

## Spatial Structure of Socio-economic Functions: A Case Study of Ywatharyar Village, Minbu Township

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### Abstract

Many geographical studies emphasize on the structural development of settlement area by means of land use with particular attention given to the urban areas. However, we would like to argue that socio-economic conditions of peoples living in the settlement area will revealed in terms of symbols. The structural development of a settlement area could be depicted by means of analyzing these socio-economic symbols. In this paper, spatial socio-economic structure of Ywatharyar Village located in Minbu Township is analyzed as a sample. Base map is created by using GPS. Socio-economic data are collected by field survey. Then, locational pattern of each socio-economic function in the village is found out by using distribution method, mean center, standard deviational ellipse, and Kernel probability analysis. Results show two points: (1) all economic functions are located near the center of settlement area along the major road. In addition, grocery shops are located at the newly extended portion of the settlement while services and manufacturing are still remain in the old village center; (2) different kinds of social function have varied location characteristics. Some like monastery, pagoda and underground water supply system are located at the periphery of settlement. *Dhamayon* needs dispersed location in the village. On the other hand, electricity supply and telecommunications system are concentrated in the old village center. Education facilities and hospital are located in the periphery of village where it has good accessibility and large space.

**Key Words:** Socio-economic functions, mean center, standard deviational ellipse, Kernel probability

### Introduction

Human being lives on the earth surface in various forms. Rural people from North America, parts of northern and western Europe, and in Australia and New Zealand live apart, with houses and farm buildings located on land that individual work. In other parts of the world, however, people lives in nucleated settlement named as village or hamlets. Actually, village and

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hamlets were settlement norm, although with size and form that varied by region and culture (Rubenstein, 2003).

Whatever the settlement size is it has a good deal of trading, buying and selling of farm goods and family crafts for other needed commodities, and at least some part of village area is used for non-residential purpose. With development of trade between two or more rural settlement areas, new physical characteristic is occurred in its structure as their inhabitants engage in additional types of occupations. Settlement becomes difficult to self-sustain. Selling and buying places will be developed along the main street and road leading to the other settlements. The location of villages relative to one another becomes importance as the once self-contained rural settlement become towns and cities engaged in urban activities (Fellmann, et al., 1990). With the increasing population the economic activities become more numerous and complicated. Social affairs could be performed together in the village. To sustain and facilitate the local residents, social-spaces like, school, clinic, churches, and monastery are being constructed. Socio-economic facilities, on the other hand, attract people to live around those facilities. Socio-economic conditions and settlement structure are gradually developed in such an interdependence manner.

Most of the geographical studies emphasize on the above structural development of the settlement area by means of land use. In addition many studies are focus on urban areas. Of them, concentric zone theory, sector theory, and multiple-nuclei theory are three classic models (Norris, et. al, 1982). However, we would like to argue that socio-economic conditions of peoples living in the settlement area will revealed in terms of symbols. Churches will be located where Christians are living. Services activities which need wider market area will be located at the most accessible area of the settlement. Thus, these symbols are closely related to the structure of a settlement area. The structure of a settlement area could be depicted by means of analyzing these socio-economic symbols. Therefore, this paper tried to analyze of socio-economic functions (symbols) found in Ywatharyar Village to solve the following problem.

### **Problem**

How is Ywatharyar Village structured in terms of socio-economic functions?

### **Data and Methods**

To understand the socio-economic structure of Ywatharyar Village, it is necessary to have a precise base map, and correct locations of each economic and social facility. Base map was derived based on GPS survey. By using *CE Trimble*, location of each road segment of the study area is digitized and changed into *ArcView GIS* software format (.shp). Based on this based map, socio-economic field surveys are conducted. Derived socio-economic data are digitized by taking references to road blocks.

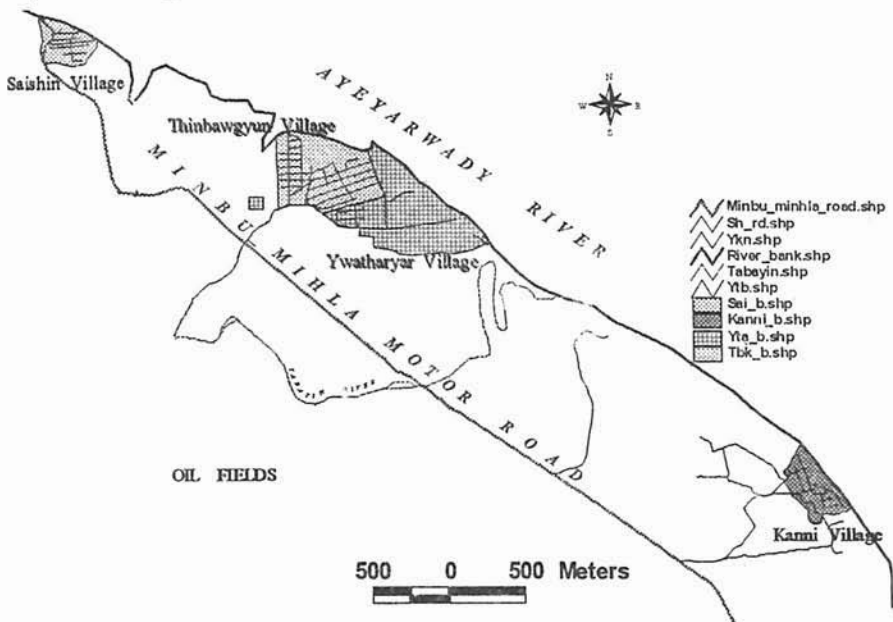
Among socio-economic functions, only visible symbols are use in this study. Economic functions are gathered to include grocery shops, services, and manufacturing. On the other hand, social functions include religious facilities (monastery, *Dhamayone*, and pagoda), electricity supply, water supply system, and telecommunications, education and administration.

The structure of a settlement area is reflection of both that settlement unit's location and its relationship with other units in the larger system of which all are apart. Moreover, the functional structure of that settlement area influences its current size and growth prospect (Fellman, et al., 1990). Therefore, second part of the paper deals with the spatial structure of Ywatharyar Village in the Ywatharyar Village Tract. Relationship between socio-economic functions and spatial structure of Ywatharyar Village is examined in third section. Then conclusions are drawn in last section.

### **Spatial Structure of Ywatharyar Village Tract**

Ywatharyar Village Tract is located in the southeastern part of Minbu Township, Magway Division. Although village tract's area is distributed in both side of Minbu\_Minhla Motor Road, settlement areas are located between Minbu\_Minhla Motor Road and Ayeyarwady River. Ywatharyar Village Tract consists of three villages namely, Ywatharyar, Saishin, and Kanni Villages. Thinbawgyun Village located on an island of Ayeyarwady River was destroyed by changing deep-channel course of Ayeyarwady. Some peoples from former Thinbawgyun Village were relocated in the place adjacent to Ywatharyar Village. Relocation project was started since the 1990s, and completed in 2002. Ywatharyar Village and Thinbawgyun Village are located at the center of the Ywatharyar Village Tract. Saishin Village is located in the Northern part while Kanni Village is located at the Southern part of study area (Figure 1). Village Tract Peace and Development Council (VPDC) is located

at Ywatharyar Village and Chairman is also living in the same village. Members of the VPDC are living in the rest three villages and manage their respective village.



Source: Based on GPS survey and topographic map (quarter inch).

Figure(1) Location of study area

In addition to its central location, Ywatharyar Village was a thriving Ayeyarwady River Port until the late 1990s. Many villages locate in the southeastern parts of Minbu District used Ywatharyar Port to go Magway and other large towns located along the Ayeyarwady River. In the last decade, however, changes are occurred in the transportation of Ywatharyar Village. Deep-channel of Ayeyarwady River was changed and sand bar are appears near the bank of Ywatharyar Village in the late 1990s. As a result, ship and boat could not directly enter to Ywatharyar Port.

Moreover, Magway Bridge was completed in 2002. As a result, people formerly depending on the Ywatharyar Port are changed their course from waterway to motor road which can reduce travel time and could safely

travel through out the year. Therefore, Minbu-Minhla Motor Road becomes important in transportation. Differ from ship bus could stop any place on the road. Therefore, passengers from the villages do not need to gather at Ywatharyar Village which is located about a one Kilometer away from the Minbu-Minhla Road (Figure 1).

Based on the above changes the economic and social role of Ywatharyar is greatly changed in the last decade. However, as a political and economic center of Minbu's southeastern villages it has many social and economic functions.

Before analyzing the spatial structure of a village, it is necessary to understand the relative positions and functions of Ywatharyar Village compare to adjacent town and villages. Figure (2) shows the numbers of household and populations of Ywatharyar and its adjacent villages. Since Ywatharyar is administrative center of village tract, it has largest number of population and household. Thinbawgyun Village is the second largest village while other two are relatively small. Three economic activities found in those villages are varied related to its population size and functions.

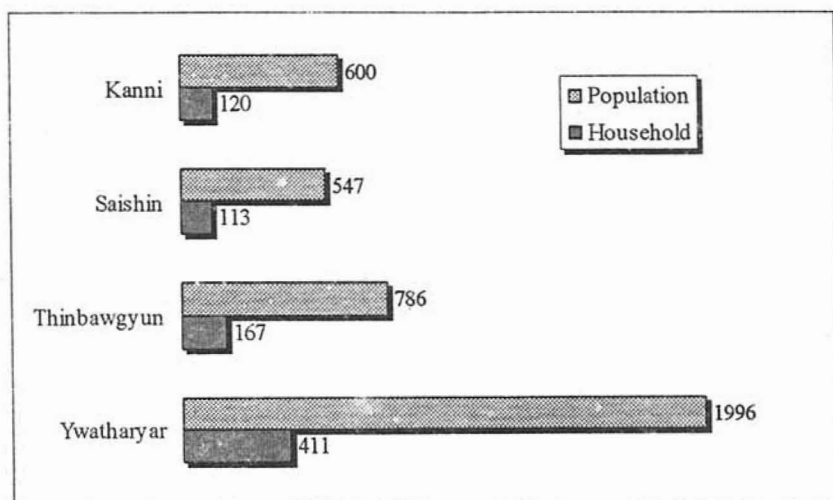


Figure ( 2 ) Numbers of household and populations in the Ywatharyar and its adjacent villages

Source: Village Peace and Development Council of each village (2004).









































