**An Open Source Approach for Measuring Level of Urbanity**

Kasthurisinghe K.1\*, Bandara N.S.2

1Undergraduate, Department of Town & Country Planning, University of Moratuwa, Sri Lanka

2Lecturer, Department of Town & Country Planning, University of Moratuwa, Sri Lanka

[kavindikasthurisinghe7@gmail.com](mailto:kavindikasthurisinghe7@gmail.com)

***ABSTRACT***

In the realm of urban studies, accurately measuring urbanity levels is paramount for effective planning and sustainable development. Traditionally, measuring the urbanity levels requires large amount of data sets and ground verfications both of which are labor-intensive and time-consuming. Recognizing the limitations of such conventional methods, this study attemped to increasingly explore the potential of Open Source GIS tools and data sources. This study presents an open-source data-oriented approach that leverages web-based data sources for a fast and accurate method of measuring urbanity levels. The proposed approach utilizes open and big data sources as primary data inputs and evaluates the applicability and accuracy of this method. By integrating Point of Interest (POI), OpenStreetMap (OSM) data with Open Source GIS tools, this research aims to comprehensively assess urbanity levels of selected urban centers across three major corridors in Sri Lanka namely Kandy corridor, Galle corridor, and Negombo corridor. Three key parameters determining the level of urbanity including density, diversity, and land use-mix were derived through literatre and employed in the methodology to systematically identify and measure the level of urbanity. Results denote that Kiribathgoda, Panadura, and Wattala cities obtained highest level of urbanity in Kandy, Galle and Negombo corridors respectively. This provides valuable insights for informed decision-making in sustainble planning endeavors. Importantly, this method is offering a scalable solution for assessing urbanity levels in urban centers worldwide. This research presents a transformative framework for measuring urbanity levels, streamlining data collection, and enhancing analytical precision, thereby advancing urban studies and informing more efficient urban development strategies. In conclusion, the developed method of this study hold significant implications for guiding urban planning initiatives and informing policy decisions aimed at achieving sustainable urban development objectives.

**Keywords:** Urbanity,GIS, Open Data, Sustainable Development