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Impact of Green Finance on Environmental Protection; Empirical Evidence from Emerging Economies; (BRICS & CIVET)

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ABSTRACT

Green finance is one of the modes of promoting an integrated growth of financial activities and ecological protection. Main objective of the study is to investigate the impact of green finance on environmental protection and reduction of CO2 emission in emerging economies. A balanced data set for the year 2002 to 2022 was collected for 10 emerging economies based on two groups of emerging economies as BRICS (Brazil, Russia, India, China and South Africa) and CIVET (Colombia, Indonesia, Vietnam, Egypt and Turkey). Panel data analysis has been used to ascertain empirical results. The results of the study explain that green finance has significant positive impact on environmental protection in emerging economies. The study found that an increase in green finance is associated with a decrease in carbon emissions, indicating that green finance is an effective tool for reducing carbon emissions and mitigating climate change. Overall, findings of this study suggest that green finance can play an important role in promoting environmental protection in emerging economies. The study also provides valuable insights for investors, highlighting the potential benefits of investing in green projects and companies in emerging economies.

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1. Introduction

Green financing is a relatively new concept that provides a different way to financing for individuals, organizations, and governments willing to support and participate in green or low-carbon activities. Some benefits of green finance include the distribution of funds for environment protection, financing of sustainable trade and investment operations, low-risk financing, and the development of green investment and financing tools. The rising trend in green finance is significant for environmental protection. The emerging economies have serious behavior towards environmental protection because they are trying to make their environment green friendly. The emerging economies have therefore got to know about significance of green finance as a tool for protecting their environment. It can be used as a platform by different stakeholders, which includes private individuals and companies, investing companies, producers, financial lenders and other participants in the society. Green finance can be followed for monetary incentives, which could be a desire to protect an environment. The objective of current study is to determine whether green finance can enhance environmental protection or not. The original purpose of green finance was to use financial instruments to enhance environmental quality. To determine the need for expansion of green finance for achieving its intended goals, more comprehensive and extended research is needed (Zhou et al., 2020).

Various countries have different ideas of green finance, a crucial tool for financing and investing. The integration of green activities like climate change adaptation and mitigation is encouraged financially, according to the European Commission. Also, numerous quantitative analyses of lowering carbon emissions have been conducted. Economic and social development is causing rapid changes in natural systems, particularly due to carbon emissions, which have amplified drastically. The COVID-19 pandemic considerably reduced carbon emissions, although the global CO2 emissions has approached 41.4 billion tons in 2020. Excessive carbon dioxide leads to critical global problems like climate variability, sea level rise, and dramatic regional climate change (Zhang et al., 2022). The pace of economic growth heavily influences the success of green finance efforts in most emerging economies. It is vital to examine how green finance has affected environmental protection using evidence from emerging economies. Due to the alarming consequences that green finance has already been having on environmental protection for a number of years. Pollution and environmental degradation will bring about a serious dilemma for us in the next years if we do not regularly care for the environment. The challenges of climate change, environmental pollution, and economic growth all have effects on the operations of green finance, which in turn aid in addressing these issues and to promote the sustainable growth of the economy and environment (Zhang et al., 2021). We have observed that there were very few studies which look that how different countries are using green finance techniques to protect the environment. This study examines how BRICS and CIVET group of 10 emerging economies approach green finance practices. As emerging economies have different policies than non-emerging economies, this study looks at how they react to green efforts.

1.1 Research Gap

Zhou (2022) has proposed to evaluate the impact of green financing on environmental protection in broader region like in emerging economies. To fill this gap, this study includes multiple regional blocks (BRICS (Brazil, Russia, India, China and South Africa) and CIVET (Colombia, Indonesia, Vietnam, Egypt and Turkey). Different variables related to green finance like energy consumption, environmental protection, urbanization, trade and GDP per capita are included (Zhou et al., 2022).

1.2 Research Objectives

Based on the above research gap, following research objectives are addressed in the present study:

- To investigate main determinants of green finance in emerging economies.
- To examine the effect of green finance on environmental protection in emerging economies.
- To expedite the difference between the effects of green finance on environmental protection in BRICS and CIVET economies.

The above-mentioned objectives are interrelated to each other. Prime objective of the current study is to examine the impact of green finance on environmental protection. As pollution and CO2 emissions has drastic adverse impact on environment, so we have to use green technologies to protect our environment. Climate related financial policies have never been taken into account in an empirical analysis of the variables influencing CO2 emissions. This study aims to uncover evidence about important factors which are affecting environment.

Environmental protection plays significant role to support the overall development of an economy. It is helpful for the prevention of degradation of natural environment which is affected by an increase of population, technology and over consumption. The power to establish and to implement different policies that promote green finance systems belongs to governments in developing countries (Owen et al., 2018). Governments have also played a significant part for the promotion of growth in green finance activities. As environmental considerations are given more weight in finance and economic strategy, the green economy uses more resources and helps ecology and expansion of the environment. Green finance could help for the promotion of economic development and environmental quality. The development of a green financial system would improve technologies in the fields of renewable energy, energy efficiency, and for the protection of environment. Governments in these emerging economies are focusing more on green infrastructure and the green economy to capture positivity of economic expansion.

The urge to reduce the damage caused by the emission of fossil fuel has prompted calls for divesting from fossil fuel operations and changing to initiatives that has low carbon emission and programs that protect the environment sustainably. This choice has effects on the domestic and international levels. Numerous countries, including Japan, Mexico, Canada and the United

Kingdom, have policy declarations at the national level to increase citizens' responsiveness of the risks, related to climate change and adversely affecting fossil fuels on the environment. Internationally, countries have ratified the Paris Agreement, a deal on limiting global warming that is legally valid. Paris Agreement aims to keep global warming to less than 2 or 1.5 degrees Celsius. A decision to reduce emissions of greenhouse gases has also been made by participants of COP, which was also called United Nations Conference of the Parties on Climate Change. There are also some other agreements for reduction of CO2 emission which includes Kyoto protocol, UNFCCC and SDG's goals.

Emissions of greenhouse gases have injurious effect on the environment and the health of the general people in many different ways. They promote climate change and respiratory illnesses brought on by smog and air pollution by retaining heat. Extreme weather, disruptions in the food supply, and a rise in wildfires are additional effects of climate change brought on by greenhouse gases. We must have to adopt various techniques for the reduction of these gases. This can be done by green finance technology innovations and promotion of products that are environment friendly. It is examined that previous studies which relates to green finance and environmental protection has some research gaps so we do further analysis on these issues. Some previous researches related to green finance and environmental protection are also available but they have some research gaps like they have small sample size, different regions like some are for developed economies and some for low green finance supported economies. Our research fulfilled the gap for this as we are focusing on emerging economies where the support of green finance practices is prioritized as they want to protect their environment to get into the way to become developed nation.

The significance of this research is that how green finance has protected the environment in emerging economies. Green finance techniques will be helpful in reducing CO2 emission and pollution which leads towards environmental protection so it has a positive impact on health of the people. These health expenses then be utilized on the development of country. By providing financial incentives for businesses and individuals to adopt environmentally friendly practices, green finance can accelerate the transition towards a low-carbon, sustainable economy. This can help preserve natural resources, reduce pollution, and mitigate the impact of climate change on the environment and human society. Further we analyze the major factors that have been affected more due to pollution from old technologies (Hailiang et al., 2022).

2. Literature review

The protection of environment is essential when it comes to green finance. The connection between green energy and environmental sustainability was thoroughly studied. Wang et al. (2021) produced one of the contributions in this area by offering a variety of green energy options for long-term growth. When coming up with a range of green energy alternatives, the authors took into account the green energy impact ratio, sustainability ratio, and usage of green energy. Various definitions of "green finance" have been proposed in the past. Lindenberg (2014) has defined green finance as it refers to the financing of both public and private green investments. Similarly, Ozili (2021a) has defined "green finance" as the financing of projects that promote environmental

sustainability while generating revenue. Wang and Zhi (2016) define "green finance" as financing that promotes both economic development and environmental protection. Green finance refers to any financial investments made in projects that reduce harm to the environment and climate as well as those made in goods and services that improve the environment.

The development of green finance has taken into consideration by both the creation of a green economy and environmental protection. Despite the literature's focus on sustainable behaviors and green economy, there is still much to learn about different regional circumstances. Boosting of a countries green finance can favorably impact the performance while also benefiting environmental protection. Additionally, according to Chen and Ma (2021), green finance significantly reduces environmental misuse and improve the performance of environment. The researcher draws attention to a connection between green finance and environmental sustainability. The greatest contribution to ensuring environmental sustainability, nevertheless, comes from green finance.

Dogan and Seeker's (2016) study, analysed data from 23 nations with the highest renewable energy usage, discovered that financial development can significantly lower domestic carbon dioxide emissions. Guo et al. (2019) discovered that the financial scale and efficiency have a variety of effects on carbon dioxide emissions in addition to enhancing the financial indicators. Additionally, studies have demonstrated that financial development can lower emissions of several environmental pollutants, including nitrous oxide, industrial solid waste, and industrial wastewater. Green finance should be developed for strengthening the financial components which may amplify quality of environment.

Zhang et al. (2016) claim that ecological sustainability, environmental damage management, and environmental damage repair could increase green finance. The fundamental benefit of green finance is that it enables collaboration between industrialized and poor countries to minimize pollution. According to the idea of green finance, substantial finance and investments are being provided for projects that help the environment. It also demonstrates the close relationship between sustainable development and the green economy. It was determined to focus on green economy initiatives and how they promote corporate employment from an environmental perspective. Although they initially appear to be unrelated to one another, GDP, trade, energy consumption, urbanization, and green finance are linked when considered in terms of their effects on the environment. It takes a dynamic model to fit these variables together. In numerous contexts over time, the connection between economic growth and the environment has been investigated.

Rogger et al. (2011) contend that the world's most industrialized nations must concentrate on the expansion of green finance for sustainable development and climate change prevention. Wang and Zhi (2016) found a number of issues in their examination of the situation of green finance in the renewable energy sector. They put up methods to achieve ecological balance by outlining the basic relationship between environmental preservation and green finance. Green finance is thought to have a big impact on environmental protection and sustainable development. It has been determined that different approaches, such as carbon taxes and emissions, are problematic, particularly with regard to carbon emissions.

According to the information above, it is projected that green finance will minimize environmental deterioration by redistributing it away from companies and production techniques that cause pollution and toward those that do, as well as the advancement of sustainable technology. In addition to green finance, there are other factors that affect environmental protection. Income would be a financial barrier to environmental protection, according to past study of Nordhaus (2015). Higher income countries may also be more interested in and concerned with environmental sustainability.

2.1. Green Finance

The linkage between green finance and reduction in carbon emissions has not been discussed in prior literature. Li et al. (2017) developed a financial CGE model and found that green finance regulations can successfully limit intensive enterprises investment behavior, which is crucial for lowering carbon emissions. Chen (2021) has shown how green financial policies have adverse effects on investment and sponsoring of high-polluting enterprises, particularly in the areas of financing restrictions and investment restriction. Qu et al. (2019) argue that green finance greatly helps to green growth in the economy in the Economic Belt based on a differential GMM model. The green credit strategies need to be often adopted in order to develop a multi-level green monetary system.

2.2. Green Finance and Environmental Protection

The usage of non-renewable energy has increased worldwide carbon emissions since the turn of the 20th century. He et al. (2021) has examined the effect of consumption-based carbon emissions in Mexico while taking into account the role of economic growth path admits global trade flow, energy consumption, and a causality analysis frequency domain causality test. According to Bernard and Mandal (2016), the US Energy Information Administration contributed the majority of the information on energy consumption. The environmental protection will be affected by energy consumption, which can both improve living conditions and increase carbon emissions. Environmental protection has reportedly increased as a result of energy consumption.

2.3 Trade and Environmental Protection

Trade is a significant supplementary component which may help developing economies in reducing carbon dioxide emissions while sustaining economic growth through the interaction of scale, composition, and technique characteristics. While Al-Mulali (2012) and Jalil & Mahmud (2009) stated that trade openness had a negative impact on environmental protection while Kohler (2013) showed a positive impact. According to Managi et al. (2009) trade openness causes CO2 emissions to rise in non-OECD nations while lowering them in OECD nations.

2.4. Urbanization and Environmental Protection

Chen et al. (2020) investigated the impact of multidimensional urbanization on carbon emissions using a geographic panel model. Urbanization has a positive direct impact but a negative indirect effect on the population, the environment, and the economy. According to Bernard & Mandal (2016), Urbanization is used as an explanatory variable in the percentage of the population in urban areas. Urbanization can either increase carbon emissions or decrease environmental protection as it promotes

economic development, but it can also improve environmental quality by achieving economies of scale through improved infrastructure.

2.5 GDP per capita and Environmental Protection

According to Wekulom (2021), a nation's GDP per capita is significantly and favorably connected with its outlays for environmental preservation across all models. This supports the hypothesis that countries with greater GDPpc are more likely to increase their investments in environmental protection. This study also discovered that countries with higher environmental performance indexes usually spend more money on environmental protection. According to Bernard & Mandal (2016), GDPpc is a factor in the study that is used as an explanation. It has been discovered that GDPpc greatly benefits environmental protection. The GMM model, however, discovered a negative relationship between GDP per capita income and environmental quality, which means that as GDPpc increases, environmental protection decreases.

3. Data and Methodology

Green finance is a significant factor when assessing the long-term sustainability of a country's economy. Recently, environmental index has been acknowledged as one of the most important factors in promoting innovation and the use of green technology in industrial production operations. Environmentalists advise using environmental index to improve environmental quality as a result. Environmental index enhances the quality of the workplace environment (Johnes, 2006). Green finance refers to financial instruments and services that promote environmentally sustainable economic growth and development. The impact of green finance on environmental protection is the topic of interest among scholars and policymakers.

This study examines the research policies analysis to determine when various related green finance laws were affected number of municipalities with a green finance policy proposal. Previous researchers didn’t determine the impact of green finance activities on emerging economies directly through environmental protection. Here in our research, we are going to analyze the impact of green finance practices and see their effect on environment. The study spans the years from 2002 through 2022. To identify the relevant treatment effects, we searched green finance using its proxy of investment on the environmental protection products by resident units, including production of environmental protection products, such as the gross capital formation and total greenhouse gas emission. These initiatives for green finance policy, which vary from country to country, are made to aid in environmental preservation efforts. We determine the data from emerging economies to gather our research findings and further discussions.

In the present study, the information has been gathered from World Development Indicator (WDI) and OECD statistics of two groups of emerging economies (BRICS and CIVET). These regions are making drastic contribution in development of production of manufactured and semi manufactured outputs and there is immense need to investigate the impact of green finance on environmental protection in these regions. Quantitative research methodology has been applied to ascertain the empirical research. The data comprises of comprises of 21 years (2002 to 2022). After collecting the data different statistical tests like panel regression, Panel Corrected Standard Error (PCSE) Model and

correlation tests are used to ascertain empirical results. It is pertinent to note that PCSE model is frequently used in panel data analysis because it provides better inferences from linear regression models.

The theoretical framework for examining the impact of green finance on environmental protection is based on two theories: the green growth theory and the financial development theory. Green growth theory argues that economic growth can be achieved while simultaneously protecting the environment. This theory emphasizes the importance of investing in environmentally sustainable infrastructure, renewable energy, and resource efficiency. Green finance aligns with the green growth theory by providing financing for green projects, which leads to the creation of green jobs, reduced greenhouse gas emissions, and improved environmental outcomes.

3.1 Research Model

Following multiple regression model has been formulated to test the impact of green finance on environmental protection.

$$EP_{it} = \beta_0 + \beta_1 GF_{it} + \beta_2 EC_{it} + \beta_3 T_{it} + \beta_4 U_{it} + \beta_5 GDPpc_{it} + \varepsilon_{it} \quad \textbf{(1)}$$

Where i is for countries and t is for years,

EP = Environmental protection

GF = Green finance

EC = Energy consumption T = Trade

U = Urbanization

GDPpc = GDP per capita

e = Error terms

4. Data Analysis and Empirical Results

In this section, annual data of 10 emerging economies of the world referred as BRICS and CIVET groups is presented. This sample is taken because these are highly emerging economies which are on the way towards developed nations and these economies focuses more on green infrastructure to get themselves into developed nations.

4.1. BRICS Economies

Table 1 Results of Descriptive Analysis

Variables	Mean	Median	Max	Min
EC	2302.89	2117.34	5167.01	419.35
EP	2529787	1568430	11051655	310810
GDPpc	3.66	4.07	13.64	-7.83
GF	3324301	2269300	12889561	422990
T	44.73	46.81	65.97	22.11
URB	60.81	63.01	87.32	28.24

Table 1 demonstrates the statistical description of the variables. It presents descriptive statistics which lets us know the information appearing in general. It is depicting all the independent and dependent variables of the data of the BRICS economies for the relation of green finance and environmental protection. It represents all variable values as Mean, Median, Max and Min.

Table 2 Results of Correlation Analysis

	EC	EP	GDPpc	GF	T	URB
EC	1					
EP	-0.01	1				
GDPpc	-0.16	0.50	1			
GF	-0.02	-0.99	0.51	1		
T	0.38	0.08	0.27	0.06	1	
URB	0.51	-0.29	-0.44	-0.30	-0.35	1

Table 2 measures the strength and direction of the linear relationship between the two variables. It shows that dependent variable; Environmental Protection (EP) is correlated with independent variables. It is performed in order to find if any problem of multicollinearity exists. For this Kennedey (2008) indicates that if the value of Pearson correlation r=70 or more it means that correlation exists among variables so we need to drop any one of them. After observing the correlation findings, we find that none of our independent variable is highly correlated, showing the non-existence of multicollinearity. The independent variable (GF) is highly correlated with dependent variable EP which is a good indicator.

Table 3

Results of Regression analysis using (PCSE) model

Variable	Coefficient	T-Stat	Prob
C	-4.12	-0.69	0.49
EC	-1.23	-1.94**	0.05
GDPpc	0.19	2.28**	0.02
GF	-6.12	1.94**	0.03
T	1.01	2.82**	0.01
URB	3.53	2.77**	0.01
R-Square	0.64		
F-Statistics	16.63		
Prob. F. Stat	0.00		

Note: ** denotes p<0.05 which reflects that independent variables have significant impact on dependent variable.

Table 3 estimates the coefficient and t-stat of independent variables. It shows that while observing BRICS, the variable green finance shows coefficient of -6.12 which means that if we increase GF by 1 unit, then CO2 emission will decrease by 6.12 units which leads to increase in environmental protection. It shows inverse relationship between green finance and CO2 emission. All the independent variables show probability less than 0.05 which means that all the independent variables show highly significant impact on dependent variable. In this model, R-square is 0.64 which says that our independent variables explain 64% of dependent variable in BRICS economies. The probability of F-stat shows the significance of F-stat. In our results, it is 0.00 which shows that the F-stat is statistically significant. It means that all independent variables in the model jointly

Table 4. Results of Descriptive Analysis

Variables	Mean	Median	Maximum	Minimum
EC	910.05	816.25	1859.84	414.69
EP	244431.6	224160.	619840	56110
GDPpc	3.52	3.82	10.51	-8.40
GF	390739.9	314275	1002370	140050
T	65.49	48.30	186.47	30.25
URB	**55.02**	**50.94**	**81.74**	**25.51**

Table 4 explains the values of our variables in terms of Mean, Median, Max and Min in CIVET economies.

Table 5. Results of Correlation Analysis

	EC	EP	GDPpc	GF	T	URB
EC	1					
EP	0.52	1				
GDPpc	0.02	0.04	1			
GF	0.25	-0.94	0.04	1		
T	-0.24	-0.11	0.34	-0.15	1	
URB	**0.46**	**-0.05**	**-0.18**	**-0.10**	**-0.45**	**1**

After observing table 5 of correlation findings, we find that none of our independent variable is highly correlated, showing the non-existence of multicollinearity. The independent variable; Green finance (GF) is highly correlated with dependent variable EP which is a good indicator. The variables EP and GF shows -0.94 correlation between each other which means that these both have perfect negative correlation with each other. It reflects that when there is improvements in green finance, there would be drastic improvements in environmental protections. According to past studies, there is a significant link between green finance and the environment. Tang et al. (2018) has emphasized that management acts as a catalyst for turning green innovation into increased business success

Table 6. Results of Regression Analysis

Variable	Coefficient	T-Stat	Prob
C	-26.43	-2.09**	0.04
URB	2.16	1.00	0.32
T	1.23	2.20**	0.03
GF	-3.63	1.76*	0.08
GDPpc	0.47	0.34	0.73
EC	-3.67	-1.35*	0.10
R-Square	0.30	Prob. (F-Stat)	0.00
F-Stat	4.00		

Note: ** denotes significant effect of independent variables on dependent variable where $p<0.05$

Table 6 explains about the coefficient and t-stat of key variables and their impacts on EP in CIVET. The coefficient of green finance indicates (-3.63) that if we increase GF by 1 unit, then CO_2

emission will decrease by 3.63 units which leads to increase in environmental protection. It shows inverse relationship between green finance and CO_2 emission. T-stat values of Urb, GDPpc and EC were not close to 2 which shows these variables are insignificant in making effect on environmental protections. Urbanization and GDP per capita shows high probabilities which means that they have insignificant results in terms of environmental protection. Energy consumption, Trade and Green finance shows significant probability values which shows that they have significant relationship with environmental protection in CIVET economies. In this model, R-square is 0.30 which says that the independent variables explain 30% of dependent variable in CIVET economies. F-stat gives a value of 4 having probability of 0.00 which shows its significance in CIVET economies.

BRICS (Brazil, Russia, India, China, and South Africa) and CIVET (Colombia, Indonesia, Vietnam, Egypt and Türkiye) are both groups of emerging economies. While both groups are working towards developing their green finance sector, it is generally true that the BRICS countries are further ahead in terms of green finance as compared to CIVET countries. On the other hand, CIVET countries have been slower in developing their green finance sector. While some of these countries have taken concrete steps towards promoting green finance, they still face significant challenges in terms of policy development, regulatory frameworks, and financial infrastructure. While comparing BRICS and CIVET groups, we find that green finance and energy consumption both promotes environmental protection and trade, urbanization and GDP per capita have adverse impacts on environmental protection in both group of economies. Our analysis finds that the influence of green finance on environmental protection is higher in BRICS rather than CIVET group. While focusing on the work of Zakari & Khan (2022), they find that trade is negatively affecting CO_2 emission having insignificant findings and on the other hand, energy consumption and urbanization shows significance results but increases CO_2 emission which leads to environmental degradation.

Table -7. Multi-Collinearity Test

Collinearity Statistics		
Model	**Tolerance**	**VIF**
GF	0.653	1.532
EC	0.666	1.502
TO	0.623	1.606
Urb	0.502	1.994
GDPC	0.741	1.350

To diagnose the absence of multi-collinearity in data distribution, Variance Inflation Factor (VIF) values have been observed. It is pertinent to mention that the values of VIF must be below 10 to show the absence of multi-collinearity in data distribution. Similarly, the value of tolerance must be greater than 0.2 for absence of multi-collinearity. Table 7 shows the results for VIF stats which indicate that values are greater than 1 and below than 10. Similarly, tolerance value is greater than 0.2 which indicates that there is no presence of multi-collinearity in data distribution.

5. Conclusion and Policy Recommendations

5.1 Conclusions

The present study investigates the impact of green finance on environmental protection in emerging economies. To achieve this objective, multiple econometric techniques have been used for BRICS and CIVET groups. To measure green finance, earlier studies like Meo and Karim (2021) and Shen et al., (2021) have used green investments, private bonds and public green bonds as proxy for green finance. These two measurements ignore the combined effects of the public and private sectors and it only accurately depict green finance driven by one of these two sectors. We collected data from OECD statistics for green finance by focusing on its proxy as measure by investment on the environmental protection products by resident units, including production of environmental protection products, such as the gross capital formation and total greenhouse gas emission. This study also assesses the impacts of energy consumption, trade, GDP per capita and urbanization on carbon dioxide emissions using PCSE model as fixed effect method.

Main results of the study reflect that while observing BRICS economies, it was found that the influence of green finance on environmental protection is significant for all variables under observation. It shows that green finance is positively related to environmental protection having significant negative relation with CO_2 emission suggesting that green finance promotes environmental protection. This result is consistent with the work of Zakari and Khan (2022) who also proves that green finance promotes environmental protection. However, trade, urbanization and GDP per capita shows a positive relation with CO_2 emission which decreases environmental protection and on the other hand, energy consumption shows negative relation with CO_2 emission which promotes environmental protection. While observing CIVET group, we find that the impact of green finance on environmental protection gives both significant and insignificant findings depending upon variables. In this group, green finance is positively related to environmental protection having significant negative relation with CO_2 emission which means that it promotes environmental protection but the effect is low as compared to BRICS economies.

The results of the study further illustrate that the coefficient of energy consumption is negatively affecting CO_2 emission which promotes environmental protection while GDP per capita, urbanization and trade show positive coefficient which means that they are positively affecting CO_2 emission which leads to environmental degradation. Urbanization and GDP per capita shows insignificant results which means that the data provide little or no evidence that the null hypothesis is false while energy consumption and trade shows significant findings. One of the main results of the present study is that coefficient of green finance is negative but important in both BRICS and CIVET economies, suggesting that green finance endorses the protection of environment and reduces CO_2 emission.

5.2 Recommendations

The results of present study recommend that we must promote green finance if we want to protect our environment. So, the government must support the standardization of green finance practices. We must have to promote products which are environment friendly to save our environment from severe damage. Green finance initiatives are very helpful and they give us a path towards

sustainable environment. Government measures that support environmental sustainability across all industries, including regulations, rewards, and market mechanisms, should be promoted. Through market mechanisms like taxes on things like carbon, plastic, and other items that have negative environmental impacts, a true cost of a corporation or industry's operations is made available. Through incentives in areas like the use of electric vehicles and renewable energy sources, adoption can be increased.

Governments must also frequently change regulatory regulations for pollution, recycling, and building requirements in order to ensure that the economy keeps up with improvements in innovation and technology. Governments can also progressively stop offering ineffective subsidies for electricity, fossil fuels, and water. When these subsidies are poorly targeted, which is typically the case, they encourage resource waste, economic distortion, and detrimental environmental outcomes. Also, it is important to promote the expansion of the green investment market.

5.3 Limitations and future research

Future researchers may add on different variables that supports green finance to check their impact on environment and also, they can apply the same techniques in some developed economies or under developed countries that are not focusing on development and surviving below the line to check whether green finance techniques give suitable findings in these countries for protection of environment or it is not helpful for them. Future studies can look at how the challenging institutional and policy frameworks affect the development of green finance and investment markets in developing countries. The particular institutional and legal restrictions that apply to developing countries should be considered in such investigations. Also, the impact can be tested on some broader level by increasing number of observations or sample size to get more clear findings in term of protecting the environment using green finance.

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