# GEOSPATIAL ASSESSMENT OF PETROL FILLING STATIONS' LOCATIONAL PATTERN IN EJIGBO LGA, OSUN STATE

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## ABSTRACT

This study assessed the compliance with rules and regulations set by Osun State Government and the Nigerian National Petroleum Corporation (NNPC) of the existing location pattern of petrol filling stations in Ejigbo Local Government Area (LGA) using GIS technique. The specific objectives are to assess compliance of the existing locational pattern of petrol filling stations in the study area in relation to the surrounding physical structures using GIS, to compare rural and urban locational patterns of filling stations in the LGA and to assess people's perception on the locational pattern of the petrol stations in the study area. This is with a view to assess the existing locational pattern of petrol filling stations in the study area.

The study involved the use of both primary and secondary data. For the collection of primary data, two sets of questionnaires were designed, namely, questionnaire for the managers of the petrol filling stations and questionnaire for the general public. The total number of the questionnaires administered to the general public was 520. Also attribute data such as area of the landed property of the petrol filling stations, set-back to the roads and rivers, among others were obtained by direct field observations. The main sources of secondary data for this research include map of Local Government Areas of Osun state at a scale of 1:250,000 and base map of Ejigbo LGA at scale 1:15,000. A hand held Global Positioning System (GPS) receiver was used to update the maps.

The base map of the study area was scanned, georeferenced, and all features were digitized layer by layer using ILIWIS 3.2a software. Map layers were exported from ILIWIS 3.2a to Arc view GIS 3.2a software for the creation, integration, manipulation and visualization of cartographic database. Queries, buffering and overlaying operations were carried out to evaluate the compliance of the existing

locational pattern of petrol filling stations in the study area. To assess people's perception on the locational pattern of the petrol stations, simple descriptive statistics was employed.

The findings showed that 97.30% of the petrol filling stations obeyed river set-back standard, 18.92% obeyed road set-back, 21.62% were not closed to one another, and 27.03% were not within built-up areas, the areas of the plot of 21.62% of the petrol stations were up to standard, the height of the fence of 18.92% of the petrol stations were up to standard, and 89.19% obeyed the minimum standard distance from the public buildings. None of the petrol stations complied with all the identified standards. Out of 37 petrol filling stations, 23 were located in Ejigbo, the urban centre, while the remaining 14 stations are scattered about in the rural areas.

In conclusion, the study found that the identified 37 filling stations in Ejigbo LGA were concentrated along major roads. The reasons for this locational pattern were due to corruption, ineffectiveness of local Planning Authority and political influence, among others. This pattern is however associated with problems of fire risk, occasional traffic disturbances, stations located too far from people in some towns/villages of the LGA.