

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study aims to examine the effect of digitalization with variables (Fixed Broadband Subscription, Mobile Cellular Subscription, and Internet Users) and energy consumption on CO₂ carbon emissions in ASEAN countries. This study observes 8 countries in the ASEAN region, namely Indonesia, Singapore, Thailand, Malaysia, Vietnam, Brunei Darussalam, Laos, and Philippines using panel data (time series and cross section) with the method used is the Panel ARDL (Autoregressive Distributed Lag) method. Based on the ARDL estimation results, the conclusions in this study are:

- a) Fixed Broadband Subscription has a significant and negative impact on CO₂ carbon emissions. It is expected to reduce the level of CO₂ carbon emissions by focusing on energy-efficient ICT to speed up the internet and reduce energy consumption to maintain environmental quality. Meanwhile, in the short term Fixed Broadband Subscription has a significant but positive impact on increasing CO₂ carbon emissions.
- b) Mobile Cellular Subscription has a significant and positive impact on increasing CO₂ carbon emissions in the long run. The results show that mobile cellular subscriptions have increased by 0.039 percent which results in an increase in the level of CO₂ carbon emissions in ASEAN countries.
- c) Internet Users variable has a significant impact and a positive effect in increasing CO₂ carbon emissions by 0.029 percent in the long run. Meanwhile, in the short term, the results show that Internet Users have played an important role in reducing carbon emissions in ASEAN countries by 0.048 percent.

- d) Variable Energy Consumption has a significant and positive impact on increasing CO₂ carbon emissions by 0.081 percent in the long run. Meanwhile, for the short-term test, the variable energy consumption does not have a significant impact but has an effect on reducing CO₂ carbon emissions by 2.716 percent.

5.2 Recommendation

Based on the research results presented in the conclusion above, the author can make the following recommendations:

1. In the energy sector, to reduce the level of CO₂ carbon emissions can be done by utilizing renewable energy and developing clean energy-based industries.
2. In the government sector, it must take firm action against individuals or companies that still cause environmental damage. The thing that can be done is to apply very strictly the carbon tax that has been made before. This application aims to make the industry switch to green economic activities with low carbon emissions. Set a carbon tax to reduce the amount of carbon emissions and the proceeds from the carbon tax are diverted to environmentally friendly investment efforts.
3. For future researchers, it is hoped that this research can be a guide for researchers in terms of academic needs, especially those related to the effect of digitalization on carbon emissions. In addition, it is hoped that future researchers can conduct research on a larger scope such as adding other variables. To support this, researchers hope for the availability of data that will be used to conduct research.