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THE RELIABILITY OPEN SOURCE GIS IN SPATIAL DATA CADASTRAL MANAGEMENT SYSTEM

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DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). This project/dissertation is original and it is the result of my work, unless otherwise indicated or acknowledged as referenced work.

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ABSTRACT

A cadastral database is a vital tool for recording and accessing detailed information about land ownership, boundaries, and property rights, essential for land management and urban planning. Efficient spatial data handling, involving Geographic Information Systems (GIS), ensures accurate mapping and real-time updates of land parcels. However, the establishment and maintenance of a cadastral database face significant challenges, particularly in terms of cost and capabilities. The high costs of acquiring, updating, and managing spatial data pose significant challenges, particularly for developing regions. The aim of this research is to show that open-source platforms are more advantageous than commercial software for managing the cadastral system. In order to achieve the aim, there is two objective which is evaluate the reducing costs of commercial software versus open-source software to address the high cost issue and investigate the spatial data capabilities of open-source and commercial software. To achieve the first objective is by reviewing and existing research and for the second objective were using the Qgis2web and ArcGIS online to compared the capabilities of the tool's functionalities. Based on this research, the results indicate that reducing costs while maintaining tool functionality and capabilities can be achieved using open-source software. The study also finds that open-source tools provide a cost-effective solution without compromising on the features and functionality needed for managing cadastral spatial data.

Keywords: open source, costing, commercial, ESRI, QGIS, ArcGIS

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