STUDYING THE RELATIONSHIP BETWEEN DENGUE INFECTION AND ENVIRONMENT FACTORS IN GAMPAHA DISTRICT SRI LANKA

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This study investigates the relationship between dengue infection and environmental factors in Sri Lanka's Gampaha district from January 2013 to December 2021. The purpose of this study an accurate early warning system to forecast and respond to outbreaks promptly. Employing various statistical models and tests, the research identifies a significant relationship between dengue cases and lagged environmental variables. The chosen model, validated for stability, incorporates an EGARCH modification due to ARCH effects. With a high R-squared value of 0.72, indicates that the selected variables explain a large portion of the variance in dengue cases. Past dengue cases, rainfall, and temperature positively influence current cases, while past humidity has a negative impact. The study's implications extend to public health policy and planning, emphasizing the importance of considering environmental factors in dengue control efforts throughout Sri Lanka. Additionally, the model can be applied to other districts and MOH areas for broader disease control strategies.

Keywords: *Dengue fever, Environmental Factors, ARDL model, Gampaha District, Disease control, Time series analysis.*