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Comparison of Automated Zone Design Census Output Areas with Existing Output Areas in South Africa

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Abstract : South Africa is one of the few countries that have stopped using the same Enumeration Areas (EAs) for census enumeration and dissemination. The advantage of this change is that confidentiality issue could be addressed for census dissemination as the design of geographic unit for collection is mainly to ensure that this unit is covered by one enumerator. The objective of this paper was to evaluate the performance of automated zone design output areas against non-zone design developed geographies using the 2001 census data, and 2011 census to some extent, as the main input. The comparison of the Automated Zone-design Tool (AZTool) census output areas with the Small Area Layers (SALs) and SubPlaces based on confidentiality limit, population distribution, and degree of homogeneity, as well as shape compactness, was undertaken. Further, SPSS was employed for validation of the AZTool output results. The results showed that AZTool developed output areas out-perform the existing official SAL and SubPlaces with regard to minimum population threshold, population distribution and to some extent to homogeneity. Therefore, it was concluded that AZTool program provides a new alternative to the creation of optimised census output areas for dissemination of population census data in South Africa.

Keywords : AZTool, enumeration areas, small areal layers, South Africa
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