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| Title | Exploring the barriers to decarbonizing the transportation system: A pathway to a cleaner future in emerging economies |
| Author(s) | Md Zahidul Anam, Md Shihab Shakur, A.B.M. Mainul Bari, Binoy Debnath, Fahmida Tabassum Bristy |
| Contact Email(s) | zahidul.anam@aiub.edu |
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| Abstract |
| The transportation sector is a major contributor to global greenhouse gas (GHG) emissions, particularly due to the emissions released by motor vehicles, shipping, and aviation. Carbon emissions increase significantly as demand for transportation services rises, especially in emerging economies like Bangladesh. Substantial reduction of these emissions by this sector is essential for mitigating climate change. However, decarbonization strategies and initiatives face numerous challenges in emerging economies, where transport infrastructure is still developing and heavily reliant on fossil fuels. This study, therefore, identifies and examines the barriers that emerging economies like Bangladesh encounter when implementing decarbonization strategies. First, based on literature research and expert validation, the study identified sixteen of the most relevant barriers. Then, an integrated approach combining the Bayes theorem and the Best-Worst Method (BWM) was utilized to evaluate and rank these barriers. The results obtained from this study indicate that among the sixteen barriers assessed, the top three are investment risks, high dependence on fossil fuels, and poor purchasing and expenditure power of residents (having a global weight of 0.0972, 0.0863, and 0.0847, respectively). These findings are expected to assist policymakers in emerging economies in developing structured strategies and making more targeted investment decisions that promote decarbonization in the transportation sector. They will also facilitate a smoother transition towards a sustainable transportation system and a cleaner future. |
| Sustainable Development Goal(s) (SDG) |
| Example: Goal 9: Industry, Innovation and Infrastructure |

Goal 7: Affordable and Clean Energy

Goal 9: Industry, Innovation and Infrastructure

Goal 11: Sustainable Cities and Communities

Goal 12: Responsible Consumption and Production