Javaid, & Rahman, (2023) The WHO's definition of a health system emphasizes the critical role that governments play in every country. It emphasizes their responsibility to ensure that the country's healthcare system satisfies the necessary requirements, which will eventually improve the population's quality of life, (Ahmad, Hasan, 2016)(Altaf, Awan et al. 2023, Awan, Bibi et al. 2023). There has been debate among various researches over the connection between public spending and developmental results, both social and economic. Dawood, Rahman, Majeed, Umair, & Idrees, (2023) have inquired the correlation between government spending and economic outcomes. In parallel, (Kanwal, Hassan et al. 2023) Zahra, Nasir, Rahman, & Idress, (2023) have focused their attention towards the social aspects of outcomes. Public spending varies greatly between nations, especially in the healthcare industry. Some governments, especially those in developing nations, devote less than 1% of their GDP to this field Ullah, Rehman, Raman, (2023). In contrast, governments in developed nations such as the United States spend more than 10% of their GDP on healthcare services Chaudhary, Nasir, Rahman, & Sheikh, (2023). How does the government's expenditure and foreign direct investment (FDI) in Pakistan correlate with public health and economic growth asymmetrically? Is there any significant nonlinear effect on population health and economic growth, both in the short and long terms, from government spending and foreign direct investment (FDI) in Pakistan?

1.1. Problem Statement

Like other emerging countries, Pakistan must quickly industrialize in order to meet its developmental needs Khan, Rahman, Fiaz, (2023). But the required industrialization process is hampered by the low level of technology, poor investment, and small gross domestic savings rate in the nation Usman, Rahman, Shafique, Sadiq, & Idrees, (2023) Developing nations have traditionally relied on grants and aid from outside to close this gap.

¹ MS Scholar, Faculty of Economics and Commerce, Superior University Lahore, Pakistan, nainaansari15@gmail.com

² MS Scholar, Faculty of Economics and Commerce, Superior University Lahore, Pakistan, hinakhanpu12@gmail.com

³ Faculty of Economics and Commerce, Superior University Lahore Pakistan, <u>midrees485@gmail.com</u>

⁴ Dean & Professor, Faculty of Economics and Commerce, Superior University Lahore, Pakistan, dean.fec@superior.edu.pk

⁵ Associate Professor, Faculty of Economics and Commerce, Superior University Lahore, Pakistan, saifrao12@gmail.com

Globalization has, however, caused many developing nations to shift from aid-dependent to trade economies, seeing investment as a driver of economic expansion, (Ali & Shaheen, 2019) (Arslan, Kanwal et al. 2023, Awan, Arslan et al. 2023; Ali & Afzal, 2016; Khan, 2016; Abigail, 2023; Muhammad, 2023; Ali, 2022).

The pursuit of foreign direct investment (FDI) by developing countries has led to heightened competition amongst governments in times. (Awan, ul Hasnain et al. 2023) (Aranda & Sauvant, 1996; Oman, 1998; Chudnovsky & Lopez, 1999; Shahid, Gurmani, Rahman, & Saif, (2023; Ahmad, 2016). The belief that foreign direct investment (FDI) is an essential tool for fostering growth and enhancing competitiveness is what motivates this competition. These nations' governments see luring FDI as a tactical need to further economic progress. (Chudnovsky & Lopez, 1999)

Pakistan has pretty diverse healthcare system from tertiary care centers down the road to primary care centers; but unfortunately, they have lost their credibility at the hands of ill-administration Nawaz, Rahman, Zafar, & Ghaffar, (2023). Resource constraints are one of the important barriers to quality healthcare but mal-governance, negligence, unjust and unaccountability are the deadly poisons that not only restrict more allocation of resources but also injure the existing ones. Faran, Ahmed, 2018)

The health sector in Pakistan grapples with challenges like low quality, inefficiency, and structural deficiencies, exacerbated by issues such as inadequate policy scrutiny, planning, a shortage of skilled personnel, and corruption. Bureaucratic influence has degraded the medical care framework, leading to unequal access and resource distribution. Over the past 50 years, the sector has worsened Tabassum, Rahman, Zafar, & Ghaffar, (2023). Foreign direct investment is identified as a potential positive influence, known for fostering development and improving conditions in low- and middle-income countries

2. Literature Review

In this section, the literature is reviewed with regard to how government spending and foreign direct investment (FDI) affect the social sector, especially healthcare, and how this influences economic growth. It examines research where government spending and foreign direct investment (FDI) are significant variables Idrees, Awan, Arslan, Hussain, Razzaq, Haris, & Rahman, (2023). A plethora of literature has been written about the effects of government spending. Studies that look at the relationship between government spending and economic results, including economic growth, are among the most important (Altaf, Awan et al. 2023, Awan, ul Hasnain et al. 2023).

Foreign direct investment (FDI) has become a vigorous form of global financing, yet it experienced a 12 percent decline in 2022, reducing to \$1.3 trillion, (UNCTAD, 2023) (Awan, Rahman et al. 2023)Qureshi, Zaman, Rahman, Shahzadi, (2022). The prospect of cross-border investments and the global economic environment will still be difficult in 2023. Attracting foreign direct investment (FDI) is essential for both developed and under developing countries, (Awan 2023)but it is particularly important for emerging countries that have lower income levels and savings rates. Beyond bank loans, portfolio investments, and official development assistance (ODA), FDI has become the main source of net resource flows for developing nations. (Miyamoto, 2003).

Population health is one of the most important measures of a country's stability and rate of growth Mukhtar, Mukhtar, Mukhtar, Shahid, Razzaq, Rahman, (2023).Pakistan is classified as a lower-middle-income nation by the World Development Report, with GDP growth rates of 5.8% and 6.1% in the fiscal years 2021 and 2022, respectively Shahid, Muhammed, Abbasi, Gurmani, & Rahman, (2022)In 2023, there was a 0.6% decline, though. Pakistan's public health spending accounts for 0.9% of GDP, whereas total health spending (public and private sectors combined) for 2.4% of GDP, (Faran, Ahmed, 2018). Pakistan committed 1.2% of its GDP, or gross domestic product, to the public health sector in the 2020–2021 fiscal year, up from 1.1% in the 2019–2020 fiscal year. On the other hand, this growth in GDP % is not thought to be noteworthy. (World Bank Report, 2023).

Over nine million children under the age of five in underdeveloped nations died of preventable causes in 1995, according to Zulfiqar, Ansar, Ali, Hassan, Bilal, & Rahman, (2022) Filmer and Pritchett, 1999; Ahmad, & Hasan, 2016). This emphasizes how crucial the government is to maintaining and promoting public health across the country. Empirical analyses were carried out to examine the relationship between national health outcomes and public health spending in developed nations. According to Hafiza, Manzoor, Fatima, Sheikh, Rahman, Qureshi, (2022), (Kim and Lane,2013; Ahmad & Hasan, 2016), there is a positive correlation between government health spending and life expectancy at birth and a negative correlation between government health expenditure and the infant mortality rate.

The effect of FDI on important aspects of quality of life, such health, is still an issue that is neglected, despite a delayed focus to this topic, (Nagel et al., 2015; Glick et al.; Blonigen & O'fallon, 2011). The link between FDI and health is explored, emphasizing a robust workforce as a factor in foreign stockholders' location decisions (Hassan et al., 2017; Azemar & Desbordes, 2009; Alsan et al. 2006). Olayiwola et al. (2019) conducted a study on the relationship between human capital, FDI, and population health, finding an insignificant yet positive effect of FDI on population health in the Economic Community of West African States from 1980 to 2018.

FDI, beyond providing essential capital, offers key advantages for developing economies Fatima, Jamshed, Tariq, & Rahman, (2023). These include broadening access to global markets, facilitating technology transfer, boosting tax revenue, and enhancing domestic market competitiveness through spillover effects (Loungani & Razin, 2001; UNCTAD, 2004a) (Awan, Shahid et al. 2023). Acknowledging these benefits, leaders at the International Conference on Financing for Development in 2002 deemed FDI as a catalyst for economic growth and an integral element of poverty alleviation, as emphasized in the Monterrey Consensus, (United Nations, 2002) Li, Bai, Yu, Meo, Anees, & Rahman, (2022).

Moreover, studies have shown that FDI is a driving force behind economic expansion, the resolution of market imperfections, and the raising of living standards in low-income countries (Kanwal, Khalid et al. 2023). These indicators may have an impact on the availability of healthcare services, especially in middle-class countries where access to care is mostly determined by an individual's ability to pay Shahzadi, Ali, Ghafoor, & Rahman, (2023). In these cases, local companies might provide their staff with better social and medical facilities .This research finding are in align with (Awan, Ali et al. 2023, Awan, Rahman et al. 2023).

An analysis of the non-linear impacts of FDI on life expectancy with a population health focus was conducted by (Nagel et al. 2015). A panel dataset spanning 179 nations from 1980 to 2011 was used in their research Khoula, Rahman, Idress, (2022). The study's main conclusions showed that, depending on income levels, there are non-linear correlations between foreign direct investment (FDI) and health outcomes. In particular, the study found that FDI improved health in lower-income settings and had a positive association with it Zainab, Qaisra, Hassan, Haris, Rahman, & Ali, (2023). However, it also found that the impacts of FDI decreased with rising income levels and eventually reversed with higher incomes (Nagel et al. 2015; Rahman, Chaudhry et al. 2022)(Ilyas-Lecturer, Awan et al. 2023).

Different studies have inspected the correlation between FDI and economic growth using various econometric techniques, with varying outcomes (Arslan, Kanwal et al. 2023, Kanwal, Hassan et al. 2023, Kanwal, Tayyab et al. 2023). In 2009, Lee and Chang, 2009; Sattar, Hassan et al.,2022) carried a research using a panel correction and panel co-integration model with annual data from 37 countries covering from 1970 to 2002. They investigated a strong long-term correlation but a poor short-term correlation. Numerous studies, including Rahman, Ali, Idrees, Ali, & Zulfiqar, (2022), have investigated the impact of foreign direct investment (FDI) on human development and public health outcomes. Kaulihowa & Adjasi, 2018, carried out a targeted analysis of the nonlinear effects of FDI on welfare of people in a panel of twenty African countries between 2000 and 2013. According to their findings, FDI has positive impact on working conditions, employment prospects, and life expectancy Khan, Afridi, Shad, Rahman, (2022). The study found that FDI has a nonlinear impact on wellbeing, with the nonlinear component's growth being less noticeable than the linear component's. The results essentially validate the positive impact of FDI on welfare, underscoring its diverse range of consequences.

Many studies have examined the relationship between government spending and its effects, particularly in relation to growth and other economic outcomes. This relationship has been the subject of extensive investigation by Hassan, Sheikh, & Rahman, (2022) While certain studies indicate a positive association between government spending and economic growth, others present conflicting findings. Attari, Javed, (2013) investigated a positive correlation between government expenditure and economic growth Ilyas, Awan, Kanwal, Banaras, Rahman, Ali, (2023).

Furthermore, some research focused on how government spending affects social indicators including health and education (Baldacci 2003; Filmer & Pritchett 1999; Ahmed & Hassan, 2016; Kim and Lane 2013; Craigwell et al. 2012) Awan, Rahman, Ali, & Zafar, (2023). Filmer & Pritchett, 1999) highlighted the critical role that governments play in fostering good health, pointing out that in poor nations in 1995, almost nine million children under the age of five died from preventable causes. Empirical research on the relationship between national health outcomes and public health spending in developed nations was carried out by Kim & Lane, 2013). Their results showed a positive link with life expectancy and a negative correlation between government health spending and infant mortality. Filmer and Pritchett (1999) observed a weak relationship between public spending and social results, emphasizing the difficulty in making general policy conclusions from cross-national data because different countries have different needs and require different policy recommendations. Moreover, Kefeli & Zaidi, (2018) examined the causal relationship between economic development and health in a subset of OIC countries classified as high-income countries.

3. Research Methodology

This study gathered and carefully examined pertinent literature in accordance with the guidelines of a systematic literature review (Jesson, Matheson, & Lacey, 2011). Employing a structured critical review form, this study evaluates key aspects of previous studies, encompassing focus, bibliographic details, theory application (if relevant), research philosophy (Zikmund, Babin, Carr, & Griffin, 2013), key findings, methodology, FDI definition, domain, research context, geographical location, theoretical and practical insights, and concluding limitations. employing a comprehensive strategy involving economics journals listed in Clarivate Analytics, databases like Google Scholar, Business Source Premier and Scopus, and a diverse cross-disciplinary FDI bibliography. The selection criteria exclude papers not addressing FDI or lacking empirical or conceptual content (e.g., books, commentaries). After removing duplicates, this study finds more than 20 publications and evaluates them according to abstracts, titles, and, if relevant, methodology.

4. Conclusion

After completing a thorough examination of the literature, it is shown that when FDI and government spending are compared to the total amount of FDI, both positive and negative effects arise. Many studies that show both major positive and negative effects of foreign investment on the general economy reflect the current debate about this topic. This dichotomy of results illuminating the gaps in the literature, especially with relation to FDI's impact on population health, is particularly noteworthy. This study aims to contribute to the FDI and government expenditures, particularly by exploring FDI and government expenditure impact on the population health in Pakistan. This study attempts to provide a thorough overview of previous research on FDI, population health, government expenditure, including contextual techniques and practices, by adhering to findings from pertinent literature. It is essential to note that this study does not develop more variables, emphasizing its primary goal of offering a clear and thorough understanding of previous research on examining the effect of FDI and government expenditures on Economic growth and population health.

References

Abigail, E. C. (2023). Unlocking Economic Growth Through Taxation in the case Nigeria. *Journal of Business and Economic Options*, 10(4), 19-25.

Ahmad, K. (2016). Addressing Demographic Challenges: Strategies for Sustainable Economic Growth in Pakistan. *Journal of Business and Economic Options*, 3(2), 22-32.

- Ali, A. (2022). Foreign Debt, Financial Stability, Exchange Rate Volatility and Economic Growth in South Asian Countries. *Journal of Business and Economic Options*, 9(4).
- Ali, A., & Afzal, M. (2016). Human Capital Development and Economic Growth: A Panel Data Analysis. *Journal of Policy Options*, 3(3), 49-59.
- Ali, S., Rahman, S.U., & Anser, M. K. (2020). Stem Cell Tourism and International Trade of Unapproved Stem Cell Interventions. *Annals of Social Sciences and Perspective*, 1(2), 79-90.
- Awan, A., Shahid, S., Rahman, S. U.andBaig, M. A.(2023). Analysing the Impact of Macroeconomics Variables on Poverty in Pakistan: A Fresh Insight using ARDL to Cointegration Analysis. *IUB Journal of Social Sciences*, 5(2), 318–333
- Bilal, S, Shah, S, Z, A; Rahman, S, U., Jehangir, F, D (2022). Impact of Resource Rents and Institutional Quality on Economic Growth: An Approach of Panel Threshold Analysis. *Competitive Educational Research Journal*, 3(2), 195-12.
- Fatima, N., & Zaman, A. (2018). Financial Development, Innovation, and Economic Growth: Evidence from Developing Countries. *Journal of Policy Options*, *5*(1), 6-17.
- Hafiza, N, S., Manzoor, M., Fatima, K., Sheikh, S, M., Rahman, S, U., Qureshi, G, K (2022). Motives of Customer's E-Loyalty Towards E-Banking Services: A Study in Pakistan, *Palarch's Journal of Archaeology of Egypt/Egyptology*, 19(3), 1599-1620.
- Hafiza, N, S., Rahman, S, U., Sadiq, A., Manzoor, M., Shoukat, Z., & Ali, M. (2023). Effect of FDI, Trade Openness and Employment and Manufacturing Sector Growth: Evidence from Pakistan Based ARDL Approach. *Central European Management Journal*, 31(1), 733-756.
- Hassan, K. H. U., Sheikh, S. M., & Rahman, S. U. (2022). The Determinants of Non Performing Loans (NPLs); Evidence from the Banking Sector of Pakistan. *Annals of Social Sciences and Perspective*, *3*(1), 1-22.
- Huang, Y., Rahman, S. U., Meo, M. S., Ali, M. S. E., & Khan, S. (2024). Revisiting the environmental Kuznets curve: assessing the impact of climate policy uncertainty in the Belt and Road Initiative. *Environmental Science and Pollution Research*, 1-15.
- Idrees, S., Awan, A., Arslan, S, M., Hussain, M., Razzaq, N., Haris, M. & Rahman, S. (2023). Does Green Finance, Technology and Financial Development Matter Environmental Sustainability? Novel Insight from Pakistan Based Nonlinear ARDL Approach. *Journal of Data Acquisition and Processing*, 38 (3), 3423-3448.
- Ilyas, A., Awan, A., Kanwal, A., Banaras, A., Rahman, S. U., Ali, M. (2023). Green HRM Practices and Environmental sustainability in Banks of Pakistan: The role of Financial Leadership behavior, Personality Traits, and Employee Engagement with environmental Initiatives in sustaining individual Green Behavior. *Central European Management Journal*, 31(2), 197-223.
- Ilyas, A., Banaras, A., Javaid, Z., & Rahman, S.U. (2023). Effect of Foreign Direct Investment and Trade Openness on the Poverty Alleviation in Burundi Sub African Country: ARDL (Co-integration) Approach. *Pakistan Journal of Humanities and Social Sciences*, 11(1), 555–565
- Ismail, H., & Saeed, A. (2017). Islamic Bank ing and Finance in Pakistan: Growth Trends, Outlook, and Strategic Imperatives. *Journal of Policy Options*, 4(3), 70-78.
- Khan, A. (2016). Driving Economic Growth Through Vocational Education: Empirical Evidences from Pakistan. *Journal of Policy Options*, 3(2), 29-36.
- Khan, R., & Ullah, B. (2017). Examining the Impact of Firm Sustainability Practices on Firm Growth: Evidence from the United States. *Journal of Policy Options*, 4(4), 89-103.
- Khan, S, M., Rahman, S. U., Fiaz, S. (2023). Impact of Foreign Direct Investment (FDI), Institutional Performance and Scientific Innovations on Environmental Degradation: Evidence from OIC Countries. *Research Journal for Societal Issues*, 5(1), 194–210.
- Khan, Y., Afridi, F. A., Shad, F., Rahman, S.U (2022). The Socio-Cultural Factors Influence on Social Entrepreneurs. *Competitive Education Research Journal*, *3*(1), 135-146.
- Khoula, G., Rahman, S, U., Idress, S (2022). Does Foreign Direct Investment Promote Economic Growth: Evidence from Pakistan Based ARDL to Cointegration Approach. *Journal of Contemporary Macroeconomic Issues*, 3(1), 54-63.
- Labeeque, A., & Sanaullah, A. (2017). Towards Inclusive Economic Growth: Synthesizing Strategies for Social Inclusion in Development. *Journal of Policy Options*, 4(1), 16-26.
- Li, D., Bai, Y., Yu, P., Meo, D. M. S., Anees, A &. Rahman, S.U (2022). Does Institutional Quality Matter for Environmental Sustainability? *Frontiers in Environmental Science*, 1- 12.
- Muhammad, A. A. (2023). Examining the Relationship among Unemployment, Inflation, and Economic Growth. *Journal of Business and Economic Options*, 10(2), 23-31.
- Mukhtar, A., Mukhtar, S., Mukhtar, A., Shahid., Razzaq, H, R., Rahman, S, U. (2023). The Use of Social Media and Its Impact on The Learning Behavior of ESL University Students for Sustainable Education in Pakistan. *Central European Management Journal*, 31(2), 398-415.
- Nawaz, A., Rahman, S. U., Zafar, M., & Ghaffar, M. (2023). Technology Innovation- institutional Quality on Environmental Pollution Nexus From E-7 Nations: Evidence from Panel ARDL Cointegration Approach. *Review of Applied Management and Social Sciences*, 6(2), 307-323.
- Qadri, S. U., Shi, X., Rahman, S. U., Anees, A., Ali, M. S. E., Brancu, L., & Nayel, A. N. (2023). Green finance and foreign direct investment—environmental sustainability nexuses in emerging countries: new insights from the environmental Kuznets curve. *Frontiers in Environmental Science*. 11, 1074713.
- Qureshi, G, S., Zaman, M, W, U., Rahman, S, U., Shahzadi, H, N. (2022). Legal Insights of Crypto currency Market and State of Crypto-currency in Pakistan. *Superior Law Review*, 2(1), 77-104.

- Rahman, S. U., & Bakar, N.A., (2018). A Review of Foreign Direct Investment and Manufacturing Sector of Pakistan. *Pakistan Journal of Humanities and Social Sciences*, 6(4), 582 599.
- Rahman, S. U., & Bakar, N.A., (2019). FDI and Manufacturing Growth: Bound Test and ARDL Approach. *International Journal of Research in Social Sciences*, 9(5), 36–61.
- Rahman, S. U., & Bakar, N.A., (2019). Manufacturing sector in Pakistan: A Comprehensive and Development. *Pakistan Journal of Humanities and Social Sciences*, 7(1), 77 91.
- Rahman, S. U., Ali, S., Idrees, S., Ali, M. S. E., & Zulfiqar, M. (2022). Domestic Private Investment, and Export on Output Growth of Large-Scale Manufacturing Sector in Pakistan: An Application of Bound Tests to Cointegration Approach. *International Journal of Management Research and Emerging Sciences*, 12(2). 239-270.
- Rahman, S., Chaudhry, I. S., Meo, M. S., Sheikh, S. M., & Idrees, S. (2021). Asymmetric effect of FDI and public expenditure on population health: new evidence from Pakistan based on non-linear ARDL. *Environmental Science and Pollution Research*, 1-16.
- Rahman, S.U., Bakar, N. A., & Idrees, S. (2019). Long Run Relationship between Domestic Private Investment and Manufacturing Sector of Pakistan: An Application of Bounds Testing Cointegration. *Pakistan Journal of Social Sciences (PJSS)*, 39(2). 739-749
- Sarwar, F., Ali, S., Bhatti, S. H., & Rahman, S. (2021). Legal Approaches to Reduce Plastic Marine Pollution: Challenges and Global Governance. *Annals of Social Sciences and Perspective*, 2(1), 15-20.
- Shafique, M, R., Rahman, S. U., Khizar, S., Zulfiqar, M (2021). How does Poverty, Foreign Direct Investment, and Unemployment affect Economic Growth: Evidence from Pakistan co-integration ARDL Approach. *International Journal of Research in Economics and Commerce*, 2(1), 14-23.
- Shahid, A. U., Ghaffar, M., Rahman, S. U., Ali, M., Baig, M. A., & Idrees, S. (2022). Exploring the Impact of Total Quality Management Mediation between Green Supply Chain Method and Performance". *PalArch's Journal of Archaeology of Egypt/Egyptology*, 19(4), 1252-1270.
- Shahid, C., Gurmani, M. T., Rahman, S. U, & Saif, L. (2023). The Role of Technology in
 Online Classes at Tertiary Level. Journal of Social
 Sciences Review, 3(2), 232-247

 English Language Learning in
- Shahid, C., Muhammed, G. A., Abbasi, I. A., Gurmani, M. T., & Rahman, S, U. (2022). Attitudes Of Undergraduates and Teachers Towards Evolving Autonomous Learning L2 In Higher Education. *Journal of Positive School Psychology*, 6(11), 527-544.
- Shahzadi, H. N., Ali, M., Ghafoor, R. K., & Rahman, S. U. (2023). Does Innovation and Foreign Direct Investment Affect Renewable Energy Consumption? Evidence from Developing Countries. *Pakistan Journal of Humanities and Social Sciences*, 11(2), 926–935.
- Shahzadi, H. N., Sheikh, S. M., Sadiq, A., & Rahman, S. U. (2023). Effect of Financial Development, Economic Growth on Environment Pollution: Evidence from G-7 based ARDL Cointegration Approach. *Pakistan Journal of Humanities and Social Sciences*, 11(1), 68-79.
- Song, M., Anees, A., Rahman, S. U., & Ali, M. S. E. (2024). Technology transfer for green investments: exploring how technology transfer through foreign direct investments can contribute to sustainable practices and reduced environmental impact in OIC economies. *Environmental Science and Pollution Research*, 1-16.
- Tabassum, N., Rahman, S. U., Zafar, M., & Ghaffar, M. (2023). Institutional Quality, Employment, Trade Openness on Environment (Co2) Nexus from Top Co2 Producing Countries; Panel ARDL Approach. *Review of Education, Administration & Law*, 6(2), 211-225.
- Ullah, S. Rehman, C., A., Raman, S., U. (2023). Public Investment, Technological Innovations, and Environmental Degradation: Asymmetric ARDL Approach. *Pakistan Journal of Humanities and Social Sciences*, 11(2), 704-716
- Usman, M., Rahman, S. U., Shafique, M. R., Sadiq, A., & Idrees, S. (2023). Renewable Energy, Trade and Economic Growth on Nitrous Oxide Emission in G-7 Countries Using Panel ARDL Approach. *Journal of Social Sciences Review*, 3(2), 131-143.
- Younas, N., Idrees, S., & Rahman, S.U (2021). Impact of Workplace Ostracism on Turnover Intention with mediation of Organizational Cynicism. *International Journal of Business and Finance Implications*, 2(1), 1-13
- Zahra, A., Nasir, N., Rahman, S. U., & Idress, S. (2023). Impact of Exchange Rate, and Foreign Direct Investment on External Debt: Evidence from Pakistan Using ARDL Cointegration Approach. *IRASD Journal of Economics*, *5*(1), 709–719.
- Zainab, J., Qaisra, N., Hassan, I., Haris, M., Rahman, S, U., & Ali, M. (2023). Assessing Mediating Role of Environment Knowledge Between Green Resource Management and Sustainable Performance, Under Moderating Effects of Green Self- Efficacy. Central European Management Journal, 31(2), 352-368.
- Zhao, J., Rahman, S. U., Afshan, S., Ali, M. S. E., Ashfaq, H., & Idrees, S. (2023). Green investment, institutional quality, and environmental performance: evidence from G-7 countries using panel NARDL approach. *Environmental Science and Pollution Research*, 1-16.
- Zhu, L., Fang, W., Rahman, S. U., & Khan, A. I. (2021). How solar-based renewable energy contributes to CO₂ emissions abatement? Sustainable environment policy implications for solar industry. *Energy & Environment*, 34(2), 0958305X211061886.
- Zulfiqar, M., Ansar, S., Ali, M., Hassan, K. H. U., Bilal, M., & Rahman, S. U. (2022). The Role of Social Economic Resources Towards Entrepreneurial Intentions. *PalArch's Journal of Archaeology of Egypt/Egyptology*, *19*(1), 2219-2253.