# Final Year Project Showcase Batch-2021
# For the Year 2025

| Department of Economics & Management Sciences<br>Name of Programme: BS in Economics and Finance | | |
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| 1 | **Project Idea** | **Title:** Environmental Sustainability in Pakistan: The Interplay of Governance, Green Economy, and Environmental Management Systems<br><br>**Project Idea:**<br>This project examines how environmental governance, ISO 14001 Environmental Management Systems (EMS), and green economy indicators influence environmental sustainability in Pakistan. Using empirical analysis from 2000 to 2022, it explores the dynamic relationships between governance quality, green growth variables ($CO_2$ emissions, renewable energy, PM2.5, green technology), and environmental management practices. |
| 2 | **Process** | The project employed a mixed-methods quantitative approach involving time-series econometric techniques. Special emphasis was placed on Grey Relational Analysis (GRA), including variants such as Deng's GRA and Absolute GRA, to determine the closeness of relationships between governance indicators and sustainability metrics. GRA was particularly useful for handling limited data and identifying the most influential governance factors in promoting environmental improvements. Additionally, ARDL was used to identify short-run and long-run dynamics among variables. These methods enabled a comprehensive examination of how ISO 14001 and governance quality affect environmental performance. |
| 3 | **Outcome** | The study identified the positive roles of voice and accountability, as well as government effectiveness, in reducing emissions. It also found that ISO 14001 certification plays a significant role in the diffusion of green technology, though it may sometimes be associated with symbolic compliance rather than substantive action. Based on these findings, the research provided policy recommendations aimed at improving environmental governance and encouraging the adoption of green practices. It also suggested necessary reforms to bridge the gap between environmental regulations and practical sustainability outcomes, ensuring more effective implementation of eco-friendly initiatives. |
| 4 | **Evidence (Theoretical Basis)** | This study is grounded in key theoretical frameworks, including sustainable development theories, the Environmental Kuznets Curve (EKC), institutional economics, and the governance-environment relationship. |

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| | | Grey Relational Analysis (GRA), a multi-factor decision-making method, is used here to quantify the degree of association between governance indicators and environmental sustainability. GRA helps in identifying which indicators—such as regulatory quality or political stability—have the strongest relationships with green growth. This theoretical alignment helps validate the use of ISO 14001 as a strategic policy intervention and highlights the institutional pathways through which environmental performance can be improved. By integrating these perspectives, the research ensures conclusions that are not only statistically significant but also theoretically robust. |
| **5** | **Competitive Advantage or Unique Selling Proposition** (Cost Reduction, Process improvement, Attainment of any SDG (Sustainable Development Goal), increase of market share or capturing new market or having superior performance over a competitor. In summary, any striking aspect of the project that compels the industry to invest in FYP or purchase it. Some detailed description is required in terms of how, why when what. You can select one or more from the following dropdown and delete the rest of them) Please keep relevant options, delete the rest of them, and correct the sequence | |
| **a** | **Cost reduction of the existing Product** | N/A |
| **b** | **Process Improvement which leads to superior product or cost reduction, efficiency improvement of the whole process** (e.g. What is the issue is current process and what improvement you suggests) | Pakistan currently struggles with fragmented environmental policy implementation due to weak coordination between institutions and a lack of accountability. To address this, the study proposes stronger environmental governance processes and an ISO 14001-based EMS framework to improve policy enforcement and industry compliance. Key recommendations include enhancing intergovernmental collaboration, especially after the 18th Amendment, to ensure unified policy execution, systematically integrating ISO 14001 standards into regulatory requirements for continuous environmental improvements. These tools have helped in identifying the most effective governance levers, such as Voice & Accountability and Government Effectiveness. By adopting these innovations, Pakistan can promote greater efficiency, transparency, and data-driven decision-making, ultimately leading to more sustainable environmental outcomes and better resource utilisation. |
| **c** | **Attainment of any SDG** (e.g. How it is achieved and why it is necessary for the region) | Goal 7: Affordable and Clean Energy<br>Goal 8: Decent Work and Economic Growth<br>Goal 9: Industry, Innovation, and Infrastructure<br>Goal 11: Sustainable Cities and Communities<br>Goal 12: Responsible Consumption and Production<br>Goal 13: Climate Action<br>The project addresses these SDGs by focusing on critical gaps in Pakistan's current governance and environmental frameworks. The region suffers from weak policy |

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| | | enforcement, fragmented governance after the 18th Amendment, and high vulnerability to environmental disasters. This study supports these goals by recommending collaborative governance models, promoting clean energy through renewable energy adoption, and improving air quality via reductions in PM2.5. By aligning national efforts with international environmental standards like ISO 14001, the study enables institutional reforms necessary for sustainable growth and resilience to climate risks. |
| **f** | **Any Environmental Aspect** (e.g. carbon reduction, energy-efficient, etc.) | Yes, the project places a strong emphasis on environmental sustainability through several key areas. First, it examines how effective governance can help reduce $CO_2$ emissions, particularly by promoting ISO 14001 certifications that encourage cleaner industrial practices. Additionally, it focuses on improving urban air quality by targeting reductions in harmful PM2.5 emissions. The research also explores energy sustainability, analysing trends in renewable energy production while identifying institutional barriers that may hinder progress. Another critical aspect is the distinction between symbolic and substantive compliance, uncovering how some companies adopt ISO 14001 more for reputation than genuine emissions cuts, which can inform more accountable environmental policies. Together, these efforts strengthen the argument for broader green technology adoption and sustainability reforms, especially in high-emission industries. |
| **6** | **Target Market** (Industries, Groups, Individuals, Families, Students, etc) Please provide some detail about the end-user of the product, process, or service | This Study can help a wide range of stakeholders that includes industries such as manufacturing, energy, and environmental services, particularly those pursuing ISO 14001 certification or striving to meet green compliance standards. It also serves policymakers, such as ministries of climate change, environmental protection agencies, and planning commissions, helping them align regulations with sustainable practices. Academics and researchers working on sustainability, governance, and development economics will find it valuable, as will NGOs focused on climate action and civic environmental awareness. While students and educators can use it as a key reference for studies on environmental policy and green growth. |
| **7** | **Team Members (Names & Roll No.)** | 1. Insharah Qaiser – EC-21041<br>2. Mushfa Saira – EC-21049<br>3. Savia Shakeel – EC-21080 |
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