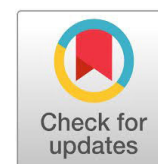
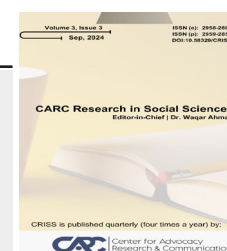




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# The Effects of Green Practices on Economic Growth in Pakistan

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## ABSTRACT

Green practices play a key role in boosting the economic growth of a country. With the growing awareness and concern about environmental sustainability, the need of shifting towards a low-carbon economy and adoption of green practices has gained significant attention. The aim of this study is to analyze the effect of various green practices on economic growth in Pakistan. For this purpose, green banking, renewable energy, and foreign direct investment have been taken as the independent variables while economic growth has been taken as the dependent variable in this study. A mixed yet predominantly positive relationship between the variables was revealed by a comprehensive review of existing literature. This study is based on a quantitative research method along with a deductive approach that is supported by hypotheses that are tested with the help of the data gathered. Forty- two listed commercial banks in Pakistan that are subject to State Bank of Pakistan regulation make up the population. It also includes five percent of the energy mix which is consumed within Pakistan and is considered renewable energy and the data was gathered from the official website of NEPRA. The sampling data for foreign direct investment is gathered from the official site of the World Bank from the year 1999 to 2022. The sampling technique that is used in this study to collect data is convenience sampling. The number of samples taken for each variable was twenty-three and the software used to analyze data was Statistical Package for the Social Sciences (SPSS). The green banking has a strong positive effect on economic growth meanwhile; the renewable energy and foreign direct investment both have a direct but an insignificant effect on economic growth in Pakistan. Finally, this study could be beneficial for future researchers in the aspect to focusing on green practices and their implementation.

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## INTRODUCTION

Various sectors within an economy such as manufacturing, agriculture, tourism, and trading, etc are influenced by any action which causes environmental discomfiture that would not only have a significant effect on current but also our future generations. Nowadays, people have to face more environmental problems than in the past because of the business or industrial activities that are being carried out around them. Initiatives are

being taken globally to promote eco-friendly activities such as the United Nations environment programs finance initiative (UNEPFI) and equator principles (EP) which are the two primary projects. All the activities which have a direct or indirect impact on our environment influence our economic growth. Consequently, most of the economies are focusing on how the environment can be linked to financial agreements and policies for preferable economic conditions (Zhang et al., 2012). The financial sector of developed countries has transformed their outdated financial planning and strategies into new and innovative green economic and financial development efforts. The new businesses are adopting green economy-related activities which promote reduce, recycle, and reuse (3R) approach. Eco-friendly, easy to use and adapt is the new approach of green economy (Jahid et al., 2020). Energy resources are an essential part of any business because they are used in every sector of the industry, whether it is transport, mining, manufacturing or tourism industry. Energy resources can either be renewable

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or nonrenewable (Zeidan, 2020).

This research has been carried out to examine the contribution of green practices on Pakistan's economy. The economic growth is measured by the annual GDP growth rate. Pakistan is a developing economy with its GDP gradually declining in recent years because of economic, political and environmental issues. The current GDP growth rate of Pakistan is 6% in the year 2022 and has dropped as compared to the growth rate in 2021, which was 6.5%. Raising awareness of the environment among sector can be the solution to many problems (Hassan et al., 2019). The primary economic sector is represented by the service and the energy sector which directly affects the GDP of the country.

Presently, we are facing many environment-related issues, but green banking contributes in avoiding these issues to an extent. No economy can survive without its financial institutions and banks play an essential role in nation's developing economy. In regards to sustainable development, banks are now showing their inclination towards providing funds for green projects. The State Bank of Pakistan has traditional procedures for promoting sustainable banking system to make up for energy shortage and climate change. The measurement for green banking is the value of the transactions that took place through internet banking divided by the total value of transactions through E- Banking. Moreover, the use of internet banking is increasing day by day as the people consider it more convenient and this is the main reason why the volume of transactions through internet banking increased by PKR 10,250 billion in year 2022.

The comparable characteristics of a better society include use of waste minimization techniques, employees' health and safety, energy efficiency and the usage of renewable energy resources (GOPIS, 2016). The core of taking banking investments towards environmentally friendly operations and enhancing Pakistan's economic growth is green banking. Sectors like production, service, and businesses are affected by the unique economic system held by the bank through its financing activities. Banks should implement green banking and consider it as a part of their lending and investment system. They should use appropriate technology and organization system for this purpose (Akhtar et al., 2013). Non-renewable energy resources may be cheap but these affect the health of the people and harm the environment. In other words, it adds up to the total cost and adversely affects the economic growth. Whereas, renewable energy resources need financing but these do not harm the environment or people's health. The energy sector can be considered as the backbone of economy for any country (Chien et al., 2021).

The key energy resource for Pakistan's electricity generation includes natural gas, hydro power, coal and nuclear energy. The renewable energy consumption within Pakistan is only 5% and the installed capacity of renewable in 2022 was 2837 MW according to NEPRA thus, this is a matter of concern for Pakistan when it comes to attaining sustainable development and boosting economic growth. However, green financing can make it possible to carry out renewable energy programs for the betterment of our

economy. It has now become important for Pakistan to use renewable energy resources for power generation as it has been left with limited non-renewable resources to produce electricity. Moreover, in 2021, the CO<sub>2</sub> emissions for Pakistan was 219.8 million tones and has been increasing gradually ever since. Using resources which are environmental friendly to fulfill our energy requirement has now become a necessity.

The foreign direct investments are a major of green financing which can lead Pakistan towards sustainable development. From 1997 to 2022, the foreign direct investment in Pakistan averaged 156.36 USD million with a net inflow of 0.5% of GDP FY2022. The government encourages foreign direct investments in order to encourage environmental innovation in the country (He et al., 2019). These investments are the major source of funding in green projects and contribute to the economic growth by providing funds to implement green practices within the country.

### Statement of Research Problem

Adopting and implementing green practices in order to boost economic growth in Pakistan is a major challenge because of the political instability, recession and limited resources in the country. Green practices like green banking and using renewable resources for power generation can only be made possible if there is enough finance to carry out the green development programs. The foreign direct investments are major sources of financing green projects and have a direct impact on our economic growth. However, despite of having foreign investments, Pakistan is unable to implement green practices because of its current economic situation.

The aim of this study is to examine green practices that promote economic development that is environmentally benign for both current and future generations. Moreover, it is significant to consider different green practices and their impacts on the economy and its progression. This study supports introducing environmental considerations into business practices and banking activities to facilitate the development of renewable energy businesses in the economy.

### Research Questions

- What influence does green banking have on the economic growth of Pakistan?
- How does renewable energy help in boosting the economic growth?
- How does the foreign direct investment contribute to Pakistan's economic growth?

### Aims & Objectives

The main aim of this research is to analyze the impact of green practices on the economic growth of Pakistan and their importance in terms of green development. The study also aims to:

- Determine the effect of green banks on the economic growth in Pakistan.
- Analyze the effect of using renewable energy on the growth of Pakistani economy.

- Find out the contribution of foreign direct investment in boosting the economic growth in Pakistan.

### Significance of Study

This study emphasizes on establishing a relationship between green practices and economic growth of Pakistan. The study supports participation in and the promotion of green practices by future Pakistani banks and commercial entities to maximize profit and minimize the activities that harm the environment. It is intended to show banks the advantages of green banking by using internet banking to reduce paper wastage and making its operations eco-friendly. Rising energy prices and consumption are two of the main goals of green banking initiatives. Additionally, the government and investors are calling for transparency of the companies' environmental achievements and ambitions (IDRBT, 2013). Nevertheless, this study also focuses on the significance of utilizing renewable energy resources and using foreign investments to finance green projects and work towards green development. This paper helps and benefits future researchers in the aspect to focusing on green practices and their implementation.

The research is conducted to help the banks and corporations develop strategies regarding how they should promote green practices and play an omission role. To academicians, the study can be utilized as a foundation for further research in the field. Last but not least, researchers can use it to involve in further studies relate to the field.

### Scope of the Study

This thesis offers new evidence on how adopting green practices influence the economic growth in Pakistan. Previous research on this topic has been limited due to lack of data availability. Unlike previous research, our analysis is rather based on a comprehensive list of green practices including green banking and renewable energy resources. In addition, the secondary data for measurement of the variables has been collected from authentic sites like World Bank Database, NEPRA and State Bank of Pakistan database from year 1999 to year 2022. Although, these measures are based on publicly available information but they have not previously been available to researchers in an accessible format. The main focus of this study is to find out how green practices are benefiting Pakistan's economy and how the foreign direct investments are contributing to sustainable development in Pakistan.

## LITERATURE REVIEW

Green practices play a significant role in the stimulating economic activities which eventually lead to the economic growth in Pakistan. Although this topic has a prominent position in literature, but it still needs an intricate study. The literary article of (Tan et al., 2014) shows that environmental innovation can be attained through the tentative bonding of the environmental features to the government and banking institution financial policy which can possibly help in maintaining stability economic activities as well as ascertain a healthy and active work force that leads to economic growth. Furthermore, green practices like green banking, using renewable energy resources and foreign direct investments from foreign investors would provide safe working environment along with a strong active

force which is considered as a crucial factor that positively influences the economic growth.

### Green Banking

In Pakistan, although green banking is a relatively new concept, but it makes a significant contribution to our economic growth by playing a major in overcoming the environmental and economic challenges. The basic objective of green banking is to avoid giving and wasting the primary concern of the environmental society. Therefore, it is practiced to ensure that banks use the available scarce resources responsibly with minimal wastage. Green banking reduces paper wastage, helps banks to attain cost and time efficiency to the greatest extent (Saha, 2013). While the concept of green banking is common in other developed countries, Pakistan is still making progress in promoting it. The State Bank of Pakistan took several initiatives to promote green banking including introduction to electronic banking, providing incentives to the banks that offer green financing and by establishing rules and regulations to ensure that the banks are maintaining the environmental and social risk management standards. As discovered by the study of (Deepti and Narang, 2015) a subtle way to benefit the environment through banking is by adopting green banking. Global warming and environmental management are the world's most substantial challenges that are a threat to the natural resources. Consequently, donating to green economy to promote sustainability has become the main concern of every individual and financial institution. The study analyzed the aim to respect and understand bank's role in the modern economic growth by encouraging green banking. In this study, the researchers used the secondary data gathered from the bank's website. Moreover, in this era of modern technology, banks are trying to go beyond the concept of paperless banking to the use of solar energy sources for ATM's and many more. The conclusion of this study was that banks in India have taken green initiatives principally.

Green banking has a positive impact on the economic growth in Pakistan as revealed by the study of (Memon et al., 2021). The study found that green banking has a statistically notable positive effect on the gross domestic product (GDP) based on the data collected from year 2007 to 2018. Nevertheless, another study by (Akbar et al., 2020) revealed the positive influence of green banking on the performance of banking sector in Pakistan. The study showed that banks that offer green financing facilities have a higher return on assets (ROA) and return on equity (ROE) as compared to the banks that do not offer these facilities.

The concept of green banking is based on the theory of sustainable development, which highlights the significance of balancing economic growth with environmental protection and social development. The theory identifies that without protecting the environment and ensuring social equity, the economic growth cannot be sustained. For this reason, green banking encourages sustainable development by motivating banks to finance environmentally friendly projects and promoting behavior that is environmentally responsible among the businesses and individuals. Furthermore, the Stakeholder's theory also supports green banking and emphasizes on the importance of keeping in view of all the interests of stakeholders such

as customers, environment and communities in addition to the shareholders. Therefore, green banking plays a vital role in promoting social and environmental responsibilities among the banks and the stakeholders which eventually leads to sustainable development.

Another recent study by Asif et al., (2022) determined the effect of green banking in regards to green financing on the economic growth in Pakistan. The study revealed that green financing has a notable positive influence on the economic growth as it can lead to reduction in carbon emissions, which is essential for sustainable economic development. Several studies have shown that green banking promotes sustainable development and helps to eliminate environmental and economic risks. Green banking in Pakistan is positively correlated to its economic growth as it increases the annual GDP by encouraging sustainable development and overcoming the environmental and social challenges that have a huge overall impact on its economic development.

### Renewable Energy

Pakistan can be considered as one of the developing countries in South Asia that is facing a critical challenge of environmental degradation and energy insecurity. Due to the inadequate energy infrastructure, inefficiencies and increasing dependence on expensive fossil fuels, the country is facing an energy crisis and is struggling to meet the growing demand from domestic and industrial consumers. However, during the past few years, the government of Pakistan has started to prioritize the use of renewable energy resources to meet the energy needs and promote economic growth. The economy of a country is directly and indirectly supported by its investors. Furthermore, better investments plans and options eventually lead to a sustainable economy. The economies with financial stability are the ones with clear strategies for implementation. The whole world's economies have been destroyed by global warming, green house effects, ozone depletion, and pandemic and over population (Anagnostopoulos et al., 2020; Li, Chien, Hsu, et al., 2021). Nowadays, all business firms and factories are investing their finances to develop strategies that can help solve the problem of environmental crisis. Governments all over the world have established laws to support green economic development. Therefore, it is obvious that using renewable energy has a positive yet a direct impact on the economic growth and can boost economic activities.

Renewable energy plays a significant role in sustainable economic growth. Eighteen emerging economies in the world developed a bi-directional causation between renewable energy consumption and economic growth. It is very clear that the investment in renewable energy resources is eco-friendly as well as economically feasible (Han, 2020; Nawaz et al., 2021; Hussain, et al., 2021). Furthermore, the Covid-19 pandemic caused complexities in all situations. Just like other sectors of the economy, the financial sectors also played a major role in developing strategies to overcome the economic crisis. The strategies included using green financing to reduce environmental pollution by promoting renewable energy consumption during Covid-19 (Verma et al., 2021). Hence, investing in renewable energy resources helps in the wellbeing of the environment by handling the circumstances during the

pandemic (Hager & Hamagami, 2020; Nawaz et al., 2021; Seshadri, et al., 2021).

It is certain that renewable energy and economic growth in Pakistan has huge renewable energy potential, specifically in wind, solar, biomass and hydro. Nevertheless, the energy consumption of renewable energy resources within the country is less than 5% of the total energy mix. Recently, Pakistan's government has implemented several policies and incentives hence, taking the initiative to promote renewable energy investment and deployment. It is shown by the studies that renewable energy has the ability to stimulate economic growth, reduce greenhouse gas emission and improve energy security. It can stimulate economic growth by creating employment opportunities, reducing energy cost and encouraging innovation and technological development. A study by Farooq et al., (2018) revealed that renewable energy can create new job opportunities in the energy sector by reducing the country's dependence on expensive imported fossil fuels. Also, using renewable energy resources can result in reduction in energy cost for household and businesses as well as promote economic growth by increasing disposable income and reducing production cost.

The role of the renewable energy in the economic growth can be supported by the technological change theory which argues that the deployment of renewable energy technologies can lead to innovation and technological change which further add ups in the productivity and economic growth. The creation of new markets and industries can result from developing new renewable energy technologies which will eventually lead to job creation and increased economic activity. Moreover, a study by Jawaid et al., (2018) shows that the installment of renewable energy technologies within Pakistan has the capacity to stimulate innovation and technology development that results in increased competitiveness and economic growth.

### Foreign Direct Investment

According to the study of Moran (2012), the stimulation of foreign direct investment that leads to green financial development has a significant impact on the economic growth rate. Foreign direct investment is a significant source of capital for economic development of Pakistan. The country has been attracting foreign direct investment since the early 1999's as a result of the policies implemented by government of Pakistan. The policies include privatization, deregulation and tax incentives. Nonetheless, the influence of foreign direct investment on the economic growth of Pakistan is debatable.

Several studies have looked into the relationship between foreign direct investment and economic growth. A study by Bajwa et al., (2016) shows that the foreign direct investment has a positive impact on the economic growth of Pakistan. The findings of this study conclude that foreign direct investment along domestic investment and exports contributes significantly to the growth of the economy. The host country's organization are provided with an incentive to boost innovation with technological improvements which can possibly lead to increase in employment opportunities by the external funding in form of foreign direct investments. The impact of foreign direct investment on employment can be determined by the study of Ahmad

et al., (2018) that reveals a positive influence of foreign direct investment on employment in long run.

Sustainable environmental innovations can be promoted with the help of financial objectives along with the environmental consciousness. The pioneering environmentally conscious technological up gradation in business entities within the host country are promoted by environmentally friendly foreign direct investments. The depletion of industrial pollutants which lead to health issues and a high mortality rate can be resulted from such environmental consciousness (Alfaro et al., 2010). The innovative techniques and technological advancements ultimately result in improved production, operations and marketing in the host economic institutions which eventually increase the country's gross domestic product (GDP).

Hassan and Qayyum (2017) identified the positive impact of foreign direct investment of trade within Pakistan. The foreign direct investments lead to an increase in exports of a country and mitigate the risk of trade deficit by creating a positive balance of trade. The market access theory suggests that foreign direct investment boosts the trade and economic growth by providing access of foreign markets to the host country. The theory states that the goods and services produced by the host country can be

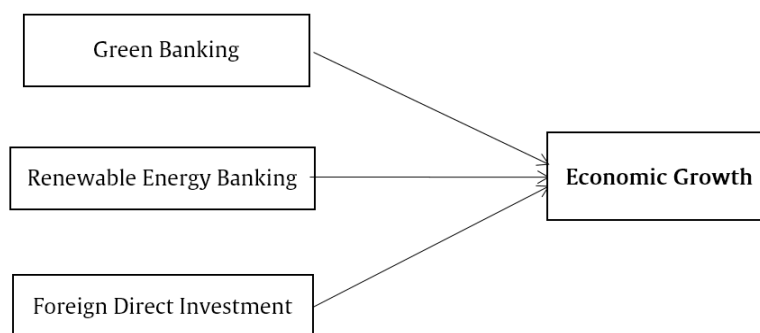
exported by the foreign firms using their global networks and distribution channels. This will eventually lead to increase in exports and in turn enhance the economic growth.

In order to stimulate green innovations along with the high profit earnings so that environmental concerns like toxic gases, dangerous chemicals and additional industrial waste products can be prevented; foreign direct investment can be used as it is a significant part of the financial policies designed by the economic regulators (Shahbaz et al., 2015). Similarly, the appropriate utilization of foreign direct investment to fund programs that create environmental awareness among general public as well as the personnel of business organizations does not only help in expanding production but also the market at a global level which leads to increase in economic growth of the host country.

### Hypothesis

- H1: Green banking has a significant effect on the economic growth in Pakistan
- H2: The renewable energy consumption has a significant effect on the economic growth in Pakistan
- H3: The foreign direct investment has a significant effect on the economic growth in Pakistan

### Conceptual Framework



### Dependent variable

- Economic growth

### Independent variable

- Green Banking
- Renewable Energy
- Foreign direct investment

The independent variables in the framework which are green banking, renewable energy and foreign direct investment will have direct effect on the dependent variable which is the economic growth of Pakistan. Green banking helps in achievement of sustainable or eco-investing for economic growth. The eco-conscious investors consider environment and social benefits rather than financial returns on their investments. Renewable energy sectors are often associated with socially responsible investment (SRI), which solely focuses on investments that benefit the environment and promote green outcomes that directly impact economic growth development and sustainability. Renewable energy is crucial for economic development and productivity improvement. Foreign direct investments boost

economic growth by creating employment opportunities and transfer skills, technological advancements. Economic growth and foreign direct investment are positively interdependent variables.

### Research Gap

In spite of the rising interest in green practices within Pakistan, there is still a lack of empirical research on the relationship between green practices and economic growth. The majority of the research and literature now available focus on the environmental advantages of green practices such as improved air and water quality, resource conservation and decrease in carbon emission. Whereas only a few studies have studies show the effect of green practices on economic growth in Pakistan. A study of Nawaz et al., (2021) shows the effect of green financial development on the economic growth in Pakistan which includes determinants like green credit, green investments, green securities and foreign direct investments have a direct impact on the economic growth. However, the impact of technological advancements in regards of banking has not been explored thoroughly. Also, other studies have not shown any significant correlation between renewable

energy and economic growth in Pakistan. Nevertheless, this research paper emphasizes on the effect of green practices like green banking, use of renewable energy and foreign direct investments on the economic growth of Pakistan. It focuses on the influence technological innovation foreign direct investment and use of renewable energy on the gross domestic product (GDP) of Pakistan which leads to the economic development. Additionally, the future research must focus on specific green practices like waste management and sustainable agriculture to identify which practices have the greatest effect on the economy.

## MATERIAL & METHODS

### Research design

This study is based on a quantitative research method along with a deductive approach that is supported by hypotheses that are tested with the help of the data gathered. Moreover, it allows for accurate predictions and can help

### Measurement of Variables

Table 1

Variables with Measurement

No	Variables	Measurement	Sources
1.	Economic growth	GDP (annual%)	World Bank Database
2.	Green Banking	Value of transactions through Internet Banking / Total value of transactions through E-Banking	State Bank of Pakistan Database
3.	Renewable Energy	Electricity generated from renewables / Total electricity generated	National Electric Power Regulatory Authority (NEPRA)
4.	Foreign Direct Investment	Net inflows (% of GDP)	World Bank Database

### Data Collection

The research is based upon secondary data from commercial bank's financial performance that has been extracted from their financial reports, net inflows of foreign direct investment as the percentage of GDP and percentage of electricity generated by renewable annually and the annual percentage of GDP of Pakistan. The coverage period is from 1999 to 2022. The data in this study has been extracted from World Bank Database, NEPRA and State Bank of Pakistan Database from 1999 to 2022. Therefore, based upon the reviewed literature, the current research has formulated the following estimated equation:

$$EG_t = \alpha_0 + \beta_1 GB_t + \beta_2 RE_t + \beta_3 FDI_t + et$$

Where;

EG = Economic Growth

t = Time Period

GB = Green Banking

RE = Renewable Energy

FDI = Foreign Direct Investment

et = Error term

This study analyzes the data through a simple linear regression. Also, Statistical Package for the Social Sciences (SPSS) is the software used for data analysis and interpretation. The economic growth that is taken as a

establish cause-and-effect relationships between variables. In this study, green banking, foreign direct investment and renewable energy are the independent variables and on the other hand, the economic growth is the dependent variable.

### Population and Sampling

The population consists of forty-two listed commercial banks in Pakistan that are regulated by the State Bank of Pakistan. It also includes small part of the total energy mix which is consumed within Pakistan and is considered to renewable energy. The sampling data for foreign direct investment is gathered from the official site of the World Bank from the year 1999 to 2022. The sampling technique that is used in this study to collect data is convenience sampling, which is type of non-probability sampling technique where the sample is chosen on the basis the accessibility and availability of the participants or data sources instead of using random selection process (Babbie, 2017).

dependent variable in this study is measured by the GDP growth (annual %). On the other hand, the green banking that is used as the independent variable is measured by the value of transactions that take place through internet banking divided by total value of transactions through E-Banking. In addition, the renewable energy and foreign direct investment which are also independent variables, are measured by electricity generated by renewable divided by total electricity generated and net inflow percentage of GDP respectively. These independent variables are considered as the determinants of economic growth. The coefficients  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  represents slope of relationship between each individual independent variable and the dependent variable. The  $\alpha_0$  represents intercept of economic growth when all the independent variables are zero. Lastly,  $et$  represents the error term or unexplained variation in economic growth that is not considered for by the independent variables.

## RESULTS & DISCUSSION

The table 4.1 below shows the dependent and independent variables included in the analysis. The economic growth of Pakistan is taken as the dependent variable while the foreign direct investments, renewable energy and green banking are taken as the independent variables. The purpose of this study is to analyze the effect of the independent variables on the economic growth in Pakistan. The extent to which the independent variables will affect the dependent variable mutually will determine the strength of their relationship.

**Table 2**

Variables included in analysis

Independent Variables		
1	GreenBanking	Green Banking
2	RenewableEnergy	Renewable Energy
3	FDI	Foreign Direct Investment
Dependent Variable		
1	EG	Economic Growth

### Descriptive Statistics

Table 4.2 displays the descriptive statistics for the variables such as their mean and standard deviations. The statistics show that economic growth in Pakistan on average

is 5.2422 percent of GDP. Moreover, green banking on average is 24.5821 meanwhile; renewable energy and foreign direct investment on average are 6.8312 and 21.2195 respectively. The number of samples taken for each variable is twenty-three.

**Table 3**

Descriptive Statistics

Variables	Mean	Standard Deviation
EG	5.2422	0.52356
GreenBanking	24.5821	3.48277
RenewableEnergy	6.8312	3.36064
FDI	21.2195	0.74231
N=23		

### Regression Analysis

According to Table 4.3, the beta coefficient of 0.115 indicates a positive relationship between green banking and the economic growth. It shows that for a one-unit increase in predictor variable, the response variable is expected to increase by 0.115 units while holding all other variables constant. Moreover, the level of significance is 0.000 which shows that the relationship between green banking and economic growth is statistically significant therefore, the null hypothesis which assumes that there is no relationship between the variables can be rejected and H1 is accepted. The relationship between renewable energy and economic growth is also positive as the beta coefficient is 0.025 which indicates that for a one-unit increase in predictor variable,

the response variable is expected to increase by 0.025 units while holding all other variables constant. However, the level of significance of 0.162 indicates that there is not enough evidence to accept H2. Hence, H2 is not accepted.

It can be determined from the values in the tables that there is a positive relationship between foreign direct investment and economic growth as the beta coefficient is 0.105 which indicates that for a one-unit increase in predictor variable, the response variable is expected to increase by 0.105 units while holding all other variables constant. Nevertheless, the level of significance of 0.052 indicates that there is not enough evidence to accept H3. Hence, H3 is not accepted.

**Table 4**

Results of Multiple Regression Analysis

Dependent Variable: GDP				
Independent Variables	Coefficient ( $\beta$ )	Std. Error	t	Significance (p)
GreenBanking	.115	.014	7.938	.000
RenewableEnergy	.025	.017	1.455	.162
FDI	.105	.051	2.068	.052
R <sup>2</sup> = .938, (p=.000), N = 23				
**significant if $p \leq 0.01$ (hypothesis accept)				
* significant if $p \leq 0.05$ (hypothesis accept)				
Note: EG (Economic Growth), FDI (Foreign Direct Investment), RenewableEnergy (Renewable Energy Energy), GreenBanking (Green Banking)				

The study findings have revealed that green banking as a green practice has a strong positive influence on the economic growth of Pakistan. These results are in line with the studies of Chen and Zhang (2018) according to which green banking has strong positive effect on the economic growth. This shows that implementing green banking practices have a

positive yet significant impact on our GDP and Pakistan needs to focus more on promoting these practices in order for the betterment of our economy. On the other hand, renewable energy has a positive but insignificant influence on the economic growth of the country. The results can be supported by the past studies of Smith and Johnson (2020) according to

which although the relationship between renewable energy and economic growth is not significant, however, the positive relationship between the variables indicate that adoption and utilization of renewable energy resources can contribute to economic growth to some extent.

Hence, Pakistan needs to invest more in renewable because electricity generated by renewable has an effect on our GDP as it helps to achieve economies of scale by producing electricity in a cost-efficient way. Furthermore, the foreign direct investment also has a positive yet insignificant influence on the economic growth of Pakistan. The study is in line with the past studies of Johnson et al., (2021) which indicate that foreign direct investment has a positive but insignificant influence on the economic growth of the developing country. The reason behind a statistically insignificant relationship could be quality of institutions, technology transfer and human capital. Nevertheless, the positive relationship between the variables indicates perhaps a beneficial effect that these investments can be used in environmental projects leading to increase in GDP and higher economic growth.

## CONCLUSIONS

This study analyzes the influence of green practices like green banking, using renewable energy and foreign direct investments on the economic growth in Pakistan. These green practices contribute directly to the economic growth in various ways like leading to significant cost savings for organizations and households such as using renewable energy resources can reduce energy bills. The shift towards green practices can lead to innovation in various sectors resulting in establishment of new technologies and products. This can also create new business opportunities as well as employment opportunities. Nowadays, all the major economies within the world are focused on promoting and implementing green practices as it has become a global demand. The consumers prefer to buy products that are environmentally friendly and can be recycled to minimize wastage.

The previous research on this topic has been limited due to unavailability of data but this study is based upon comprehensive list of green practices which will help the banks and organizations to develop strategies regarding how green practices should be implemented. Also, the future researchers can use study to further explore about this field. Additionally, the future research must also focus on other green practices like waste management and sustainable energy to investigate which green practices have the greatest impact on the economic growth.

One of the green practices that have significant implications for economic growth especially in the context of current climate crisis is green banking. Gradually, the need for sustainable and environmentally friendly products is increasing hence, green banking can be considered as a unique approach towards economic development. Green banking can create new job opportunities, reduce energy cost and improve the environment to promote economic growth by facilitating financing for sustainable projects. Moreover, promoting ethical and socially responsible practices not only improve the reputation of the banking sector but also build a good image of a country in the international community. According to the study of Gupta and Sahu (2021), green banking can be used to reduce carbon emissions in banking industry. Keeping in view of the advantages and importance

of green banking, the State bank of Pakistan took several initiatives to promote it. The concept of green banking is also supported by the theory of sustainable development and stakeholder's theory.

Additionally, the renewable energy has also become an essential contributor to the economic growth in Pakistan. There has been an increase in demand for energy during a past few years coupled with the need for sustainable practices which has eventually led to the growth of renewable energy sector. By using renewable energy sources like solar, wind and hydro power to generate electricity, cost efficiency can be attained and various opportunities for employment can be created in different sectors such as construction, engineering and manufacturing. Also, the use of renewable energy resources plays a vital role in reducing greenhouse gas emissions Hansen & Shuman, 2020. Although installing renewable energy plants can be expensive but it can benefit Pakistan's economy in long run. Moreover, the use of renewables can help in increasing energy efficiency and improving the competitiveness of businesses. Therefore, generating electricity through renewable energy resources rather than the non-renewable energy resources can be seen as a win-win approach to economic growth as it not only benefits the economy but also the environment. The role of renewable energy in economic growth can be supported by the theory of technological change.

Although the renewable energy consumption is five percent of the total energy mix, the government of Pakistan has taken several initiatives to prioritize the use of renewable energy resources to meet energy needs. The foreign direct investment plays a vital role in promoting the economic growth in Pakistan. These investments can boost the growth of economy by increasing export opportunities, providing access to new skills, technology and knowledge as well as result in green financial development. Foreign direct investment can help in improving infrastructure and increase the access to finance which will in turn lead to improvements in healthcare, education and other social services. Several past researchers such as Borensztein, De Gregorio, & Lee, 2021 discuss how foreign direct investment benefits the host country in terms of creating employment opportunities and promoting technological advancements. Moreover, the market access theory suggests that the foreign direct investments boost the trade and economic growth by giving access of the foreign markets to the host country.

## Limitations and Future Directions

This study consists of some limitations and provides opportunities to future researchers and authors to expand the scope of their study. Green practices play a significant role in improving the economy growth and maintaining economic stability. The study is conducted to analyze the effect of green practices like green banking, foreign direct investments, and renewable energy on the economic growth in Pakistan. Although it already discusses three different green practices along with the economic growth, but there is still a need to explore new and innovative green practices that can help to bring in much needed capital, technology, expertise and create employment opportunities to drive growth in future.

The data for this study is limited due to which some of the variables show insignificant results. Pakistan started focusing on the green practices at the end nineties era because of

which the past data is unavailable. Hence, it is recommended to the future scholars to increase the scale of their study by examining the same variables in different countries and their influence on the economic growth of the respective countries. Additionally, the future researchers must focus on specific green practices like waste management and sustainable agriculture at disaggregated levels of various sectors within the economy. Data should be collected from more organizations within Pakistan to increase the validity and reliability because Pakistan has more fluctuating economic conditions as compared to the other countries.

The current study focuses on the significance of the green practices with regards to the economic growth in Pakistan. Environmental protection and climate change is major concern for the world. Consumers are becoming more interested in banks that are environmentally friendly. Green practices are an emerging concept of environmental development which includes using the natural resources wisely and protecting the environment. Green banking can be seen as an innovation and a new trend as several banks in Pakistan have started working on green practices because going green has many benefits such as reducing operating costs, less paper usage, improving employee morale and attracting and retaining more customers. Banks can strengthen their financial inclusion, increase new financial products which will ultimately affect the economic growth. The study has implications for banks and its regulations that will help in promoting green practices to gain competitive advantage in the banking sector. On the other hand, implementation of renewable energy projects in Pakistan can lead to long-term economic and environmental protection that will help in reducing air pollution and achieving sustainability. Furthermore, Pakistan plans on shifting to 60% renewable energy by 2030 and banning coal imports in order to seek nature-based solution for economic developments. Pakistan has great potential for renewable power generation. According to the World Bank, only 0.071% of the country, solar photovoltaic field can be used to meet current electricity needs of Pakistan. To achieve these important goals for the economic growth, there must be a massive expansion in renewable energy projects. Lastly, more eco-friendly projects should be initiated with the help of foreign direct investment that will assist the business entities in making greater contributions to the nation's economic development by creating more jobs opportunities and improving the overall infrastructure.

### Recommendations For Future Investigation

A study must be conducted to find out the association between different green practices such as waste management, sustainable agriculture and the economic growth of Pakistan. The research should give details on the comparison between the environmental impacts and the economic feasibility of different waste management strategies like composting and land filling in the context of agricultural operations. Also, the study should also focus on how the waste management strategies can be linked with sustainable agricultural practices such as conservation agricultural practices that can have a significant effect on the economic growth in Pakistan.

The future research must be completed to examine the policy frameworks and incentives that encourages the adaptation of agricultural practices and waste management at different levels, from local to global in order to assess their effectiveness and challenges. Moreover, the study can analyze

the latest up gradation in waste-to-resource technologies such as nutrient recovery and biochar production, and evaluate their potential implications in agriculture to reduce greenhouse gas emissions and promote circular economy. Last but not least, the research must also include significant environmental risk management strategies and its applications to ensure that environmental risk is contained to acceptable levels in our economy.

### Conflict of Interests

The authors has declared that no competing interests exist.

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