Social Network Analysis and Data Mining of Land Tenure Information in the Talking Titler System

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SUMMARY
Networks of social relationships are a fundamental attribute of land tenure systems. In changing situations, individuals and groups may belong to complex, multi-layered, changing and perhaps conflicting social networks at any particular time. Standard land administration models serve as blueprints for developing land tenure information systems (LTIS), but many of them are derived from western administration systems and fail to accommodate some of the complex realities of many customary systems and unstable, changing states of affairs such as post conflict situations or the major changes that occurred in post-apartheid South Africa. The paper describes exploratory data mining and social network analysis (SNA) techniques of simulated social data stored in an ubiquitous (web and mobile) Land Information System (LIS) based on the Talking Titler Model (TTM). The Talking Titler Model is a flexible land administration model suited for securing tenure in complex and uncertain situations. The design philosophy for local level land tenure information system development is that the design should be grounded in the data, and evolves according to what local circumstances dictate. All preconceived notions about data classes, such as person, land objects and reference instrument (e.g. title deed), and the relationships between them should be subject to rigorous, continual, critical examination to handle social change and improve the suitability of the original design model to local circumstances. Social network analysis may facilitate visualizing complex relationships between objects (people to people, people to land, and people to particular data types or items). Social network analysis and data mining may reveal relationships that were not identified in the initial model or uncover relationships that emerge as social change takes shape. It may also identify errors and inconsistencies in a land records system.

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