ABSTRACT

Hydrometeorological disasters occur frequently in Indonesia and have caused substantial social, economic, and environmental losses. From a disaster risk perspective, disaster risk is determined not only by the intensity of hazards but also by the level of vulnerability and the capacity of a region to cope with those hazards. This study aims to examine the environmental, governance, and fiscal determinants of disaster risk in Indonesia in both the short and long run, while also investigating whether disaster risk exhibits persistence over time. Disaster risk is analysed using several key variables, including greenhouse gas emissions, institutional quality, fiscal capacity, social assistance expenditure, capital expenditure, and unexpected expenditure.

This study employs balanced panel data from 34 provinces in Indonesia covering the period 2015–2024. The data were compiled from various official government sources in Indonesia. To address potential endogeneity and unobserved heterogeneity while capturing the dynamic nature of disaster risk, the analysis applies the two-step System Generalized Method of Moments (System GMM). In addition, the validity of the estimation is assessed through standard System GMM specification and significance tests.

The findings reveal that disaster risk in Indonesia is highly persistent over time. Greenhouse gas emissions, institutional quality, fiscal capacity, and social assistance expenditure are found to have statistically significant effects on disaster risk. In contrast, capital expenditure and unexpected expenditure do not have a significant impact on disaster risk. These findings suggest that disaster risk in Indonesia can be better anticipated and reduced through stronger governance and government spending that is more responsive to disaster risk and climate-related challenges.

Keywords: *Disaster Risk; Climate Change; Governance; Fiscal Expenditure; System Generalized Method of Moments.*