

GIS and Rural Sociology

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Background

The main goal of rural sociology is to accumulate sociological knowledge particularly through empirical research to solve “rural” societal problems (Bealer, 1989) and a recognition that rural problems differ from urban problems (Christenson and Flora, 1991). Rural research and policy is concerned with the alleviation of rural poverty, rural industrialization and employment, and provision of education to appropriate uses of rural resources such as land, water and forest to solve problems faced by rural societies. The subject matter of rural sociology is very broad. A recent issue of Rural Sociology December 2002 focused on spatial inequality.

GIS and Rural Sociology

Geographic Information Systems (GIS) as a tool or as a technology contributes to solve problems related to a field that has a spatial distribution or spatial importance. GIS not only helps to visualize distribution of phenomena in a geographical space, it also helps to answer the questions such as what contextual factors might be associated with such a distribution. For example, visualization of the distribution and concentration of poverty in a geographical space in a map using GIS.

GIS also has a variety of data manipulation techniques including thematic map overlays and complex spatial and statistical analyses. GIS is also capable of handling spatial and aspatial data. In the poverty example above, we can overlay other contextual information such as availability of resources, services and facilities such as schools, health services, road networks, rural industries, employment opportunities and distribution of organizations and institutions available in the area to comparatively examine whether these contextual factors are associated with poverty. Further, rural sociologists interested in environmental issues utilize land-use and land-cover change information that come from GIS in contextual analysis (see Shultz and Regan, [1991] to see how Rural Sociologists can use GIS). Use of GIS is also increasing in studying demographic behaviors such as fertility, mortality, and migration of rural areas.

Current Research Endeavors

Rural Sociologists have used GIS in many different areas. A few examples to mention are: land-use change (Luloff and Befort, 1989), study of changing employment patterns (Lonsdale and Archer, 1995), study of the examination of class consciousness (Stephen-Norris and Soughworth, 1995), neighborhood analysis (Martin and McDonald, 1995), and planning process in rural development (Savtisky, 1992).

Challenges in Integrating GIS and Rural Sociology

Despite the important role of GIS in solving rural societal problems, there are limitations that hinder the use of GIS in Rural Sociology. First, it is difficult to collect data related to aspatial phenomena such as attitudes, values, and belief using GIS. The next problem is linking macro-level contextual data collected by GIS (e.g., land use and land cover) with micro-level information. However, researchers are increasingly endeavoring to find ways to link these data (see Liverman et al., 1998 and Fox et al., 2003).

Beside these, as GIS requires highly technical expertise and demands specific computer systems for successful operations these also limit its wider application in Rural Sociology.

Relevant Literatures

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Other Sources

Resource Documents published by PRI's GIA Core http://www.pop.psu.edu/gia-core/gis_rd_listing.htm

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