## **CHAPTER V**

## **CONCLUSION AND RECOMMENDATIONS**

## 5.1 Conclusion

This study concludes that the adoption of renewable energy in BRICS+ countries is significantly influenced by financial institutions, financial markets, and macroeconomic factors such as inflation, foreign direct investment (FDI), and GDP, with varying effects across linear and nonlinear frameworks, and over short- and longterm horizons. The analysis of both Model A (REC as the dependent variable) and Model B (REC/GDP) reveals that financial institutions and markets exhibit a predominantly negative impact on renewable energy consumption in the long run, especially in the linear ARDL framework. However, nonlinear results from the NARDL model suggest an asymmetric influence, where positive shocks in financial institutions can promote renewable energy efficiency, while positive financial market shocks may further hinder renewable development.

In the short run, financial variables show no immediate influence, indicating their impact is structural and unfolds gradually. Inflation consistently demonstrates a positive long-run effect, reinforcing its role as a driver of energy transition under economic pressure. Meanwhile, FDI exhibits a dual effect—negatively influencing total renewable energy consumption but positively affecting renewable energy efficiency relative to GDP, particularly in nonlinear settings. The REC/GDP ratio also confirms that economic growth is positively associated with energy efficiency in the short term.

In short the findings for each research question are:

- Financial institutions and markets have a mixed impact on renewable energy adoption. In the short run, their effects are limited, but in the long run, improvements in financial institutions and markets can significantly boost renewable energy consumption. The NARDL model revealed that positive shocks to these financial factors could lead to a more pronounced positive effect on renewable energy consumption.
- 2. Macroeconomic factors like GDP, FDI, and inflation play a critical role in moderating the relationship between financial development and renewable energy consumption. FDI and inflation showed positive long-term effects, while GDP drove energy demand, influencing the need for renewable energy. However, FDI had a mixed effect, with some models showing negative impacts on renewable energy consumption, depending on the nature of investments.

These findings emphasize the need for strategic financial reforms and targeted macroeconomic policies that channel investments toward sustainable sectors. Strengthening institutional support, improving financial market stability, and aligning foreign investments with green energy goals are crucial steps for enhancing renewable energy adoption in BRICS+ economies to secure the future energy. Future research may expand on these insights by incorporating institutional quality, policy frameworks, and environmental regulations to better understand the conditions that foster a resilient and sustainable energy transition.

## **5.2 Recommendations**

Based on the research findings, there are some recommendations for policymakers and researchers:

Recommendations for Policymakers:

1. Encourage Investment in Renewable Energy

To get both domestic and foreign investors interested in green energy, policymakers should make it a top priority to create a stable financial environment. Then, with this it can attract the investors to invest in our country. Tax breaks, subsidies, or better financing options for renewable energy projects are some of the ways to get this done. Over time, increasing foreign direct investment in the renewable energy sector will lead to more energy efficiency and long-term growth.

2. Strengthen Financial Development to Support Renewable Energy

Strong banks can sometimes make it harder to switch to renewable energy, but when you look at them along with GDP growth, they can help resources be used more efficiently. Governments should focus on strengthening banks and other financial institutions, especially in developing countries, to better support renewable energy projects. This could mean creating green bonds or other investment products that are only for the renewable energy sector. It is important to keep the financial system stable and predictable because market fluctuations can make people less likely to invest in clean energy. That the government can focusses to strengthening the finance, especially our central bank.

Recommendations for Researchers:

1. Explore Nonlinear Dynamics Further

Even though the NARDL model gives useful information about how positive and negative shocks affect the use of renewable energy, it doesn't do a good job of capturing the complex nonlinear relationships that are at work. Future studies should use more advanced econometric methods, such as machine learning or structural vector autoregressions (SVAR), to get a better picture of how economic factors and the use of renewable energy affect each other over time. These days econometrics methods are being upgraded that can be the gaps for the new research topics.

2. Examine the Role of Technological Innovation

Even though the NARDL model gives useful information about how positive and negative shocks affect the use of renewable energy, it doesn't fully capture the complex nonlinear relationships at work. To get a better picture of how economic factors and the use of renewable energy change over time, future studies should use more advanced econometric methods, such as machine learning or structural vector autoregressions (SVAR) or any other methods.