

Applying Topic Maps to SNA for Thailand healthcare activities

Shoichiro HARA^{1*}, Motomu NAITO²

¹Center for Integrated Area Studies, Kyoto University, Japan

²Knowledge Synergy Inc., Japan

Non-communicable disease (NCD) is the primary interesting in health. NCD is non-infectious among people such as autoimmune diseases, heart disease, stroke, cancers, and more, then life style and social environment are essential factors to develop NCD. The social-ecological monitoring and analysis are important for evidence-based public health decision making with the aim of reducing the emerging epidemic of NCD. Social network analysis (SNA) is a method to visualize and analyze webs of social-ecological relationships.

This abstract will report the current state of our research on social network analysis (SNA) to health promotion activities (HPA) in tambons in Thailand. A tambon is a local government unit in Thailand, and primary health promotion activities are carried out in this level. In 2009, there are more than 7000 tambons. Data sources of our SNA come from the precedent project called RECAP (Rapid Ethnographic Community Assessment Process) and the ongoing project called TCNAP (Thailand Community Network Appraisal Program), these were carried out by Thai Health Promotion Foundation and Khon Kaen University.

In SNA, a network consists of nodes and arcs. Nodes represent players of social webs such as persons and civil groups, and arcs represent relationships between nodes such as leadership and kinship. At present, 4 topic types (nodes) and 18 association types (arcs) are defined.

Each type has any number of instances. Topic Maps is introduced to implement SNA. Topic Maps is information technology for constructing knowledge network using subjects (nodes) and relationships (arcs) between subjects.

Topic Maps have good affinity with SNA. It can implement SNA data straightly, and its applications have functions to display not only data itself but also graphical representation of the network. Topic Maps has query language called tolog which can retrieve nodes along arcs, count nodes and arcs from various perspectives.

Using Topic Maps applications, we have just developed topic maps of 8 tambons. The number is expected to be increased. Analysis is still in early stages, e.g., counting arcs according to a kind and visualizing them on a map as pie-charts to compare network structure between tambons, finding geographical distribution patterns of person/civil groups and so on. Topic maps are expected to share and link various information such as qualitative, spatial, temporal and statistical information.