

Development of a Statistical Analysis Tool for GIS with an Application to Social Sciences in Uganda

Karin Gullstrand
Maria Ljungblom

Avdelningen för Fastighetsvetenskap
Lunds Tekniska Högskola
Lunds Universitet

Department of Real Estate Science
Lund Institute of Technology
Lund University, Sweden



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Abstract

This report describes the development and implementation of a statistical analysis tool integrated in a GIS to be used in conducting research within social sciences. The application is developed at Lund University in Sweden and is followed by a minor study applied to social sciences in Uganda. The purpose of the minor study is to introduce GIS and the tool in research within the Sida project "Consolidation Peace and Development in the Lake Victoria Region and its Environs: The National and Local Responses to Transformation from Turmoil to a more Sustainable Development Process" in Uganda. The Department of Peace and Development Research at Gothenburg University is the Swedish coordinator of the Sida project. The Sida project is performed in cooperation with the Faculty of Social Sciences (FSS) at Makerere University in Kampala, Uganda.

The statistical analysis tool was developed in ArcMap using Visual Basic for Applications (VBA). To manage tables, map, graph etc. in ArcMap the COM-library ArcCatalog was used. The different functions of the tool are: creating new geographical attributes, showing the relationship between two attributes in a graph, and performing a multiple regression analysis.

During a one-week GIS workshop for researchers and teachers at FSS at Makerere University, problems and possibilities concerning the implementation of GIS and the new statistical tool were identified.

An implementation of the tool, and GIS as such, was made within the parts gender relations and HIV/Aids in the Sida project. Analyses were performed on the currently available data and new collected data. Examples of data used in the analyses are number of women organisations in Kigulu county (Iganga district), population figures, and number of health organisations on district level.

The most important conclusion of our thesis is that GIS can be a useful tool in social sciences but that there is a need of user-friendly tools. The statistical analysis tool is an example of a user-friendly tool that can be used in research within social sciences.