A GIS-based site-specific dengue risk assessment in Davao City using analytical hierarchy process (AHP)

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Abstract

The main objective of this study was to assess the dengue situation of Davao City by integrating socio-physical and climactic factors using AHP and GIS to generate risk zonation area. Potential areas were categorized as high, moderate and low. The factors that were used in determining the risk of dengue fever came from previous related researches. Then, relative weights of factors were computed, with the consistency ratio being less than 0.1 which were within its accepted range. The derived data from AHP-based dengue risk zonation area generated vital information on determining areas belonging to different levels of risks. Based on AHP, the most influential factors were found to be population density, housing density and land use. The accuracy of the AHP-produced dengue risk map with respect to the actual dengue cases map came at 63.64%.

Speaker Publications:

1. Ali, S.A., Ahmad, A., 2018. Using analytic hierarchy process with GIS for Dengue risk mapping in Kolkata Municipal Corporation, West Bengal, India. Kor. Spat. Inf. Res. 1-21.
2. Dom, N.C., Ahmad, A.H., Latif, Z. A., Ismail, R., 2016. Application of geographical information system-based analytical hierarchy process as a tool for dengue risk assessment. Asian. Pac. J. Trop. Dis. 6, 928-935.
3. Iguchi, J.A., Seposo, X.T., Honda, Y., 2018. Meteorological factors affecting dengue incidence in Davao, Philippines. BMC. Public Health. 18, 629-638.
4. Khormi, H.M., Kumar, L., 2011. Modeling dengue fever risk based on socioeconomic parameters, nationality and age groups: GIS and remote sensing based case study. Sci. Tot. Environ. 409, 4713-4719.
5. Umor, S.M., Mokhtar, M., Surip, N., Ahmad, A., 2007. Generating a dengue risk map (DRM) based on environmental factors using remote sensing and GIS technologies, in: 28th Asian Conference on Remote Sensing 2007, 867-881.

9th International Conference on Tropical Medicine and Infectious Diseases; Berlin, Germany- February 24-25, 2020.

Biography:

Vladimir Roldan B. Rosales I, or Vlad, as his family and friends call him, is just your typical twenty-year-old young adult, who had gone through all of the phases from being the smart, brainy kid in the family, being consistently in the first section of, arguably, the best institutions in Tagum City. Taking Applied Mathematics as his degree program was never the plan but going to UP was. Hence, even being not initially qualified to enter the university, he fought tooth and nail for his dream of becoming an Iskolar ng Bayan, thus being the last qualifier of the admission test.

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