THE PATTERNS OF SOCIAL INTERACTION AND INTEGRATIVE MECHANISMS IN COMMUNITIES IN THE NORTHERN BANGKOK EXTENDED METROPOLITAN REGION: A CASE STUDY OF PATHUMTHANI PROVINCE

Daranee Thavinpipathkul\textsuperscript{1}, and Luksanawadee Tanamee\textsuperscript{2}

Abstract

Social interaction refers to the communication among people within one particular area. This act can be recognized and done through simple talk or even through equipment that is commonly used these days, such as televisions, radios, telephones, and all kinds of transportation. Activities also help people to know and become a part of a community, by working and being involved in the same things, such as traditional community festivals, community development, and so on. These activities should be done continually as part of the system of social interaction.

\textsuperscript{1} Associate Professor, Department of Urban and Regional Planning, Faculty of Architecture, Chulalongkorn University, Thailand.

\textsuperscript{2} Ph.D. Candidate, Department of Urban and Regional Planning, Faculty of Architecture, Chulalongkorn University, Thailand.

Social integrative mechanism means the existence of those who take part in running or working in a communication role, which leads to the interaction among people within a community; social control mechanisms such as laws and norms, organizations or groups within the community, including interest groups for economic or social benefit; communication, transportation, and meeting places such as a community centers. The definitions above are used to explain the patterns of social interaction and integrative mechanisms in communities in the northern Bangkok extended metropolitan region. Prachathipat, Klong-Song, Chiang-Rak-Yai, and Pued-Udom in Pathumthani province were used as case studies. Research results reveal that communities in the northern Bangkok extended metropolitan region are transitioning from rural to urban type at different paces and to different degrees due to physical factors, i.e., geographical setting, location, distance from the city, and accessibility. In addition, the differences are also due to socio-economic factors, i.e., age, sex, religion, educational level, occupation, income, and duration of stay of community residents, who are mostly comprised of two groups: old-timers and new-comers. In conclusion, three types of communities revealing different patterns of social interaction and integrative mechanisms are found in this area. The first type consists of communities exhibiting low-intensity land use, mostly as residential areas, located on agricultural land. Almost all of the residents are old-timers and have primary social interaction within the family and among friends. The level of social integration is high and integrative mechanisms are informal. The second type is communities with more intense and
diverse land use than the first type. The old-timers in these communities begin to have “urban type” social interactions, with rather high levels of social integration through both formal and informal integrative mechanisms. The newcomers in these communities engage in “urban type” social interactions just to gain convenience and safety in living and working. The third are communities with highly intense and diverse activities and land use. Among old-timers in these communities, there is almost no trace of “rural type” social interaction, while integrative mechanisms are both formal and informal. Among newcomers, social interaction is the same as in the second type of community with a low level of integration and mostly formal integrative mechanisms.

Introduction

The changing communities in the area that are seen in the northern Bangkok extended metropolitan region are examples of the urbanization phenomenon. This area is linked to Bangkok and even takes part in some of its activities. The expanding built-up area from the big city continually extends into the adjacent areas due to the migration of people from the urban area to this suburban area. This is the result of the first to the ninth National Economic and Social Development Plans of Thailand, which designated Bangkok as the center of all, or the “primate city”. The ninth plan (2002-2006) promoted the development of the transportation system throughout the region, which lead to an increase in the population of the nearby provinces, with Bangkok as the center of this expansion. The urban development moved into the northern Bangkok extended metropolitan region, where land is mostly suitable for agricultural activities. McGee (1991) identifies this dynamic area of economic and social change as “Mega-urban Region Type 2”. The need of land for manufacturing purposes has brought about a change in land use in nearby provinces such as Ayutthaya, Pathumthani and Singhaburi (Payanan, 2538: 30). Today, these areas are characterized by extremely high levels of economic diversity and interaction and a high percentage of non-farm employment. Industrialization and rapid development are affecting the lives of people in this region and are also drawing in large numbers of migrants.

Figure 1: The direction and development plan for the years 1960, 1970, 1980, 1990, and 2000

Figure 2: The direction and the changing of land usage in the year 1990 and 2000
This development has led to changes in the physical, social, economic, and population aspects in that particular area. McGee (1991) states that the development has created major changes in communities in the rural areas, as they have had to adapt themselves to being more urbanized and more globalized. The changes in land use and land value caused by this development, together with the changes in communication and transportation that connect the urban with the rural areas, make the distinction between rural communities and urban communities unclear.

This article explains the urbanization phenomenon on the basis of four sample communities in Pathumthani provinces: Prachathipat, Klong-Song, Chiang-Rak-Yai, and Pued-Udom. These four areas are located in different geographic settings. Pathumthani is a province in the north of Bangkok. Urban sprawl, in terms of an increasing number of communities, has taken place in recent years. The study aims to reveal the patterns of social interaction and integrative mechanisms in order to explain the role of each sub-function of this social system according to the Ekistics concept (Doxiadis, 1976). The mechanisms of social interaction and integration will also explain the combination of the social aspects in each community that has led to its development. The study of community change is based on the bi-polar approach, which shows different sides of two social relationships: rural and urban (Tonnis, 1877; Durkheim, 1933; and Redfield, 1941). According to Tonnis (1877) rural society, or Gemeinschaft, is a basic type of social group, consisting of stable and intimate relations, mutual understanding, mutual support, kinship, and neighborhood, while urban society, or Gesellschaft is characterized by complex society and formed by interests.

The change from one type of social organization to the other without a loss of stability can be observed along the rural-urban continuum. Geographic change will lead to different unique characteristics of social interaction and integrative mechanisms. According to Patrick and Wickizer (1995), the change of physical setting of the area creates specific patterns of social interaction and social integrative mechanisms in that particular area. The change at the individual level will affect every part of the community system (Rose, 1992). This calls for integration of the people and social activities through informal integrative mechanisms in rural communities and formal integrative mechanisms in urban communities (Durkheim, 1893). These mechanisms take the form of the existence of those who take part in running or working in the communication role, which leads to the interaction among people within the community; social control mechanisms such as laws and norms and organizations or groups within the community, including those interest groups for economic or social benefit; communication, transportation, and meeting places such as community centers.

The study was carried out through survey research utilizing structured interviews to collect cross-sectional data on four communities. Units of analysis in the study are the individual, the household, and the community. The hypothesis of this research is that different locations and geography in the northern Bangkok extended area generate different types of social interaction and different social integrative mechanisms among the various groups of people in the area.
Characteristics and Patterns of Sampled Communities in Pathumthani Province

Pathumthani is one of the central provinces \((\text{changwat})\) of Thailand. Neighboring provinces are Ayutthaya, Saraburi, Nakhon Nayok, Chachoengsao, Bangkok, and Nonthaburi. The province is located directly north of Bangkok and forms part of the Bangkok metropolis. In many areas, the boundary between the two provinces is no longer noticeable, both areas being equally urbanized. The distance from Bangkok is about 27.8 kilometers. The expansion of Bangkok and people makes these two provinces seem to be a part of each other. This characteristic is usually seen along the major road (Phahonyothin Road) and nearby arterial routes. Four communities in Pathumthani Province were chosen as case studies. Their characteristics are summarized in Table 1.
Table 1: The four case studies: basic information

| Nature                      | Prachathipat                                                                 | Klong-Song                                                                 | Chiang-Rak-Yai                                                               | Pued-Udom                                                                 |
|-----------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Nature                      | Flat land located in the area of Rangsit Canal.                              | Flat land that parallels the Klong-Song.                                     | Flat land that expands from the canal side to the main road.                  | The old rice field that has Klongsipsam passing through it.                |
| Requirements                 | Varieties of buildings, apartments, house, and townhouses are built near factories | Covering the area on both sides of the canal. It is located close to the shopping mall and industrial areas. There are many dormitories and apartments for workers around here. | The canal is built near houses and there are some available spaces left. Close to the Rangsit Campus of Thammasart University and similar existing built-up areas. | A factory is located here, and there are similar existing built-up areas.   |
| Physical Location           | Distance from connecting line of Bangkok is 7 – 10 km.                       | Distance from borderline of Bangkok is 7 – 10 km.                            | Distance from borderline of Bangkok is 10 – 20 km. Connected with the main road number 347 | Distance from borderline of Bangkok is more than 30 km. Connected with the main road number 3312 |
| Network                     | Close to the main road and arterial road (Rangsit – Nakhon Nayok Road)       | Close to the main road and arterial road (Rangsit – Nakhorn Nayok Road)      | Connected with the main road number 347                                       | Connected with the main road number 3312                                    |
| Size                        | Big                                                                           | Big                                                                           | Small                                                                       | Small                                                                       |
| Size                        |                                                                              |                                                                              |                                                                              |                                                                              |
| Economic                    | Various occupations and income                                               | Similar occupations with variation in income                                 | Similar in both occupation and income                                          | Similar in both occupation and income                                        |
| Social/ population          | Heterogeneous population with various occupations as most people come from different backgrounds. | Heterogeneous populations that are similar in occupation and most people come from different backgrounds. | Homogeneous population and occupations as most are local people.               | Homogeneous population and occupations as most people are local and have kinship relation. |
1. **Prachathipat Municipality**

**Physical Settings**

This municipality is located in Tambon Thanyaburi with an overall area of about 20.80 square kilometers covering mainly the lowland area. The arterial road number 305 or Rangsit–Nakhorn Nayok Road that passes through the municipality separates this area into two parts.

This area is in a lowland area that is normally flooded every year in the rainy season. As a result, economic and social development have taken place slowly. The local people normally use their land for agricultural activities. In the present day, industrial, commercial, and real-estate development are taking place in the area, which has caused people to turn their backs on farming. There are flats and houses for the workers throughout the area. Houses that used to be built along the river are being now constructed along the main road. The livelihood of local people has
started to depend on non-farm activities. The townhouse is the most popular type of building today, as people can both live and work in it. Shops and mini-marts can be found everywhere. Convenience stores that stay open 24 hours a day, such as 7-Eleven or midnight food courts, have started to take on an important role. Many apartments, rental houses, and dormitories have been constructed. None of those who used to make a living as farmers continue to do so. Local people have started to lose their land to outsiders. In the past, land prices in this area were quite low, inviting middle-class people to migrate from the urban areas to build their houses, the investors to build their factories, and the workers to move over to this area, as well. The samples are the 40 households in the area of Prachathipat Moo 3 Soi 60-43. This area is located in the southern part of the Prachathipat municipality, close to the Rangsit canal, covering an area of 400 rais. The northern part of this area is connected with Rangsit- Nakhorn Nayok canal. The southern part is linked with Tambon Khu-Kod. The western part is connected with a canal that parallels Phahonyothin Road, and the east is linked with government-owned land. The government planned to construct a road that would pass through the municipality, so that people can take advantage of buses and public transportation. In the southern part, connected with Tambon Khu-Kod, an industrial area, the government wants to construct a road and improve overall facilities, as it will be a center of the tambon and everyone, including high-income people, can use it. Seventy-two percent of the people who live here have spent less than 20 years in this area and 55% of the overall population are not local people. These people are mainly Bangkokians who have moved to this area because of the low price of land and houses.

The Patterns of Social Interaction and Integrative Mechanisms in Prachathipat

The way of life for people in this community can be classified into two patterns. Those who are migrants, whose main purpose for living in the community is to be near their place of work, have little or no interaction with the locals. They value their privacy and only interact with their neighbors. This relationship seems to be in terms of friendship, not kinship. The other group is those migrants who come with their families with the intention of living in the community. This group usually stays in this area for more than ten years. The reasons behind the move are cheap land and a good environment. These people have more interactions than the first group, as they need to contact and to communicate with both their families who live in other provinces and also the community itself. The continuation of activities of groups inside and outside the community, as well as community development campaigns, makes these people interactive. The integration that appears in this group is more likely to be formal. However, there still are some informal integrative mechanisms in the community, e.g., religious- and community- development activities and group meetings to solve community problems.

Vertical interactions usually take formal forms and tie to those organizations inside and outside the community at a higher level. Horizontal interactions usually occur in informal forms and tie to people in the community. Communications of residents in Prachathipat are made through modern
technology, e.g., mobile phones, motorcycles, and cars.

2. Klong-Song Municipality

Physical Settings

The Klong-Song Municipality is located in the Klong-Luang district, covering an overall area of 3,800 rais. The total distance from Phahonyothin road to this area is 7 kilometers. The location is a form of flat land that parallels the canal, covering an overall distance of 16 kilometers.

The main characteristic of this area is high accessibility through the canals and the main roads that connect every part of this area, e.g., Rangsit- Nakhorn Nayok Road. This helps people be able to get in and out of the area more easily in all directions. The trip to Park Rangsit Mall is only three kilometers long. Most of the land in Klong-Song used to be rice fields. When development first came to this area, these land were turned into residential areas, consisting of various forms of building owned by both public- and private-sector concerns, which serve as accommodation for factory workers. The expansion of land for manufacturing into this area has been occasioned by the cost of land, which was every cheap, and the available labor force, as local people periodically have no agricultural work to do. Within a radius of three kilometers from the center of this area, there are only a few who are still farmers. People who live in this area are both locals and migrants. In terms of culture and behavior, there are no special or unique characteristics. The common activities that are usually seen are religious festivals and other important traditional activities.
The Pattern of Social Interaction and Integrative Mechanisms in Klong-Song

Because it is located quite far away from the city but with good transportation, this community interacts easily within the community and with other nearby communities. In addition, given all the facilities in the area, people in this community have no need to go out or interact with outsiders. The minimal interaction with outsiders causes people in this community to engage in few economic activities with outsiders, thus increasing integration in the communities and among nearby communities. Even though there are many sources of employment in this area, the people who work here are normally locals, with only a few of them being migrants. As a result, there is no diversity of population within the area itself.

The people who live in this area are both locals and migrants. The locals are usually old-timers who have lived in the area for longer than 20 years. They normally know each other quite well, and they may be either close friends or relatives. These people often help each other and communicate a lot. The pattern of social interaction for these people seems to be very informal, as they are familiar with each other. The leader of this community uses personal relationships to activate social development. This group of people normally works in the city of Pathumthani or Bangkok, as there is not much work in the local area. Commercial, educational, and entertainment activities from the outside area or from the city are more attractive for these people. As a result, there are some interactions between people from inside and outside the community.

The most important integrative mechanism for this community is the family relationship. Activities that are important are the organizations and cooperative groups for helping members both socially and monetarily. The pattern of interaction usually takes an informal form, as most people know each other quite well. The means of communication and transportation are quite high-technology, using mobile telephones, motorcycles, and private cars, so that the interactions between the people become easier than they were in former times. Public transportation, such as buses and minibuses, are available for those who do not own vehicles.

Migrants, on the other hand, have the main purpose of coming to work only. They actually have their land and family in other provinces, e.g., in northern, northeastern, or southern Thailand. Most of them work in the factories and only need accommodations for staying after work or to be close to the center of the commercial area. The length of stay in the community is less than ten years. The interactions among people in this group are generally of the urban type. The mechanism of integration for this group is the community leader. These people will stay in the area for just a short period, living in rented houses, flats, and apartments. When there is a call from their home for farm work or for traditional festivals, these people will leave their residences and go back to their hometowns, not minding the associations with the locals. The small amount of interaction made by this group occurs among those who have their houses close to each other or among those who move in during the same time or originate from the same hometown. The way of communication and transportation is quite high-tech. People contact each other and
those at home over the phone, which reduces the number of trips they make to their hometown. Those who own vehicles drive or ride to work, while others can use public transport to go to work.

3. Tambon Chiang-Rak-Yai

Physical Settings

Tambon Chiang-Rak-Yai is located in the Sam-Kok District, covering an area of 10.51 square kilometers, or about 5,114 rai. The location is about fourteen kilometers from Bangkok along Phahonyothin road, and five kilometers from the Chao-Phraya River. Two canals surrounding the area make it an island. Since the island floods annually, the

Figure 8: Tambon Chiang-Rak-Yai

development has been slow, and most of the land in this tambon is still undeveloped. Agricultural activities are the most important source of livelihood in this community, and one finds both land and hydro farming. Spaces between the houses are used for growing plants and vegetables, and houses are commonly built in groups next to the canals and the river. In the area close to the main roads, the construction of apartments and houses is under way. The slow growth of construction is the result of geographic location. As there are many canals and a river cutting through this area, people commonly use boats as their main mode of transportation as most of the people work as farmers, fishermen, sugar factory workers, and shrimp farmers and like to have the river or canals cutting through their land. But when development approached, people started to use the road as the major transportation route, because it made it easier to get to town. As a result, people started to change their way of life, especially their livelihoods. They started to find work outside their area or to work in factories. Statistics show that the number of people working in factories has
reached 75% of the population, mostly consisting of old-timers in the area with a few migrants from others provinces. As a result, the people know each other very well and tend to be related. The way of life is more rural, and most people are middle aged or older. In addition, teenagers and youngsters often leave their land and move to work close to the city. These people will only come back to meet their families during the festivals or vacations. In Tambon Chiang-Rak-Yai, there is normally the old special festival of "Tak-Bart-Phra-Roi". This festival has been around for the last 80 years and continues to be popular with the local people.

The Pattern of Social Interaction and Integrative Mechanisms in Chiang-Rak-Yai

Tambon Chiang-Rak-Yai is more than 10 kilometers away from the main road with each community linked together by the arterial road. The population density in this area is still low, as space for agricultural activities is still important for every household. Construction is commonly in the form of single houses with one or two storeys, or houses on stilts. The reason for this pattern of housing construction is the flooding that occurs in most years. Convenience shops and stores are located close to the residential areas near the road. Accessibility to the main and arterial road is low due to insufficient transportation services. There are a limited number of health-care facilities, schools, work places, and market places; so people need to share these facilities between communities, unlike the temples, which are found everywhere. The community's

Figure 10: Physical setting in Chiang-Rak-Yai case study

environment is quite good, with low-density built-up areas and lots of open space. With this kind of spatial setting, people who live in the area commonly come from the same background, with just a few from other provinces. Most of the people have lived in the area for more than 30 years, which makes most of them very familiar with each other; thus, the activities in this community are more likely to be of the rural type. Social interaction and development activities occur through kinship. People help each other because they are members of the
same family rather than being duty bound. The main integrative mechanism is the old people or those who are held in high regard or respect by others. The level of cooperation within the group is high and well established. People in this community especially the elderly, do not leave their land or travel a lot, as transportation is inconvenient. This results in low levels of social interaction with other communities as well as with the big cities.

The other group of people in the community consists of those youngsters who have lived in this area since they were born and have known each other very well since their grandparents’ time. These people are still young and often work in factories or are employed by big shopping malls or shops. This group of people shows high levels of social interaction with the big city. On the other hand, interactions between them and the rest of the community are quite limited, as the youngsters have to work outside the area. They are also very up to date in terms of technology and equipment; for example, most of them own mobile phones, modern furniture, and private cars.

4. Tambon Pued-Udom

Physical Settings

Figure 11: Tambon Pued-Udom

Figure 12: Physical setting in Pued-Udom

Tambon Pued-Udom is located in the west of Lam-Luk-Ka District, covering an overall area of 16.33 square kilometers on main road number 3312 and Klong 13, which separated it from Phahonyothin Road.

The geographical characteristic of this area is mainly flat land with flooding throughout the year, and three irrigation canals cutting through it. This makes the area suitable for agricultural, especially for growing rice and other crops. Most of the land is flat, and 90% of the land is used for growing rice. The best mode of transportation is by boat.
Canals and the main road are two important factors that have made development in this area possible. These two modes of transportation help people to get close to each other, especially Klong 13, which is also an irrigation center for those who live around here.

The people in this tambon formerly used the canal as their primary means of transportation, together with the Lam-Luk-Ka Road. In the past, this road was very small and unpaved, but after the implementation of the Development Plan in this area, the road became main road number 3312, connected to Phahonyothin road, covering a distance of 35 kilometers. This new road cut through the western part of the tambon and made it easier for people who lived in this area to travel to Bangkok, Nakorn Nayok and Chachoengsao. This community is still considered countryside, with houses scattered on farmland in groups of 3 - 4 houses, along the roads by the canals. With approaching development, the community has not changed much, as its people still stick to their farming lifestyle. There are only small-scale economic activities in this area: grocers, bicycle repair shops, gasoline distributors, small food shops, and a Sunday market. Eighty percent of the population in the community work as farmers. The average household income is about 6,000 baht/month. There is only one factory in the area; it employs 1,200 workers. There is a mix of cultures in this society, as the three main religions, Buddhism, Christianity, and Islam, exist side by side without any conflicts in the community.

The Pattern of Social Interaction and Integration Mechanisms in Pued-Udom

Most of the people in this community are Muslim; there is not much variety in social lifestyle, activities, and culture. The people who live in this area and the surroundings often use services from outside the area or even from Bangkok itself.

Most of the people have lived here for more than 30 years and know each other very well through kinship and friendship. Due to their shared Islamic faith, these people have become even closer to each other, as there are many activities required by their religious beliefs. The mechanism of integration in this community is the elders or the religious leaders, who act like middlemen for all activities. Most of the people work within their area as farmers or workers in the factory. This leads to low levels of interactions between people in this community and others, especially with the big city. The study shows that there are a very small number of people who make trips to Bangkok, as they deem it unnecessary.

Conclusion of Overall Pattern of Social Interaction and Integrative Mechanisms in the Communities in the Northern Bangkok Extended Metropolitan Region

The results of the four case studies indicate that the communities in the northern Bangkok extended metropolitan region are changing from rural to a more urban way of life according to their geography, their location, and the distance of their community from the big city.
Communities that are close to the big city have high concentrations of all kinds of activities within the area itself, are usually located close to the main roads, and have access to many facilities in communities that are farther away from the big city. The variety of activities decreases where the main livelihood is agriculture. Besides these spatial factors, other influencing factors are age, gender, religion, education, occupation, and income of people in the communities. These factors and their relations are shown in diagram 1.

Diagram 1: Physical, Social, and Economic Factors and Relations of Social Interaction and Integrative Mechanism

The research results reveal that communities in the northern Bangkok extended metropolitan region are moving from rural to urban type at different paces and degrees due to physical factors, i.e., geographical setting, location, distance from the city, and accessibility. In addition, the difference is also due to socio-economic factors, i.e., age, sex, religion, educational level, occupation, income, and duration of stay of community residents, mostly comprised of 2 groups: old-timers and new-comers. In conclusion, three types of communities revealing different patterns of social interaction and integrative mechanisms are found in this area. The first type consists of communities with low-intensity land use, mostly as residential areas, located on agricultural land. Almost all of the residents are old-timers and exhibit primary social interaction in the family and among friends. The level of social integration is high, and integrative mechanisms are informal. The second type are communities with more intense and diverse land use than the first type. The old-timers in these communities are beginning to show "urban type" social interactions, with rather high levels of social integration through both formal and informal integrative mechanisms. The newcomers in these communities have "urban type" social interactions just to gain convenience and safety in living and working. The third type are communities with highly intense and diverse activities and types of land use. Among old-timers in these communities, there is almost no trace of "rural type" social interactions, while integrative mechanisms are both formal and informal. Among newcomers, social interaction is the same as in the second type, with low levels of integration and mostly formal integrative mechanisms. Their characteristics are summarized in diagram 2.

Diagram 2: Continuum movement from rural to urban in transitional period
Conclusion

The results of this study of social interaction patterns and social integrative mechanisms in the communities in the northern Bangkok extended metropolitan region indicate that these communities with various physical settings and different paces of movement from rural to urban context are in a transitional period, resulting in mixed characteristics of rural and urban communities. Hence, they need unconventional development policies, different from those applied to urban communities in municipal areas or from those applied to rural communities in remote rural areas. The research results reveal that, even though each community has its own unique characteristics, they all have one thing in common which binds people together, i.e., religious institutions. Since all religious activities help generate social interaction and social integration, the campaign to increase participation in religious activities should be promoted by the government. This will enhance existing primary and secondary social interactions and formal and informal social integration in the communities and will strengthen community sentiment and ties, so that sustainable community development can occur. The study has also found that there are generally two groups of people in the communities in this area: the locals, or the old-timers and the migrants, or the newcomers. In order to avoid conflicts between them, social interactions between these two groups should be intensified through increasing activities arranged at meeting places or community centers in the community.

References

In English

C.A. Doxiadis. 1976. Action for Human settlements. New York: Norton&Company.
Durkheim, Emile. 1893, 1933. The Division of Labor in Society. Translated by George Simpson. New York: Free Press.
McGee, T. G., 1991 The Emergence of Desakota Regions in Asia: Expanding a Hypothesis, in Norton Ginsburg, Bruce Koppel and T.G. McGee, The Extended Metropolis: Settlement in Transition in Asia. Honolulu: University of Hawaii.
Patrick, Donald and Thomas Wickizer. 1995. Community and Health. New York. Oxford University Press.
Poplin, D. 1972. Communities: A survey of theories and methods of research. New York: Macmillan.
Redfield, Robert 1941 The Folk Culture of Yucatan. University of Chicago Press, Chicago.
Rose, G. 1992. The Strategy of Preventive Medicine. New York: Oxford University Press. (http://www.rap.edu/html/concept/)
Thavinpipatkul, Darane. A Study of social Structural Change in Rural communities: A Case Study in The Central Region of Thailand.” Dissertation. Florida State University, 1983.
Toennies, Ferdinand. (1877). Community and Society (Gemeinschaft and Gesellschaft). The Michigan State University Press.

In Thai

Payanan K. 1991. An agricultural in Thai social research: Agricultural system, Department of Agricultural of Extension and Communication, Faculty of Agriculture, Kasetsart University.