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G-7 Green Growth Paradox: An Exploratory Review of Economic Policy Uncertainty, Renewable Energy, and Institutional Quality

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Abstract
This study aims to investigate the asymmetric link among institutional quality, economic policy uncertainty, and renewable energy and its effects on green growth. The study's time frame was from 1996 to 2023. The existing theoretical and empirical literature on the subject is examined and summarized in this work. It begins by providing an overview of how institutional quality, renewable energy, and economic policy uncertainty relate to green growth, using data from the G-7. The literature is identified in a second way, drawing on theoretical and empirical insights found in published literature. This article further clarified theoretical approaches that explain how and why these approaches function. Third, three useful metrics are suggested in this article for additional study. This study adds to the body of knowledge on how institutional quality, renewable energy, and economic policy uncertainties impact green? Data from the G-7 nations. The literature is identified in a second way, drawing on theoretical and empirical insights found in published literature. This article further clarified theoretical approaches that explain how and why these approaches function. Third, three useful metrics are suggested in this article for additional study. How can uncertainty in economic policy, renewable energy, and institutional quality affect green growth, according to this paper? Data from the G-7 nations.
Keywords: Green growth, renewable energy, uncertainty of economic policy

1. Introduction

Since environmental degradation directly affects human health and the ecology, it is one of the biggest global issues Huang, Rahman, Meo, Ali, & Khan, (2024); Song, Anees, Rahman, & Ali, (2024). As a result of the negative effects that environmental degradation has on present and future generations—heat waves, rising sea levels, melting glaciers, higher average global temperature, and abrupt variations in weather—countries across the globe are implementing the necessary measures to mitigate the problem Zhao, Rahman, Afshan, Ali, Ashfaq, & Idrees, (2023). Greenhouse gas emissions, particularly CO2 emissions, are the primary cause of environmental degradation (Qadri, Shi, Rahman, Anees, Ali, Brancu, & Nayel, (2023); Shahzadi, Sheikh, Sadiq, & Rahman, (2023). The G-7 nations—India, Brazil, Russia, China, Indonesia, Turkey, and Mexico—have seen extraordinary economic growth (EG) over the past three decades, but this expansion has also resulted in a marked rise in energy consumption and environmental deterioration. British Petroleum Statistics states that the G-7 accounts for over 42% of the world's energy consumption (see Fig. 1) and 46% of its carbon emissions (see Fig. 2) (BP-Statistical Review, 2021). The goal of the 2015 Paris Climate Agreement was to reduce global warming and limit the world's average temperature increase to less than 2. The G-7 nations—India, Brazil, Russia, China, Indonesia, Turkey, and Mexico—have seen extraordinary economic growth (EG) over the past three decades, but this expansion has also resulted in a marked rise in energy consumption and environmental deterioration. British Petroleum Statistics states that the G-7 accounts for over 42% of the world's energy consumption (see Fig. 1) and 46% of its carbon emissions (see Fig. 2) (BP-Statistical Review, 2021). The goal of the 2015 Paris Climate Agreement was to reduce global warming and limit the world's average temperature increase to less than 2.

Researchers and decision-makers from the G-7 are currently working to keep EG levels high without sacrificing environmental degradation. Achieving sustainable economic growth, or "green growth," is the answer to this issue (GGDP). According to Dawood, Rahman, Majeed, Umair, & Idrees, (2023), GGDP takes into account the monetary value of production that has been adjusted for the environment, whereas conventional EG simply takes into account the monetary value of the production process and ignores its environmental effects. From now on, GGDP ought to be taken into account when formulating strategies for sustainable development. Numerous factors, including fiscal decentralisation (Zahra, Nasir, Rahman, & Idress, (2023); Ullah, Rehman, Raman, (2023), human development and green energy (Hafiza, Rahman, Sadiq, Manzoor, Shoukat, & Ali, (2023), foreign direct investment (FDI) (Chaudhary, Nasir, Rahman, & Sheikh, (2023), natural resources Khan, Rahman, Fiaz, (2023), Usman, Rahman, Shafique, Sadiq, & Idrees, (2023) information and communication technology (ICT) (Shahid, Gurmani, Rahman, & Saif, (2023), environmental policy (Ilyas, Banaras, Javaid, & Rahman, (2023), R&D expenditure (Song et al., 2019), and others have been studied in recent literature. Nonetheless, it may turn out that IQ and EPU are important factors in green growth. The volatility of trade, monetary, fiscal, and other economic policies that influence the choices made by economic actors is referred to as EPU. It is possible that the economic agents will change their minds when faced with an uncertain economic environment. For instance, during times of economic uncertainty, investors may postpone making investments (Ilyas, Awan, Kanwal, Banaras, Rahman, Ali, (2023). In a similar vein, businesses and other interested parties may change their minds about what they decide to spend, invest, and save.

As a result, weaker financial and governmental policies are typically the outcome of uncertain economic situations (Awan, Rahman, Ali, & Zafar, 2023). The literature presents a conflicting and ambiguous picture of EPU's impact on EG, energy, and the environment. For instance, although Fatima, Jamshed, Tariq, & Rahman, (2023) asserted that EPU boosts returns on green investments, Li et al. (2021a) found that EPU reduces returns on green investments. Furthermore, Li et al. (2021b, 2022) proposed that labour and total factor productivity are hindered by EPU. Shahzadi, Ali, Ghafoor, & Rahman, (2023), reported that EPU reduces environmental pollution by reducing carbon emissions, however Zainab, Qaisra, Hassan, Haris, Rahman, & Ali, (2023) found that EPU has a negative impact on environmental quality by increasing environmental pollution. As a result, weaker financial and governmental policies are typically the outcome of uncertain economic situations (Mukhtar, Mukhtar, Mukhtar, Shahid, Razzaq, Rahman, 2023).

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1.1. Problem statement

It is widely acknowledged that preserving the environment is necessary to support national sustainability and the continuation of human life (Hafiza, Manzoor, Fatima, Sheikh, Rahman, Qureshi, (2022). In the last century, sea levels have risen 178 mm, global temperatures have climbed to 1.9 °F, and greenhouse gas (GHG) emissions have reached 413 parts per million, the highest level in 650,000 years. These increases have coincided with population growth. Perhaps the most pressing environmental and developmental issue at the moment is combating climate change Shahid, Muhammed, Abbasi, Gurmani, & Rahman, (2022), Qureshi, Zaman, Rahman, Shahzadi, (2022). Concerns about green technology are shared by all nations because of the global increase in greenhouse gases and climatic changes, which have an effect on both the environment and the economy. Innovation restores the environment's shame without jeopardising progress and expansion. Owing to the persistent and increasing pollution issue, environmental safety testing has become a priority for all global economies. Internationa. l municipalities have also made significant steps and implemented several essential environmental safety testings to prevent environmental contamination Sarwar, Ali, Bhatti, & Rahman, (2021). The seven countries deemed essential to the upkeep of high living standards in the world economy. It also raises their efficiency in producing energy and increases productivity. What is explore the relationship between green finance on economic policy uncertainty on green growth Evidence from G-7 Countries?

2. Literature Review

This section is divided into two subsections. We provide an empirical literature review and a theoretical literature review on greenhouse gas emissions in this work. The latter highlights research gaps from the body of existing literature.

2.1. Green growth

The OECD acknowledged in 2010 that environmental issues will force emerging nations to bear enormous financial burdens and that a novel approach was needed to create a more affluent global economy. When it became apparent that "growth" and "green" could no longer be discussed separately, they began to concentrate on "green growth." Accordingly, the OECD defines "green growth" as "sustainable growth that aims to achieve clean growth and environmental protection by pursuing sustainable economic growth and development while preventing environmental degradation, unsustainable resource use, and loss of biodiversity." As of 2010. The OECD continued to advance the concept in 2011 with the report "Towards Green Growth," evaluating it as "encourage EG and development whereas safeguarding that natural resources remain to deliver the facilities for human well-being" (Rahman, Chaudhry, Meo, Sheikh, & Idrees, 2021; Ali & Audi, 2016; Ali et al., 2021). This report reveals the essence of green growth and makes clear the connection between environmental protection, intergenerational equity, and economic development. With its more comprehensive rewording, it has emerged as one of the most well-known and convincing definitions to date. There are two main areas of focus for contemporary green growth research. One is to create a system theory-based framework for a green growth performance assessment index system in order to gauge the performance level of the GGDP. For instance, the OECD is the pioneer in putting forth the first to present a framework model of green growth indicators that encompasses four categories of elements, such as policy responses and the ecological and resource efficiency of economic activities (Ali et al., 2021; Zhu, Fang, Rahman, & Khan, 2021; Younas, Idrees, & Rahman, 2021; Shafique, Rahman, Khizar, Zulfiqar, 2021; Audi & Ali, 2017; Ali et al., 2022; Audi et al., 2020). This model serves as a reference for assessing the performance of countries in terms of green growth. UN. ESCAP (2013) developed an indicator system for analyzing and promoting green growth in response to the national characteristics and policy needs of the Asia-Pacific region. The system covers 66 evaluation indicators in five dimensions: equity and accessibility, productivity and efficiency, capital investment balance, structural transformation, and limit awareness. These indicators can be used to assess the performance of green growth in Asia-Pacific emerging nations. In order to create a system of green growth indicators (GGINs) that is more suitable for the African context, Ali, Rahman, & Anser, (2020); Rahman, & Bakar, (2019), drew on the GGDP indicator framework supplied by a number of international organizations. This framework includes five scopes: gender, monitoring the natural asset base, resource productivity and environment, governance, socioeconomic context and growth characteristics. A further area of

study is examining the route to GGDP. According to Jouvert and de Perthuis (2013), GGDP includes the two main goals of economic growth and environmental protection, which inevitably require changing the ways in which production and consumption are carried out. The development approach has changed as a result of numerous factors collaborating, and the elements of achieving green development are the key concern of academia at this stage. Through an empirical examination of panel data from eleven industrialised nations, Samad and Manzoor (2015) discovered that while market size, R&D spending, environmental taxes, and intellectual property rights (IPR) enforcement have an affirmative impact on green patents, IPR enforcement is negatively impacted. In order to achieve green development, Rahman, & Bakar, 2019); Rahman, Bakar, & Idrees, (2019). and Sohag et al. (2019) both highlight the importance of technological advancement in achieving green growth. This is because technological advancements can better integrate resource utilisation and address the conflict between GDP and energy supply and demand. But scholars have never agreed on a strategy for achieving green growth (Rahman, & Bakar, (2018; Audi & Ali, 2023; Ashiq et al., 2023; Audi & 2023). Using an empirical approach, this study examines the effects of employment, capital formation, RENE, TO, IQ, EPU.

2.2. Economic policy uncertainty and green growth

GGDP procedures have always included the policy as a vital component. Liu et al. (2023) used data from the BRICS countries between 1990 and 2020 to examine the inspiration behind the EPU on GGDP. They discovered that in the BRICS economies, EPU hinders GGDP. According to Rasool, Parveen, Majid & Rasool, (2022). GGDP originates from policy. The efficiency losses of actual economic activities brought on by information asymmetries, knowledge externalities, individual preferences, and other externalities can be compensated for by economic policy. To create a GGDP model, they incorporated environmental factors into the neoclassical model of growth. They then examined the theoretical effects of various policy instruments, including price, regulation, and subsidies, on GGDP and came to the conclusion that while policies can affect GGDP, they cannot produce GGDP on their own. In actuality, market, technology, and environment should all be included in regulations that promote green growth. Tech policies like IPR, tax credits, and R&D subsidies can help green technologies achieve innovation turnover Majid, Rasool, Shahzad, Shakir & Rasool, (2022). Market policies can help adjust changes in the price system of production factors and build green-oriented industries Rasool, Majid, Rasool & Mehmood, (2022). One cannot overlook the impact of policy on GGDP, and macro green development will unavoidably be impacted by policy uncertainty. From a "pollution haven" approach, Waqar, Javed & Rasool, (2023).empirically study inclusive GGDP in China and conclude that the impact of EPU on GGDP is multifaceted, including direct "policy-economic" impacts, the "beggar-thy-neighbor" model's partly mediating effects (haze pollution). Majid, Rasool, Rasool & Zafar, (2023) corroborate the EPU's findings regarding urban pollution and demonstrate that policy has a greater impact than capital factor allocation.

3. Methodology

The author of this study gathered and critically examined the pertinent literature by following the systematic literature review process as outlined by Jesson, Matheson, and Lacey (2011). The author develops a critical review form for a thorough and critical analysis, analysing a number of important aspects of the earlier studies, including the paper's focus, bibliographic information, theory applied when appropriate, research philosophy (Zikmund, Babin, Carr, & Gryphon, 2013), key findings, methodology, definition of FDI, FDI domain, research context, study location, theoretical and practical review, further conclusion, and reported limitations. The author looked through the literature from November 2017 to April 2018 for the critical review of this study. The researcher evaluated the relevant papers downloaded from (1) Economics journals listed in the Clarivate analytics (The Master Journal List 2017 and JCR report 2016); (2) Comprehensive databases (Business Source Premier by Ebsco and Scopus); in order to identify the most relevant green growth papers possible. (3) Google Scholar; (4) a comprehensive cross-disciplinary bibliography (with multiple references) on green growth that has been published in several periodicals. The author of this literature review designed the selection criteria for the literature based on the following attributes. For example, papers that do not address the effects of economic policy uncertainty, institutional quality, or renewable energy on green growth were omitted, as were those that are not conceptual or empirical (books, editorials, literature reviews, book comments, conference summaries, abstracts and keywords, executive abstracts, and newspaper/magazine pieces). After eliminating duplicates, the author found about 600 items in total. When necessary, the author looked at the abstract, title, and methodology of each paper to establish its applicability.

4. Conclusion

Following a comprehensive analysis of the literature, it is determined that both the positive and negative consequences of green growth are evident when compared to the overall value of the phenomenon. The fact that each of the two findings fills a vacuum in the literature on its own is really intriguing. Therefore, the implications of uncertainty in economic policy, institutional quality, and renewable energy on green growth are still being debated, and numerous research have been done to determine how foreign investment affects the economy as a whole. With the unique economic, financial, and technological circumstances of the host nations, some studies have shown a significant and beneficial impact on the expansion of the economy, while others have looked at a significant and negative impact Pakistan Journal of Humanities and Social Sciences, 6(4), 2018 595. This research will add to the body of knowledge on the effects of renewable energy, institutional quality, and economic policy uncertainty on green growth. It will also examine the implications of these factors on the green growth of the G-7 nations. The current study made an effort to connect key ideas from the literature with topic-relevant contributions. Furthermore, this study's examination of the variables is lacking. Thus, the primary goal of the study is to present an understandable and thorough overview of previously conducted research on green growth, taking into account contextual approaches and practices.

5. Future Recommendations

Three reasons are raised in this review of the literature that warrant additional investigation. First, the RDL model, OLS regression, and GMM technique are employed in the majority of research conducted to examine the effects of economic policy uncertainty and institutional quality on green growth. It has been noted that only a small number of studies have used a dynamic vector error

correction model (VCEM) to conduct the investigation during the literature review. In order to ensure that endogeneity and causation issues are addressed concurrently, the VCEM process helps to capture the time series dynamics under discussion appropriately. Furthermore, the VECM process also records any potential indirect effects and feedback. Furthermore, it is suggested that more research is necessary to determine how best to execute manufacturing growth while taking into account the significant effects of institutional quality and economic policy uncertainty on green growth inflows in the host country. The majority of studies on the effects of these factors on green growth have been conducted in the past and have mostly dealt with host country GDP and economic growth. Third, the studies are historical in nature and are examined within the framework of the G-7 nations.

References

Ali, A., & Audi, M. (2016). The impact of income inequality, environmental degradation and globalization on life expectancy in Pakistan: An empirical analysis. *International Journal of Economics and Empirical Research, 4*(4), 182-193.

Ali, A., Audi, M., & Roussel, Y. (2021). Natural resources depletion, renewable energy consumption and environmental degradation: A comparative analysis of developed and developing world. *International Journal of Energy Economics and Policy, 11*(3), 251-260.

Ali, A., Audi, M., Bibi, C., & Roussel, Y. (2021). The impact of gender inequality and environmental degradation on human well-being in the case of Pakistan: A time series analysis. *International Journal of Economics and Financial Issues, 11*(2), 92-99.

Ali, A., Audi, M., Senturk, I., & Roussel, Y. (2022). Do sectoral growth promote CO2 emissions in Pakistan? Time series analysis in presence of structural break. *International Journal of Energy Economics and Policy, 12*(2), 410-425.

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.

Ashiq, S., Ali, A., & Siddique, H. M. A. (2023). Impact of innovation on CO2 emissions in South Asian countries. *Bulletin of Business and Economics, 12*(2), 201-211.

Audi, M., & Ali, A. (2017). Environmental degradation, energy consumption, population density and economic development in Lebanon: A time series analysis (1971-2014). *Journal of International Finance and Economics, 17*(1), 7-20.

Audi, M., & Ali, A. (2023). The role of environmental conditions and purchasing power parity in determining quality of life among big Asian cities. *International Journal of Energy Economics and Policy, 13*(3), 292-305.

Audi, M., & Ali, A. (2023). Unveiling the role of business freedom to determine environmental degradation in developing countries. *International Journal of Energy Economics and Policy, 13*(5), 157-164.

Audi, M., Ali, A., & Kassem, M. (2020). Greenhouse gases: A review of losses and benefits. *International Journal of Energy Economics and Policy, 10*(1), 403.

Awan, A., Rahman, S. U., Ali, M., & Zafar, M. (2023). Institutional Performance and Tourism Arrival Nexus in BRICS Countries: Evidence from Nonlinear ARDL Cointegration Approach. *IRASD Journal of Economics*, *5*(1), 127–139.

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.

Chaudhary, S., Nasir, N., Rahman, S, U., & Sheikh, S, M. (2023). Impact of Work Load and Stress in Call Center Employees: Evidence from Call Center Employees. *Pakistan Journal of Humanities and Social Sciences*, 11(1), 160-171

Dawood, M., Rahman, S, U., Majeed, Umair., & Idrees, S. (2023). Contribution the Effect of Corporate Governance on firm Performance in Pakistan. *Review of Education, Administration & Law*, 6(1), 51-65.

Fatima, K., Jamshed, S, Tariq, M. I., & Rahman, S. U. (2023). An Empirical Examination on What Huge Information Investigation Means for China SME Execution: Drope Item and Interaction Development Matter?. *Pakistan Journal of Humanities and Social Sciences*, *11*(2), 792–801

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

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 Women's Ability to Become 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.

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.

Majid, S., Rasool, A., Rasool, A., & Zafar, A. (2023). Social exclusion of transgender (hijra): a case study in Lahore (Pakistan). *Pakistan journal of humanities and social sciences*, *11*(2), 814-824.

Majid, S., Rasool, A., Shahzad, H. R. M., Shakir, N., & Rasool, A (2022). Association Of Smoking With Osteoporosis. *International Journal of Business & Finance Implications* 3(1) 22-29.

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 Review for the Future Growth 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

Rasool, A., Majid, S., Rasool, A., & Mehmood, N. (2022). A Man with no fear “Necrophilia"" I did like you to give my love to my family and friends." Ted Bundy “A Qualitative Analysis”. *Superior Law Review* 2(1) 16-29.

Rasool, A., Parveen, S., Majid, S., & Rasool, A (2022). Analyzing the Critical Role of Bullying and Anger on Emotional Regulation between Stage Actors. *International Journal of Research in Economic & Commerce* 3(1) 37-47.

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 English Language Learning in Online Classes at Tertiary Level. *Journal of Social Sciences Review*, 3(2), 232- 247

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.

Waqar, A., Javed, Z., & Rasool, A. (2023). Brand Consciousness, Social Comparison and Materialism amongst Teenagers. *Pakistan Journal of Humanities and Social Sciences*, *11*(2), 1079-1087.

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 CO_2 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.