

**DEVELOPMENT OF GEOSPATIAL DATABASE  
FOR PUBLIC SCHOOLS DATA MANAGEMENT  
IN OSOGBO, OSUN STATE.**

***BY***

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## **ABSTRACT**

This study aimed at building a geospatial database containing information on infrastructural facilities, staff profiles and enrolment characteristics in public schools in Osogbo, Osun State. This was with a view to enhancing the monitoring and management of school systems using Geographical Information System (GIS) tools. The specific objectives were to carry out an inventory of infrastructural facilities, biodata of teachers and children enrolments in public schools in Osogbo, produce a map of Osogbo showing the locations of public schools and create a geospatial database containing basic information such as infrastructural facilities, teachers' biodata and children enrolments in public schools in the area.

Both primary and secondary data types were used. The primary data on the locations of schools were collected with handheld Global Positioning System (GPS), while the attribute datasets i.e. on facilities, staffing profile and enrolment were collected with a semi-structured questionnaire administered to Head teachers. Secondary data used were school records obtained from the schools and a map of Osogbo got from the Town Planning Authority at Osogbo. The map was converted to a digital form with AutoCad software for spatial analyses. The data collected with the GPS and questionnaires were organized with the Microsoft Access software for GIS analyses. Spatial queries were developed to operationalize the geodatabase. Data overlays were also performed to assess spatial relationships among the themes including communication network, drainage, utility facilities and location of schools.

The results obtained showed that the geospatial database developed was efficient in storing, retrieving and displaying a variety of data on infrastructure, biodata of teachers and enrolments for school management purposes. For instance, the GIS readily generated basic data on each school with respect to the aforementioned parameters. It also rapidly ranked and displayed schools in a spatial format based on their infrastructural characteristics. In the GIS analysis, Unity High School on Old Ikirun road ranked first while the Timehin Grammar School, Oke-Osun ranked 71<sup>st</sup>. These were consistent with field observations on the qualities of the facilities in the schools. The queries also readily revealed other crucial details in map forms. When queried, it logically presents the state of school buildings and staffing profiles among others. For instance, when the GIS was queried for schools with buildings that had damaged roofs, it came out with supporting statistics that among buildings designated as educational blocks in this study, uncompleted blocks accounted for 32.7%, blocks with damaged or completely removed roofs 32% and blocks with broken or unfixed windows (67.9%). All of these were generated with their locations in map forms.

The study thus showed in various dimensions the versatility of geospatial database for managing the school systems and confirms that such systems need to be integrated into the educational management in the State and indeed the rest of Nigeria for better results from the educational sector.