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Abstract

The main purpose of the study is to examine and build existing theoretical and empirical literature on green finance (GF), renewable energy (RE) and economic complexity index (ECI) as an integral determinants of sustainable development in ASEAN countries for the period spanning from 1990 to 2022. Firstly, it draws the overview of the said issue. Second, it identifies and discuss the literature based on the theoretical and empirical insights from the existing literature. Third, this paper proposes dynamic dimensions for further research. This study also looks at how green finance, economic complexity index and renewable energy have affected sustainable development. This research aims to look into the relationship between these factors and provide actionable insights to foster sustainable development. This paper contributes to the area of green finance and economic complexity index and sustainable development by critically analyzing and synthesizing existing theory and research.

Keywords: Green Finance, Renewable Energy, Economic complexity index, ASEAN Countries

1. Introduction

The concept of sustainable development was initially introduced in the study titled “Our Common Future” in 1987. This report highlighted the significance of fulfilling the requirements of the present generation without compromising the capability of future generations to meet their own needs (Parveen et al., 2024; Amin et al., 2024; Sadia Bint Raza et al., 2024).

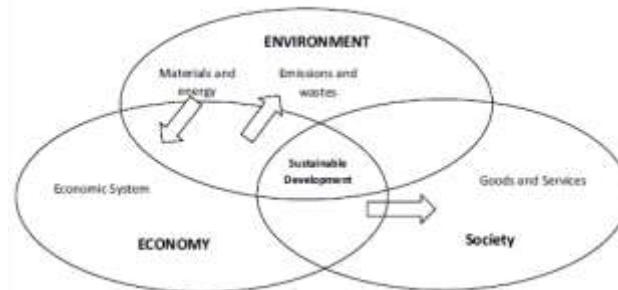


Figure 1: A Model of Sustainable Development

Achieving the Sustainable Development is a challenging task worldwide. Economic and environmental sustainability are major tasks for nations due to the high rate of emissions. The nexus between environmental preservation and economic progress has become imperative focus (Huang et al., 2024; Rabbia Syed, Sehrish Arshad, 2024). Global industrialization and extreme dependence on nonrenewable energy sources have headed to an increase in solid waste and climate change, which need strategies to execute a circular economy in all sectors to reduce carbon emissions by 45% by 2030, and to achieve carbon neutrality by 2050 (Zubair et al., 2024). Climate change is being faced as a worldwide issue that has effected life of individuals, businesses, industries, and overall environment in various ways (Song et al., 2024; Saeed et al., 2024; Ali & Audi, 2016; Ali et al., 2021; Ali et al., 2022).

Green finance (GF) plays a very central role in the sustainability of an economy by challenging financial resources towards environmental friendly and sustainable project. By integrating Environmental, Social and Governance (ESG) standards into investment decision, GF promotes the allocation of capital to initiatives that contribute to climate change mitigation and other sustainable development goals (Shen et al., 2024; Shahid et al., 2023). As per International Finance Corporation (IFC), Green finance is an investments that provide ecological benefits to achieve a win-win situation between economic expansion and enhancement of environmental quality (J. Saeed et al., 2024). Green finance and environmental degradation play a major role in the capability of developing nations to achieve sustainable development (Irfan et al., 2023; Arshad et al., 2024), GF is a critical component of sustainable development, whose importance is reflected by its inclusion in the “One Planet Summit” held in November 2023 found Network for Greening the Financial System brings together central banks and supervisors, committed to taking due account of the climate risk to global financial stability. On the one hand, GF provide financial support to small and medium-sized enterprises to have easy access to advanced technology, which in turn into improved environmental sustainability. It also bring financial aid to encourage renewable energy and clean technology that have nominal environmental impacts and promote sustainable growth (Tanveer Ahmad Shahid, Amna Shafiq Minhas, 2023). Hence, GF play a key role in mobilizing capital foe climate adaptation. By providing financial mechanism like green bonds, green loans etc. to support development services and infrastructure promote sustainable development (Tanveer Ahmad Shahid, 2023; Nazik Maqsood, 2024; Ali et al., 2021).

Renewable energy refers to safe and clean energy that is obtained from sustainable energy resources. It is an inspiring factor in promoting sustainable growth and environmental sustainability. By harnessing energy sources such as solar, wind, hydro etc. renewable energy helps to reduce carbon emission, mitigate climate change impacts and promote environmental sustainability. It also promotes economic growth and job creation in the green economy sector (Shahid, 2024; Maqsood1 et al., 2023). The 7th goal of the UN emphasizes access to affordable, reliable, sustainable and modern energy for all by 2030.

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To ensure access to energy for all by 2030, we must accelerate electrification, increase investments in renewable energy, improve energy efficiency and develop enabling policies and regulatory frameworks. Most of the developing countries are working to increase the use of RE and improve the efficiency of fossil fuels to ensure access to affordable, reliable and sustainable modern energy for all (Minhas et al., 2024). At the same time replacing traditional energy sources with renewable energy is linked with various challenges, including high cost, availability of advanced technology, technical expertise, and finance constraints (Abro et al., 2024; Ashiq et al., 2023; Audi & Ali, 2017; Audi & Ali, 2023).

The economic complexity index (ECI) measure economic improvement and establish the skills and knowledge required for producing exported commodities (Tabassum et al., 2023; Zahra et al., 2023). The relationship between economic complexity index and sustainable development is closely intertwined. It contributes to development by fostering innovation, enhancing productivity, and job creation. A more complexed economy is well equipped to adapt global changes happening due to technology. It may also lead to increased use of resources, pollution and environmental degradation, if not managed properly. The key to achieve development is to create balance between economic complexity index and environmental stewardship. At the same it is also presumed that environmental deterioration will diminish as the ECI of the host economy improves. Due to the improvement in ECI more people are engaged in research and development, their skills expand and new green technologies and eco-friendly production are introduced (Li et al., 2022; Javaid et al., 2023; Shahzadi et al., 2023). To balance the adverse effects of high ECI on the environment caused by economic activities, countries are focusing to make best use of their economic complexity index level, which is supported by technological advancement (Dawood et al., 2023; Audi & Ali, 2023; Audi et al., 2020).

This study aims to explore the nexus between GFN, renewable energy, economic complexity index and sustainable development in the ASEAN (Association of Southeast Asian Nations) countries because this region is environmentally highly vulnerable due to its economic dependence on traditional energy sources. ASEAN is a trade block of 10 fast growing member states: Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam. Gross domestic product of all ASEAN states amounted to approximately 3.63 trillion U.S. dollars. Even Covid-19 brings a temporary halt to economic expansion of the region. This region has importance for various reasons like encompassing growth, social, environmental and geopolitical dimensions. Sustainable development of this region ensures conservation of natural resources, mitigation of environmental degradation and tackle rapid climate change. According to World Economics this region accounted for 7.2% of global GDP in 2023, and 8.8% of global GDP growth in the past 10 years (2013-2023). This region is also committed to increase to role of renewable energy to fulfill energy demands of present and future. Huge opportunities for renewable energy sector are available in ASEAN and all member states welcomed overseas expertise and investment to meet these challenges. Green financing in this regard is being promoted like Indonesian Government has shown its commitment through passing into law with the plan to move the capital from Jakarta to a new, green city in East Kalimantan to be called Nusantara (www.gunungcapital.com/insights/indonesias-new-capital-to-spur-demand-for-more-sustainable-building-materials-and-infrastructure).

The study will try to explore the literature to identify the nature of relationship among these indicators. Through this exploration, the paper aims to contribute to the formulation of informed policies and strategies that balance economic objectives with environmental responsibility. The subsequent sections of this paper will contains theoretical and empirical literature review, exploring the role of Green Finance, Renewable Energy, and the role of economic complexity index in shaping sustainable development within ASEAN countries followed by the conclusion and future implications. Achieving the SDGs is a challenging. More specifically, economic and environmental sustainability are major challenges for nations due to the high rate of emissions.

2. Literature Review

The existing theoretical and empirical literature on sustainable development is explored under this section to provide a practical solution to tackle the potential economic challenges faced by sustainable development. The goal of this in-depth examination of the relevant literature is to develop convincing opinions, identify a gap in the current knowledge base and fill it, and make a significant new contribution to the field.

2.1. Theoretical Review

Economic growth of a country has a long history of different school of thoughts. The neoclassical growth theory introduced by Solow and Swan in 1956 identified the importance of three factors capital, labor, and technology. According to this growth theory, among these factors, the influence of technology is more crucial for countries. If a country can adopt policies and tools for advancing technology, it can achieve desired economic growth. Regarding green economic growth, sustainable finance tools like green financing can promote green technological transfer and absorb capital to promote green projects. Therefore, based on the neoclassical growth theory, green finance can address as an essential factor in reaching sustainable economic growth.

2.2. Empirical Review

The studies that have been conducted to investigate the role of green finance in sustainability for a single country, a panel of countries, or cross-regions and have done so by employing different time frames and econometric techniques (Ur Rahman & Bakar, 2019; Chaudhary et al., 2023) used foreign direct investment, domestic credit, and bank credit to the private sector as measures of green finance and measured their impacts on CO₂ emissions, energy use, natural resource depletion, and greenhouse emissions for forty European countries. The study reveals that all measures of green finance help to reduce environmental degradation, except FDI, while FDI appear to harm the environmental measures (Zhao et al., 2023) explored the role of green finance in CO₂ emission for G7 nations and found that green finance promotes a sustainable environmental development and avoid additional environmental degradation. (Ur Rahman & Bakar, 2018; Zulfiqar et al., 2022; Audi et al., 2024) looked at the bond between green finance, green energy, and CO₂ emissions in ASEAN economies using STIRPAT model approach and found that green finance is an effective tool to reduce environmental pollution. (Rahman et al., 2022) studied the impact of green finance on the energy efficiency of Chinese cities and reveal an inhibitory effect of green finance on energy consumption. (A. U. Shahid et al., 2022) empirically analyze annual data from China to test the impact of green finance on sustainable development measured by economic sustainability and carbon neutrality. The empirical outcome suggested that green finance is a key driver of sustainable growth in China (Rahman & Bakar,

2019) investigate how green finance affects the quality of the environment in Brazil, finding there to be a positive effect. (Qureshi et al., 2022) analyzed a sample of 46 countries and detected that green finance substantially decreased CO₂ emissions.

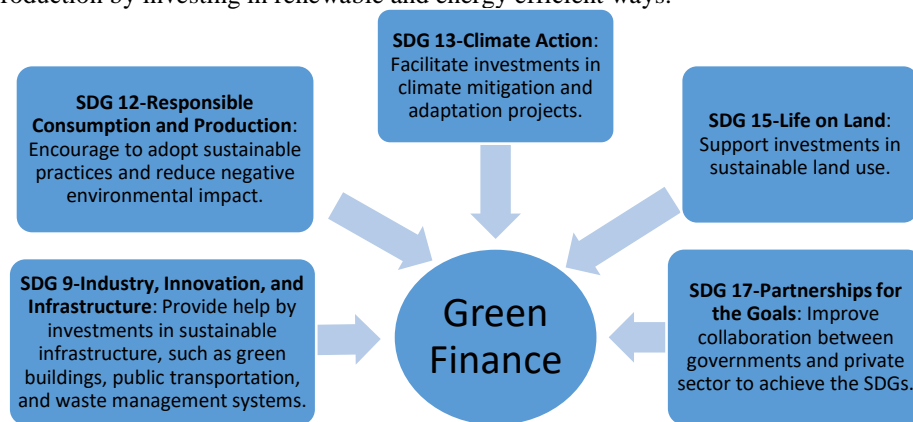
Distinguished studies have been conducted to investigate the crucial role of renewable energy in the attainment of sustainable environment (Awan et al., 2023) used data from 1990 to 2020 from G7 countries and found that renewable energy use and R&D investment adversely affect the sustainable development of the studied fossil energy, renewable energy and GDP for the period 1990–2019 in OECD countries. The results of the study demonstrate that fossil fuel use and GDP hurt carbon emissions, however, the use of renewable energy harms carbon emissions and is associated with sustainable development in OECD countries. (Ullah et al., 2023) found that natural resources contribute to CO₂ emissions, but renewable energy, structural change, green finance, and technology have moderating effects. After the pandemic COVID-19, worldwide economic recession has been experienced. Due to which the prices of natural resources shrink and ultimately reduction in energy demand. This has caused the renewable energy projects to lose the interest of public and private finance participation (Saif Ur Rahman, Salyha Zulfiqar Ali Shah, n.d.) investigated the relationship between investments in renewable energy and green finance in the energy sector development of China on a time series data from 2000 to 2020. The results of the study showed that renewable energy resources and green finance show more erratic pattern in comparison to GDP. (Khawaja Hisham Ul Hassan, 2021) explored the relationship of renewable energy and green finance in promoting tourism and ultimate achieving sustainable development. The findings show that the renewable energy, green finance, and technical innovation are positively impact on tourism industry. Through these tourism activities health costs and carbon emissions decline. Further, the moderate role of renewable energy and green finance highlighted significant rise in the tourism activities. This increase in tourism activities ultimately boost development of the economy. (Bakar, 2019) examine the challenges of incorporating renewable energy into mining operations and its impact on the attainment of Sustainable Development Goals. The results of the study indicate that using renewable energy help in create new jobs, decrease environmental pollution, increase knowledge in the mining area, create a circular economy. All these factors have positive effect on sustainable development indicators. But still lack of information about the positive effects of renewable energy is a challenge for using renewable energy in different fields of a study on the use of renewable and non-renewable energy on sustainable development in South Asia using time series data over the period 1995–2019 and found that renewable and non-renewable energy sources have significant long-term beneficial influence on sustainable development in South Asia.

The economic complexity index (ECI) is new environmental paradigm that measures economic improvement and establishes the skills and knowledge required for producing exported commodities. (Ghazia Khoula, 2022) found that environmental deterioration will diminish as the ECI of the host economy grows. Due to the increase in ECI, more people involve in research and development, their skills increase and new green technologies and eco-friendly production are introduced. ECI also supports the economy in growing with advanced knowledge (Hafiza et al., 2022) conduct a study in 28 countries of OECD and conclude that economic complexity index and renewable energy help these countries in mitigating the environmental degradation problems. (Shahzadi, Ali, et al., 2023) conducted a study on China’s green development efficiency and come to the conclusion that increasing economic complexity index have positive impacts the on role in promoting the green development of China's provinces.

3. Shaping Sustainable Development Goals

3.1. Role of Green Finance

Green finance supports sustainable development by adopting environment friendly techniques and address climate change. It can be in various forms like green bonds, green loans, and investments in renewable energy and energy efficiency projects. It has very significant implication on the SDGs. Green finance can contribute to achieving *Affordable and Clean Energy* (SDG 7), Industry, Innovation, and Infrastructure (SDG 9), Responsible Consumption and Production (SDG 12), Climate Action (SDG 13), Life on Land (SDG 15) and Partnerships for the Goals (SDG 17): it helps in reducing greenhouse gas emissions and stimulate sustainable energy production by investing in renewable and energy efficient ways.

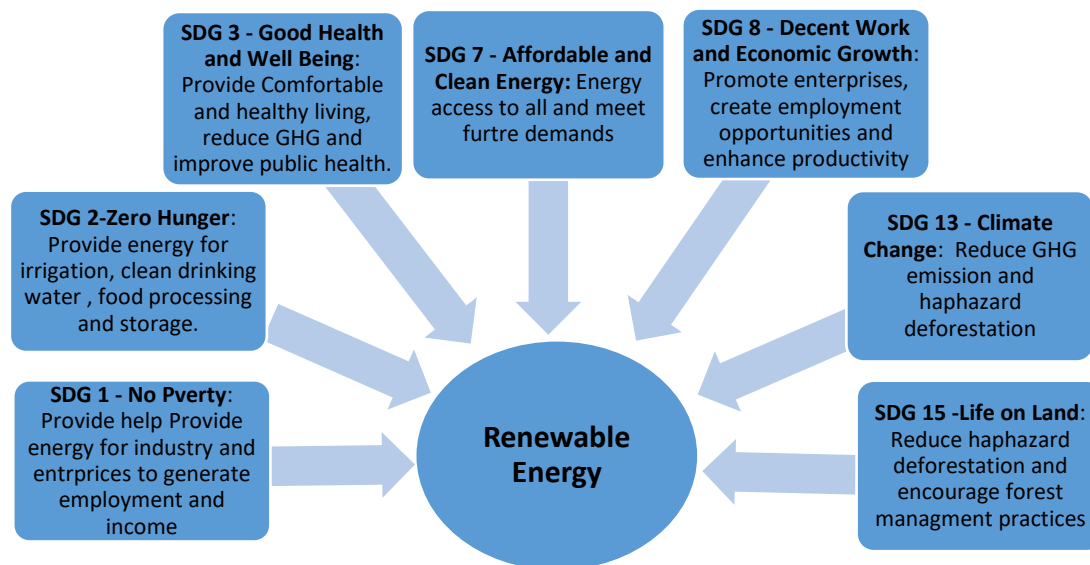


Overall, green finance help in mobilizing resources and promoting sustainable development practices in achieving SDGs.

3.2. Role of Renewable Energy

Since energy affects all part of our life, it is essential to social fairness, economic growth, and environmental conservation—environment, education, health, business, security, food production, and job creation. Best substitute for fossil fuels are renewable resources. But at the same time inefficient use of traditional fuels and ensures the efficient, sufficient, eco-friendly, and sustainable energy supply (Naz et al., 2022). The right combination of renewable energy technologies can provide consistent access to energy. Renewable energy is directly connected with SDG 7, which is “affordable and clean energy.” With the rapid growing population of the world, the demand for energy is increasing day by day. Investing in renewable energy with improving energy productivity and

ensure universal energy access is required for SDG 7. Further SDG 7, the use of renewable energy helps other SDGs directly or indirectly. The contribution of renewable energy to good health and well-being (SDG 3) is undeniable. The links between the benefits from the use of renewable energy technologies and key SDGs are summarized in Figure 10.



3.3. Role of Economic complexity index

Economic complexity index is used to measure of the diversity and complexity of an economy's productive structure. The Economic complexity index Index (ECI) considers the range of goods that an economy exports as well as the expertise needed to generate those goods, is frequently used to measure it. As discussed in the section above that a huge literature suggests that economic complexity index is positively correlated with economic growth and development because more complex economies are better able to adapt to changing economic conditions and to take advantage of new opportunities. They are also more resilient to shocks, such as natural disasters or financial crises.

Economic complexity index is being considered an important factor in achieving the SDGs. The SDGs are a set of 17 ambitious goals that target to end poverty, protect the environment, and ensure that all people have access to basic necessities of life. A more complex economies are better able to create jobs and generate income, which can help to reduce poverty. They are also more likely to invest in research and development, which can lead to new technologies that can help to address environmental challenges.

In can be concluded that implication of economic complexity index on SDGs is significant. More complex economies are better able to achieve the SDGs because they are more resilient, adaptable, and innovative.

4. Methodology

In this study we followed the literature review developed under the principles of systematic literature review (T. A. Shahid, 2024) to put together and critically examine the recent relevant literature. For a comprehensive and acute analysis, a critical review was done to analyze major key points from the previous studies namely focus of the paper, bibliographic details, research philosophy (J. Saeed et al., 2024), key findings, methodology, definition of sustainable development, green finance, renewable energy and economic complexity index in their domains, research context, geographical location of the study, theoretical and practical review, and further conclusion and reported limitations. For purpose, author used the recent relevant literature from 2020-2023. The present study reviewed journal articles published in Scopus-indexed journals up to 2023 for sustainable development, green finance, renewable energy and economic complexity index index. To identify utmost relevant papers, after selection of the papers researcher conducted a comprehensive search by evaluating in the relevant papers downloaded from (1) Economics journals listed in the clarivate analytics (The Master Journal List 2020 and JCR report); (2) Comprehensive databases (Business Source Premier by Ebsco and Scopus). (3) Google Scholar; published in the different journals. For this literature review, author design the literature selection criteria based on following characteristics, for instance, paper omitted that not dealing with green finance and economic complexity index, and also that are not empirical or conceptual such as (book, commentaries, summaries of conference summaries, abstracts and keywords, executive abstracts, editorials, literature reviews and newspaper/magazine articles). To set up each paper's relevance, Author examined its abstract, title, and, methodology where necessary.

5. Conclusion

After the critical review of the literature, it is concluded that green finance and renewable energy appear to be effective approaches for ASEAN economies to achieve sustainable development. The study's findings indicate that green finance contributes positively to sustainable development. The potential reason for this outcome may be that when financial institutions give priority to green concepts while devising and implementing green finance policies, they are able to greatly improve economic performance and environmental quality. This is because green finance increases the productive sector's access to environmentally friendly technologies, which in turn not only increases economic output by optimizing traditional production processes but also reduces the risk of harming the environment. Renewable energy also has long term effect on the development. Economic complexity index, by contrast, is found to have an insignificant effect on sustainable development which can be accredited that these countries require more time to develop the productiveness and knowledge necessary to support sustainable development. The study is in hand

attempted to relate literature insights with contributions that are relevant to the topic. The main purpose to attempt that study is to provide a clear and comprehensive view of past investigated studies on Green finance and economic complexity index. In conclusion, this research endeavors to contribute to the address on sustainable development by shedding light on the asymmetric effects of green finance and Economic complexity index on Green Growth within the dynamic and diverse ASEAN region. The results suggest that guiding the ASEAN nations toward a more sustainable future requires the collaboration of these elements. Since each member state has a different setting and stage of development, the asymmetry in their effects highlights the need for customized strategies. The need for policy frameworks that are flexible and sensitive to the distinctive features of each ASEAN country is highlighted by asymmetric effects.

6. Limitations & Future Recommendations

Future research in this domain could employ advanced econometric techniques, such as dynamic vector error correction models (VECM), to better capture time-series dynamics, endogeneity issues, and potential feedback effects among the studied variables. Additionally, exploring the impact of green finance and economic complexity index on manufacturing growth in ASEAN countries could provide a more comprehensive understanding of their role in sustainable development. Comparative studies across different regions could also contribute to a more nuanced understanding of the asymmetric effects observed.

Despite its contributions, this study has limitations. The focus on ASEAN countries might limit the generalizability of findings to other regions. The reliance on a systematic literature review until 2023 may omit more recent developments in the field. Furthermore, the use of certain econometric models in the reviewed studies might introduce methodological biases. Finally, the study does not explicitly consider potential external factors, such as geopolitical events or global economic shifts, which could influence the relationship between green finance, renewable energy, economic complexity index, and sustainable development. Addressing these limitations could enhance the robustness and applicability of future research in this area.

References

- Abro, A. A., Abubakar, M., Shahid, T. A., & Fatima, U. (2024). Does Volatility Spillover among Sectors Varies from Normal to Turbulent Periods? Evidence from Pakistan Stock Exchange. *Pakistan Journal of Humanities and Social Sciences Volume*, 12(02), 1174–1187.
- 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.
- Amin, N., Rahman, S. U., Khalid, S., & Idress, S. (2024). How Does Tourism, Trade Openness and Green Energy Influence CO2 emissions? Evidence from ASEAN Countries. *Bulletin of Business and Economics*, 13(2), 71–79.
- Arshad, S., Joseph, S., Rahman, S. U., Idress, S., & Shahid, T. A. (2024). Decarbonizing the Future: A Critical Review of Green Energy, Financial Inclusion and Trade Openness on CO2 Emissions. *Bulletin of Business and Economics*, 13(2), 160–163.
- Ashiq, S., Ali, A., & Siddique, H. M. A. (2023). Impact of Innovation on CO2 Emissions in South Asian Countries. *Bulletin of Business and Economics (BBE)*, 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). 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. (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., & Kassem, M. (2020). Greenhouse Gases: A Review of Losses and Benefits. *International Journal of Energy Economics and Policy*, 10(1), 403.
- Audi, M., Poulin, M., & Ali, A. (2024). Environmental impact of business freedom and renewable energy: a global perspective. *International Journal of Energy Economics and Policy*, 14(3), 672-683.
- 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), 784–796.
- Bakar, S. U. R. and N. A. (2019). Fdi and Manufacturing Growth: Bound Test and Ardl Approach. *International Journal of Research in Social ...*, 9(5), 36–61.
- Chaudhary, S., Nasir, N., Ur Rahman, S., & Masood Sheikh, S. (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., Rehman, S. ur, Majeed, U., & Idress, S. (2023). Contribution the Effect of Corporate Governance on Firm Performance in Pakistan. *Review of Education, Administration & Law*, 6(1), 51–62.
- Ghazia Khoula, S. ur R. and S. I. (2022). Does Foreign Direct Investment Promote Economic Growth : Evidence from Pakistan Based ARDL to Cointegration Approach Email : ghazia.khoula@superior.edu.pk. *Journal of Contemporary Macroeconomic Issues*, 3(1), 54–63.
- Hafiza, N. S., Manzoor, M., Fatima, K., & Sheikh, S. M. (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.
- 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*, 31(7), 10579–10593.
- Irfan, A., Azam, A., & Shahid, T. A. (2023). Terrorism and Social Politics : How the Increase of Terrorism Impacts the Socio-Terrorism and Social Politics : How the Increase of Terrorism Impacts the Socio-Political Thoughts of the Pakistani Public. *International Journal of Research in Economics & Commerce*, 4(1), 21–30.
- Javaid, Z., Noor, Q., Iftikhar, H., 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.
- Khawaja Hisham Ul Hassan, S. M. S. and S.-R. (2021). Analyzing the Link between Distributed Leadership and Teachers' Self-Efficacy Beliefs at Secondary School Level. *Annals of Social Sciences and Perspective*, 2(2), 287–298.
- Li, D., Bai, Y., Yu, P., Meo, M. S., Anees, A., & Rahman, S. U. (2022). Does institutional quality matter for environmental sustainability? *Frontiers in Environmental Science*, 10(July), 1–12.
- Maqsood1, N., Shahid2, T. A., Amir3, H., & Kanwal Bilal4. (2023). Symmetric impact of Trade, exchange rate, and inflation rate on Stock Market in Pakistan: New evidence from Macroeconomic variables. *Bulletin of Business and Economics*, 12(3), 903–911.
- Minhas, A. S., Maqsood, N., Shahid, T. A., & Rehman, A. U. (2024). Investment Performance in Green Finance: Assessing the Impact of Environmental Social and Governance Integration. *IRASD Journal of Economics*, 6(1), 27–44.
- Naz, N., Gulab, F., & Aslam, M. (2022). The Socio-Cultural Factors Influence On Women's Ability To Become Social Entrepreneurs. *Competitive Social Sciences Research Journal (CSSRJ)*, 3(2), 42–52.
- Nazik Maqsood, T. A. S. and A. U. R. (2024). The Impact of Dividend and Tax Avoidance on Earning Management of Companies. *Bulletin of Business and Economics*, 13(April), 256–272.
- Parveen, S., Hanif, A., Rahman, D. S. U., & Sheikh, D. S. M. (2024). Examining the Effect of Foreign Direct Investment and Exports on Stock Market Performance: Evidence from India Based Bound Testing to Cointegration ARDL Approach. *Bulletin of Business and Economics*, 12(4), 700–707.
- Qureshi, ghaziaKhoulaQureshi G. K., Zaman, mWaheed M. W. U., Rahman, saifUrRahman S. U., & Shahzadi, hafizaNabilaShahzadi H. N. (2022). Legal Insights of Crypto-currency Market and State of Crypto-currency in Pakistan. *Superior Law Review*, 2(1), 77–104.
- Rabbia Syed, Sehrish Arshad, S. U. R. and S. M. S. (2024). An Overview of Foreign Direct Investment and Green Growth in OIC Countries. *Pakistan Journal of Humanities and Social Sciences*, 2(1), 8826. <https://doi.org/10.52131/pjhss.2024.v12i2.2005>
- Rahman, S. ur, Chaudhry, I. S., Meo, M. S., Sheikh, S. M., & Idrees, S. (2022). Asymmetric effect of FDI and public expenditure on population health: new evidence from Pakistan based on non-linear ARDL. *Environmental Science and Pollution Research*, 29(16), 23871–23886.
- Rahman, S., & Bakar, N. A. (2019). *Long Run Relationship between Domestic Private Investment and Manufacturing Sector of Pakistan : An Application of Bounds Testing Cointegration Saif ur Rahman Nor ' Aznin Abu Bakar Sa ... Long Run Relationship between Domestic Private Investment and Manuf.* 39(August), 739–749.
- Sadia Bint Raza, Sheikh, S. M., & Rahman, S. U. (2024). The Mediating Role of Agency Cost between Corporate Governance and Financial Performance: Evidence from Pakistan Stock Exchange. *IRASD Journal of Economics*, 6(1), 144–163.
- Saeed, J., Maqsood, N., Shahid, T. A., Amir, H., Rehman, A. U., & Kanwal, B. and. (2024). Impacts of Social Capital, Financial Literacy and Financial Inclusion on Economic Growth of a Primary Data Analysis: Evidence from Pakistan Special Focus on Listed Banks. *Bulletin of Business and Economics*, 13(2), 637–646.
- Saeed, R., Rahman, S. U., & Sheikh, S. M. (2024). Green Investment, Energy Consumption and Environmental Pollution Nexus G-7 Countries: A Historical Perceptive. *Pakistan Journal of Humanities and Social Sciences*, 12(1), 127–136.
- Saif Ur Rahman, Salyha Zulfiqar Ali Shah, S. M. B. and F. N. J. (n.d.). Impact of Resource Rents and Institutional Quality on Economic Growth : An Approach of Panel Threshold Analysis. *Competitive Educational Research Journal*, 3(2), 195–208.
- Shahid, A. U., Ghaffar, M., Rahman, S. U., Ali, M., Aslam Baig, M., Idrees, S., & Baig, M. A. (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, T. A. (2024). *Effect of Public Investment on Health Population : A Review of BRICS Countries*. 6(1), 1–9.
- Shahid, T. A., Zafar, M., & Minhas, A. S. (2023). Testing the Economic Theory of Crime in case of Pakistan. *UCP Journal of Business Perspectives*, 1(2), 73–86.
- Shahzadi, H. N., Ali, M., Ghaffoor, 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), 908–916.
- 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.
- Shen, Y., Ur Rahman, S., Hafiza, N. S., Meo, M. S., & Ali, M. S. E. (2024). Does green investment affect environment pollution: Evidence from asymmetric ARDL approach? *PLoS ONE*, 19(4 April), 1–25.
- 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*, 31(6), 8812–8827.
- 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.
- Tanveer Ahmad Shahid, A. U. R. (2023). A Comparative Analysis of Sustainable Growth on Health : Evidence from Asian Countries. *International Journal of Innovative Science and Research Technology*, 8(1), 1183–1188.
- Tanveer Ahmad Shahid, Amna Shafiq Minhas, I. U. R. and A. U. R. (2023). Impact of Human Development Index on Economics Growth: Evidence from Asian Countries. *Article in International Journal of Innovative Science and Research Technology*, 8(2). <https://www.researchgate.net/publication/378481272>
- Ullah, S., Ur Rahman, S., & Rehman, C. A. (2023). Public Investment, Technological Innovations, and Environmental Degradation: Asymmetric ARDL Approach. *Pakistan Journal of Humanities and Social Sciences*, 11(2), 730–741.
- Ur Rahman, S., & 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.
- Ur Rahman, S., & 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.
- 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.
- Zhao, J., Rahman, S. ur, 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*, 30(45), 100845–100860.
- Zubair, S., Rahman, S. U., Sheikh, S. M., & Zafar, M. (2024). A Review of Green Innovation and Environmental Performance in BRICS Nations. *Pakistan Journal of Humanities and Social Sciences*, 12(1), 444–449.
- Zulfiqar, M., Ansar, S., Ali, M., Hassan, K. H. U., & ... (2022). The Role of Social Economic Resources Towards Entrepreneurial Intentions. *PalArch's Journal of ...*, 19(1), 2219–2253.