A STUDY OF RURAL AREA IN READINESS TO ESTABLISH COMMUNITY INFORMATION ACCESS CENTER CASE STUDY : SAITHONG SUBDISTRICT, PAMOK DISTRICT, ANGTHONG PROVINCE

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ABSTRACT

The most important barrier to progress in rural areas is that they are starved of information. Therefore, the Thai government has a policy to encourage local authorities to establish community access centers. The purpose of this research was to explain the readiness for the establishment of community access center in Saithong subdistrict, a rural area of Angthong province. Two questionnaires were developed to assess the readiness of the community for the access center. One questionnaire was given to 657 local people in 8 villages, and the other was given to 50 community leaders and subdistrict officials. Data was also collected on the state of infrastructure. Statistical analysis used both descriptive and inferential statistics.

The study shows that rural people have different opportunities to access information depending on population background, infrastructure usage, computer knowledge, social status, and attitude. It also shows that in terms of information technology infrastructure, information, community support, and government policy the subdistrict was prepared for the access center. 85.2 percent of the respondents agreed that the subdistrict internet project could improve information access, and 79.3 percent agreed that the subdistrict administration organization should establish a community access center.

These findings suggest that the knowledge of local people and staff about information technology should be improved, and more modern books, documents and other information services are needed. It is important to encourage the participation and support of the local people, and also to encourage the local authority to give high priority to the project.

KEY WORDS : COMMUNITY READINESS / INFORMATION / COMMUNITY ACCESS CENTER / RURAL AREAS

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การศึกษาความพร้อมของชุมชนชนบท ในการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชน กรณีศึกษา : ตำบลสายทอง อำเภอป่าโมก จังหวัดอ่างทอง (A STUDY OF RURAL AREA IN READINESS TO ESTABLISH COMMUNITY INFORMATION ACCESS CENTER CASE STUDY : SAITHONG SUBDISTRICT, PAMOK DISTRICT, ANGTHONG PROVINCE.)

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บทคัดย่อ

อุปสรรคสำคัญต่อความก้าวหน้าในชุมชนชนบทได้แก่ความด้อยโอกาสในการรับรู้ข้อมูลข่าวสาร ดังนั้นรัฐบาลไทยมีนโยบายที่สนับสนุนองค์การท้องถิ่นในด้านการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชน งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาถึงความพร้อมในการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชนในเขตชุมชนชนบท ซึ่งใช้กรณีศึกษาที่ตำบลสายทอง อำเภอป่าโมก จังหวัดอ่างทอง โดยการวิเคราะห์ข้อมูลจากการสำรวจพื้นที่ศึกษา และสัมภาษณ์จากประชาชาชนในชุมชน 657 ตัวอย่าง รวมทั้งเจ้าหน้าที่และผู้นำชุมชน 50 ตัวอย่าง โดยจะเก็บข้อมูลในส่วนของโครงสร้างพื้นฐานในท้องถิ่นและข้อมูลประชากร และใช้การวิเคราะห์ข้อมูลเชิงสถิติทั้งเชิงพรรณนาและเชิงอนุมาน

ผลการศึกษาพบว่าประชาชนในท้องถิ่นมีโอกาสในการเข้าถึงสารสนเทศแตกต่างกัน ทั้งนี้เนื่องจากความแตกต่างกันทางด้านประชากร, การใช้งานโครงสร้างพื้นฐานสารสนเทศ, ความรู้เกี่ยวกับคอมพิวเตอร์, สถานะทางสังคม, และความคิดเห็น และพบว่าโดยส่วนใหญ่แล้ว ปัจจัยทางด้านโครงสร้างพื้นฐาน, สารสนเทศ, สังคม, และนโยบายของรัฐ ต่างมีความพร้อม โดยกลุ่มตัวอย่างร้อยละ 85.2 เห็นว่าโครงการอินเตอร์เน็ตตำบลจะช่วยเพิ่มโอกาสในการเข้าถึงสารสนเทศ และร้อยละ 79.3 สนับสนุนให้มีการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชนขึ้นที่องค์การบริหารส่วนตำบล

การวิจัยครั้งนี้มีข้อเสนอแนะว่า ชุมชนท้องถิ่นในเขตชนบทควรได้รับการส่งเสริมในเรื่องเกี่ยวกับการเพิ่มความรู้ทางด้านเทคโนโลยีสารสนเทศให้ประชาชน และเจ้าหน้าที่ชุมชน, ด้านอุปกรณ์คอมพิวเตอร์เพื่อบริการประชาชน รวมทั้งหนังสือและสื่อสารสนเทศอื่นๆที่มีบริการอยู่ให้มีคุณภาพและทันสมัยมากขึ้น สิ่งสำคัญที่ควรคำนึงถึงก็คือความรู้สึกเป็นเจ้าของและการมีส่วนร่วมของคนในชุมชนในการดำเนินงานโครงการ รวมทั้งการการให้ความสำคัญและการดำเนินงานภายหลังจากที่มีการจัดตั้งโครงการแล้ว

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CHAPTER I
INTRODUCTION

1.1 Statement of Problem

The development of information technology introduces country to the information technology society, which brings about quality of life cycle. Thus information technology is an important factor for country development. In Thailand, many public and private sectors have conducted studies and research in information technology to make more benefit and utilization for the organization.

But now consider at most people in Thailand who live in rural area in many provinces. There is not enough development in many aspects for the countryside area including information technology infrastructure development. This problem makes lack of information universal access and universal service. So this problem was called “digital divide problem”; which refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technology (ICT) and to their use of the internet for a wide variety of activities. Because of the digital divide problem, the IT-2010 policy of Thailand has content about community access center implementation that has been established in many countries. It was assigned in information technology development strategies.

So the communication channels that the government has to disseminate information to most people in the rural area are radio and television. Thus what the government can do in a short time is to spread the information to both of media without any interception, in order to make more benefit of information for people. The next thing that the government must do is to increase opportunity of people to get more information and knowledge to follow the change of world. The most important thing is to make people realize about advantage of information and utilize information for public and private sectors.

The establishment of information community access center is the one of many ways to disseminate much information to rural area. In the access center may have many kind of media and accesses of information such as internet, books, publicize documents, ect. The information access center may be established within village or subdistrict management office. People in community can access information such as news from the government, knowledge about agriculture, and many other categories. That will increase people knowledge and decrease digital divide problem. At present the government has started many project to solve this problem such as ICTs development project, IT laws development project, and subdistrict internet access project.

The important thing that must be considered is the real problem and condition of rural social, include the need, knowledge and opinion of people in each area, if they are ready for this development or not. Thus it's appropriate to study the problem in case of real condition of rural social include information access, opinion of social leader and people for analyzing problems for information infrastructure development in order to establish the community access center in the rural community. And the result is the model that the government can utilize and bring about the right way of information technology development policy in future.

1.2 Justification and Case Study

At presents, the opportunity of information access of people is the most important things to be considered. That is an important factor to develop knowledge and information society in Thailand and to solve the digital divide problem. It is cause the study about the readiness of community to establish the information access center. In this case, is to study about community in rural area includes people, community leadership, local organization and information infrastructure of the area. This research had selected the target area as Saithong subdistrict that is in Pamok district, Angthong province.

Saithong subdistrict is one of the local districts in Angthong province. The area is outside the municipality area. The site of Saithong subdistrict is in northern area of Pamok district and far away from district administration office about 5 kilometers

Saithong subdistrict has many conditions that can be an agent of local area in Thailand, The area is rural area, and there are local administration centers and social condition to support this study. And that would be suitable for a case study in this research.

1.3 Research Questions

1. How is the current situation of information access in Thai community in the rural area?
2. What are the involve factors that required to help the local people to access information?
3. Is the community ready to establish the local center for information access?

1.4 Objectives

1. To survey the current situation of information technology infrastructure and information access in community.
2. To survey the facilities of local members in information access.
3. To study the readiness in case of development of information access center in community.

1.5 Hypothesis

According to the Thailand government policy, the local authority is ready for establishing the community access center.

1.6 Scope of work

This research considers two important things. There are not only the current situation of information access in rural area, but also the operation of social

organization such as subdistrict administration organization that support development of information access center in community.

In this research have one case study. The scope of work is shown below:

1. The target area of this research is one of the rural community in Thailand. In Saithong subdistrict, Pamok district, Angthong province.

2. The topics of this study is about the condition of people's information access in rural area at present. That's divided into many issues including a kind of media, knowledge and interesting of people, appearance of information access, information technology infrastructure, the way to get information and also, the opinion that involve the development information access center in community.

3. Study about two groups of population, one is the local people in a community, the other is member of the local authority, such as a Kamnan(head of subdistrict) and the headman of a village.

4. The readiness in this study is the readiness in this field below

4.1 Physical condition : such as address of area, infrastructure.

4.2 Community : such as people(user), officer(administrator), community leadership and any condition.

4.3 Policy : such as government policy and budget.

4.4 Information : such as news, government notice, knowledge documents.

1.7 Expected Results

1. The state about the real state of people's information access in rural area, including opinion of people in information technology infrastructure.

2. To know about the completion of community organization to develop information access center in subdistrict area.

1.8 Benefits

1. The real condition of rural community for problems of information technology infrastructure in rural area.

2. As tendency to proceed program according to the national information technology policy in future.

1.9 Term Definitions

Information is data that have been shaped into a form that is meaningful and useful to human beings. (1)

Information Technology is the knowledge in products or process of any operation that based on technology of computer software, computer hardware, communication; muster and use of information in expeditiously for make more performance in aspect of production, service, administration, operation. Including for the sake of education and learning. That support for superiority in economy, commercial, quality of life and quality of people in society. (2)

Information Technology Infrastructure is communication networks, information technology, information, human resources, and include other factors that can be taken to make advantage to initiate the distribution of information thoroughly and comparable for people in every jurisdiction. (3)

Digital Divide, which can be broadly defined in terms of unequal possibilities to access and contribute to information, knowledge and networks as well as to benefit from the development enhancing capabilities of information and communication technology, have become some of the most visible components of the development divide. (4)

Subdistirct Administration Organization (SAO) means local organization that was established from the subdistrict council and subdistrict administration organization bill in 1994. This act made all subdistrict councils legal entities and enabled a number of subdistrict council to obtain the revenue required to change their status into subdistrict administration organizations (SAO). The SAO is under to

responsibility of the Ministry of Interior and governs the community using the resources and personnel of the community.

SAO is the local administration organization that not only has functions for govern working in local area, but also the management of other resource such as budget, infrastructure, and community development.

Community Access Centers (CACs) are a community service, social action, and/or educational facility that uses computers, the Internet and other information technology tools to provide a range of vital services for those who typically lack such opportunities. CACs provide access to free or low-cost computer-based/digital applications, hardware, networks, technology training and support programs.

CACs are a grassroots effort to bridge the technology gap by providing access and training to people in communities who, otherwise, would not have such access. In addition to providing access to terminals, CACs provide access to training for various computer skills and software programs.

The terms Haves and Have-Nots are borrowed from the social-policy arena to describe the gap in access to computers and information technologies, such as the Internet. Within in the context of technology access, the terms have become the consistent way to describe those who do and do not have access. (5)

CHAPTER II
LITERATURE REVIEW

The contents of this chapter are the definition, literature and other researches. There are few official researches or scientific document that involve about information technology infrastructure development in rural area and the information community access center. The most related articles are available in magazines, newspapers, publicize documentaries, seminar reports, journals and internet, such as Microcomputer Magazine, NECTEC Journal, Thailand's Investment Promotion Journal. Majority documents are unofficial or informal scientific research. However, Many articles are very interesting. They have contents about information technology infrastructure in rural Thailand, IT development in other countries and IT policy in Thailand. So the major gist of reviewed literature can be shown below.

2.1 Information Technology Approach

2.1.1 Definition

Human begin to know about scrape, draw picture to communicate, know how to record in paper and begin to know about sending paper. An American Indian use smoke to send a signal. These methods are in information system altogether.

The definition of information is "Data that have been shaped into a form that is meaningful and useful to human beings" (1).

However, Information Technology (IT) is a rather new and unstructured field that a standard definition of the term has not yet between established. Therefore, a search is made in the literature to find a workable definition appropriate for the context of this study. In the precedence of the Prime Minister's office regarding the promotion of information technology development year 1992 (2) had given the definition of the information technology below.

“Information technology is the knowledge in products or process of any operation that based on technology of computer software, computer hardware, communication, muster and use of information in expeditiously for make more performance in aspect of production, service, administration, operation. Including for the sake of education and learning. That support for superiority in economy, commercial, quality of life and quality of people in society.”

Currently there are many uses of accessories and information technology in many activities such as business office, industrial, commercial, finance, telecommunication services, public health, education and habitation(6).

2.1.2 Information Technology Components

In the components of information technology, It consists of many technologies that involve information. Kanchit Malaiwong(7) used to give the point of view of information technology components that consist of the following technologies.

1. Computer Technology : That related to hardware and software.
2. Database Technology : Related to collection, searching, retrieval.
3. Publishing Technology : In any forms. Not only for big publishing office, but also include desktop publishing.
4. Multimedia Technology : About integration of sound, picture, text in simultaneously processing and pack in same media.
5. Data Communication Technology : About the sending data and information from one place to another place.
6. Telecommunication Technology : About equipment and communication system such as copper line, fiber optic, satellite.
7. Office Technology : About accessories in office that involve data and information.

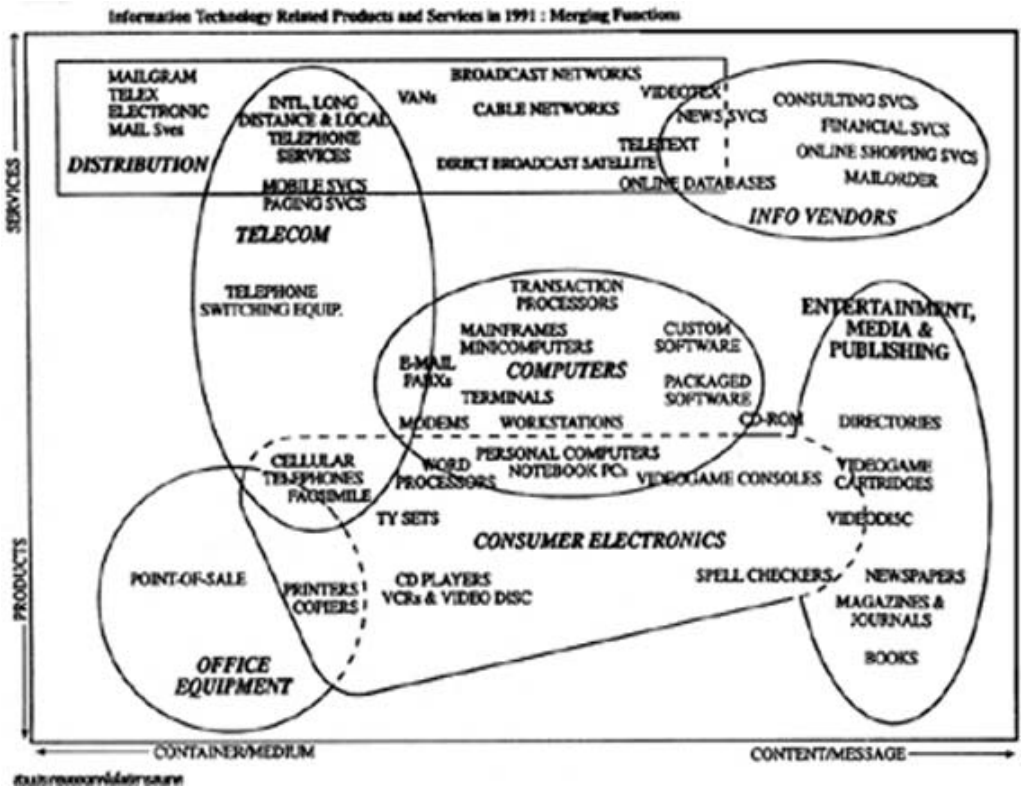

Figure 2-1: Information Technology Components (6)

From picture 3-1, information technology covers many topics of technologies. At present information technologies included in many branch of technologies such as a agriculture, material, medical, aviation and even nuclear technology. Therefore it can be said that a new era of the world is the information technology generation.

2.2 Information Technology Infrastructure Approach

2.2.1 Definition

The Thailand model law on information technology infrastructure development (3) had given the definition of the information technology infrastructure below:

The meaning of information technology infrastructure is “communication networks, information technology, information, human resources, and other factors that can be taken to make advantage to initiate the distribution of information thoroughly and comparable for people in every jurisdiction”.

From the definition, the information technology infrastructure can be in any form such as telephone line, radio and television, road, electric, teacher, newspaper sender, library or any place that can distribute information to people.

2.2.2 Information Technology Infrastructure Components

From the definition that can divide information technology infrastructure can be divided into four important components.

1. Telecommunication Networks : The important factor that make the universal access such and makes more information access ability. So the government should be made more support about this service.

2. Information Technology : The support of information technology to aid for applying for many works in order to help people can utilize the information technology infrastructure such as computer, internet and more. But the accessories of information technology are imported and cost much. That is obstacle to access information technology infrastructure for many people such as in rural area.

3. Information : The important factor that can establish knowledge society. Information can support and increase life quality of people.

4. Human Resources : It's important and necessary for develop information technology infrastructure. Thought three social factors from above are developed. But if there is no development of human, universal access cannot be established at all.

Beside four factors that are shown above, there are other factors that can utilize to distribute information in universal access for people in any area such as infrastructure in laws, precedence, and government policy.

2.3 Digital Divide Approach

2.3.1 Definition

The digital divide, which can be broadly defined in terms of unequal possibilities to access and contribute to information, knowledge and networks as well as to benefit from the development enhancing capabilities of information and communication technology, have become some of the most visible components of the development divide.(DOT Force : 2001)

The difference of information haves and have-nots is an important factor to initiate the gap of information access and acknowledge. That brings about different opportunity for information and communication access that are important tools for communicate between domestic society and international. And that is the door for immense information which unlimited frontier. Thus digital divide phenomenon is the result of the distribution of information technology that failed in universal access and universal service.

2.3.2 Digital Divide Levels

At present, digital divide means the overlap in information and knowledge in two levels.

1. The overlap between groups of domestic people that have different opportunities in information and knowledge access. The overlap may fall between groups of people that have some different characteristics such as metropolis or big city people and rural people, between the groups of people that is different in age or sex, between the differences in education level or in origin and culture. That includes the opportunity in information access of crippled people that may be less than general people.

2. The overlap between other countries that have information technology development in different level and form. The obvious overlap is between the prosper countries that are advance in economic and social, and the inferior countries that usually cover the poor country as poor in economic and social development.

2.3.3 Digital Divide Initial Factors

The factors that have effect to digital divide can be separated into four sectors.

1. Information Infrastructure

The difference of readiness in information infrastructure in each area causes difference opportunity in information and knowledge access. The indicators of information infrastructure that can measure digital divide level are shown below.

- Opportunity of electricity use : Because electricity is necessary for communication equipments and computer. Thus universal service of electricity is the basis factor of information access opportunity for each group of people.

- The use of telephone and mobile phone : the number that is usually used for measure digital divide level is the ratio of quantity of a pair of telephone line with 100 people (teledensity) and mobile phone growth. Due to telephone is basis accessory to connect into internet. Thus the growth of telephone use effects to opportunity for information and knowledge access from internet. And mobile phone is one of tools that is used for access internet too.

- Computer Penetration : When consider from ratio of computer by 100 people it can inform about information access from internet, e-book, CAI. Computer is the tool that necessary for access information in present era.

- Internet use : Internet is the tool that makes people access information spacious. Nowadays people apply internet daily tasks. The index that can consider to internet use is ratio of internet user by 10,000 people, internet host by 10,000 people .The quantity of internet user and internet host are show about the growth of internet use of people.

- The Use of Satellite : This is an advance step of communication and telecommunication infrastructure. It is faster and more comfortable than other equipments. The growth of satellite use is a tool that shows about the overlap of information knowledge.

2. Population Group

A difference of people characteristics is one reason that makes inequality in information access especially in domestic. There are many population oriented variables that can measure digital divide such as revenue, education level, origin and culture, family structure, language and more.

3. Geopolitics

The government policy is the factor that is important for increasing or decreasing level of overlap in information access such as the policy for freedom in information technology services can make more competition of vendor that leads to about cheaper equipment. That will increase information access opportunity.

4. The Other Factors

Besides population and social oriented factors, there are other factors that can be taken for measure digital divide of business unit in each country. The factors that are used in digital divide measurement such as organization size, business type, organization site, and more.

2.4 Community Readiness Theory Approach

2.4.1 Definition

For the meaning of readiness, there were a lot of definitions from many sources.

The Webster's Revised Unabridged Dictionary (1913*)* gave the meaning of readiness as the state or quality of being ready.

The Oxford Pocket Dictionary had given the meaning of readiness as ready or prepared state; willingness; promptness in action.

WHO had given the definition of readiness of which refers to the state which links effective preparedness to efficient relief; result from preparation, capacity for prompt action and an attitude of willingness.

Sawananon, D. (1969 : 49) said readiness means the situation for self – motivation for the feedback from any acts done.

Lasuwong, K. (1981 : 229 – 230) stated that readiness means the perfection of health and emotion where the health represent the body organs of which correspondence to the reaction of the thing. In the same way, the emotion for readiness refers to the reaction for each satisfaction made through the act of any kind of activities made.

From many definitions of readiness, thus the meaning of readiness could be concluded as "the state of being ready for doing things or adaptation with efficient result". Thus the community readiness means the state or condition of community for doing thing with efficient result.

2.4.2 The community readiness model

About the theory of community readiness (refer to Plested, Jumper-Thurman, 2001) (8) , the community readiness model that is identified in nine states was shown below:

1. Community Tolerance, which suggests that the behavior is normative and accepted.

2. Denial, which involves the belief that the problem does not exist or that change is impossible.

3. Vague awareness, which involves recognition of the problem, but no motivation for action.

4. Preplanning, a stage indicating recognition of a problem and agreement that something needs to be done.

5. Preparation, which involves active planning.

6. Initiation, which involves implementation of a program.

7. Institutionalization, which indicates that one or two programs are operating and are stable.

8. Confirmation and expansion, which involves recognition of limitations and attempts to improve existing programs.

9. Professionalization, marked by sophistication, training, and effective evaluation.

The Community Readiness Model was developed using two solid theoretical traditions:

1. Psychological readiness for treatment.
2. Factors related to community development.

The former is as simple as a therapist's recognition of not pushing the client to a level of therapy that he or she is not yet ready to embrace. If the client is pushed

beyond his or her level of readiness the treatment may fail. Communities are much the same. The tradition of community development recognizes the complex and dynamic interactions that are involved in community level, consensus-seeking, collective action. It focuses on the group process involved in making decisions.

2.5 The Community Access Center Approach

Community Access Centers (CACs) are a community service, social action, and/or educational facility that use computers, the internet and other information technology tools to provide a range of vital services for those who typically lack such opportunities (5). CACs provide access to free or low-cost computer-based/digital applications, hardware, networks, technology training and support programs.

The establishment of the community information access center is one of the way to increase an opportunity to access information technology and knowledge of people. The community access center is the public service center of information for people in each community. There are many kinds of media such as internet, book, newspaper, spread document, agricultural knowledge and government information that can make more opportunity of information access and can decrease overlap in information access for people in community.

In many countries, the establishment of the community access center is one method to increase opportunity of information access. And it is added in national information technology development policy. Such as Canada and Korea (9), the community access program is the policy to establish public point of community for access information technology and knowledge.

In Thailand, there are policies to support such as sub district internet center. It can increase opportunity of internet use for people. It makes more information access. The establishment of community access center is added in the IT-2010 national policy in the e-society development strategy. But the project was in the beginning phase and had just developed in some provinces. It wants more support of many sectors such as community people, budgets, government support.

Figure 2-2 Example of low cost community internet access centre

For example, these are the goals of the community access centers (10) that had established.

- Develop Internet access and skills to enhance economic performance, increase community employment.
- Create a cost-effective Internet access utility for community institutions.
- Provide web page hosting and development for businesses and non-profit organizations.
- Enhance the use of Internet in primary, secondary, transition, and adult basic education.
- Improve library services.
- Improve interaction between citizens and municipal, provincial and federal government.
- Improve health care in the wellness model using Internet.
- Encourage the use of internet among citizens for the improvement of the quality of life.
- Achieve these goals with not-for-profit approach for the benefit of the entire community.
- Foster to develop the development of the Community Access Program in Saskatchewan and Canada.
- Provide information technology opportunities for youth employment.

And these are services that the community center have:

- Free Internet access including web browsing, E-mail, web hosting, FTP, IRC/ICQ chat, word processing, graphics, at the Community Access Center in the library.
- Open Monday through Thursday 9am to 8pm, Friday and Saturday 10am to 6pm, and Sundays September to June 1-4pm, except long weekends.
- Fee-based printing, scanning, faxing, copying.
- We also manage the city's official web presence and generate other community web content.
- Internet training provided by volunteer and paid students, and seniors.
- Automated library services.
- Library staff assistance is provided for all these services.
- 700 PCs in schools connected to the backbone at the library, proving Internet to every teacher and student in every school in five school boards via library monitored ISDN connections.

Those functions will be advantage to make more opportunity of people’s information access. This pattern and functions can be a model that likely to adapt for development of community access center in Thailand.

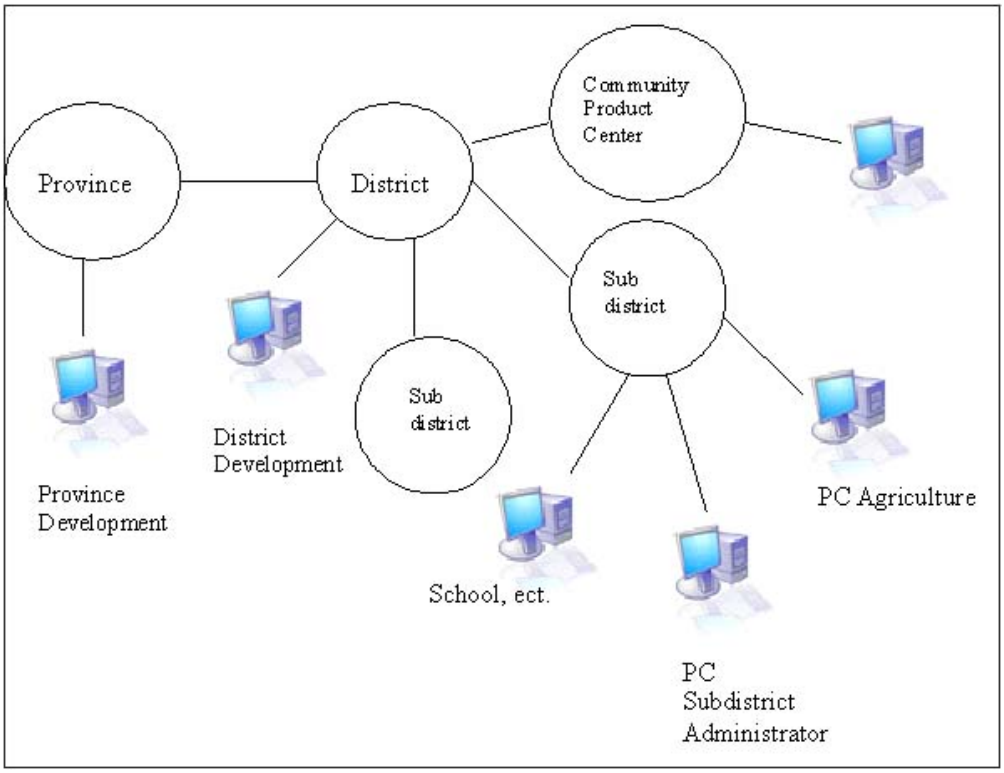

Figure 2-3 : Subdistrict Internet Project (11)

2.6 Subdistrict Internet Project Approach

2.6.1 Subdistrict Administration Organization

Subdistirct administration organization (SAO) means local organization that was established from the Sub-district Council and Sub-district Administration Organization Bill in 1994. The predicament of subdistrict administration organization is a juristic person. This act made all subdistrict councils legal entities and enabled a number of subdistrict council to obtain the revenue required to change their status into subdistrict administration organizations (SAO). The SAO is under to responsibility of the Ministry of Interior and governs the community using the resources and personnel of the community.

SAO is the local administration organization that not only has functions for govern working in local area, but also the management of other resource such as budget, infrastructure, and community development. SAOs were divided to five levels by quantity of work and annual average income. The levels of SAO can show thus.

- level 1 annual average income more than 20 million baths

- level 2 annual average income between 12 to 20 million baths
- level 3 annual average income between 6 to 12 million baths
- level 4 annual average income between 3 to 6 million baths
- level 5 annual average income less than or equal 3 million baths.

2.6.2 Background of subdistrict internet project

Subdistrict internet project is using information system as a tool to develop an information exchanging system for every subdistricts. All critical information such as infrastructure, politic, government, service, commerce, traveling will be transfer between subdistrict administration organization (SAO) and outer systems (private organizations and government organizations) through computer networks.

To make the subdistrict internet service available, Department of provincial administration integrate 24 administration systems to the Internet, including all other information which is considered to be useful to public. For using subdistrict internet, SAO officers dial number "1299" through TOT's IP network. Internet and Intranet technologies are used for managing government tasks and servicing local people. For the dialing number, TOT allows number "1299" only to connect Internet. Dialing to other numbers is available via Pin Phone 108.

To date, subdistrict internet project, which is set up by Department of provincial administration, can extend a capability of local administration organization. By the year of 2001, computers will be installed to 1000 different locations of SAO together with Internet connection through web site www.khonthai.com. Subdistrict government department registration center at Department of provincial administration design and develop information system for data management, budget management and reporting management via Department of provincial administration's intranet. Databases and Servers are distributed to 9 information processing center around Thailand, which staff from SAO can update and edit their data anytime. Information exposed to public is collected from the 9 regional databases to make an integrated information center, which can be retrieved, from www.khonthai.com. The beta-test project is started from June, 2001. It provides information about SAO, district, village, projects and plans, traveling information, local products and agricultural products. At

the present, the first 100 locations have been available for using. However they need more researches before all 1000 locations are ready for service by the end of 2001.

The goals of subdistirct internet project can divide in two parts. First to improve working performance of the government officers for people services, the second one for improve information and knowledge access of people. These are the goals involve information access of local people.

1. The people must have more knowledge and learning.
    - internet / e-mail , information seeking and usage
    - self-learning in many branches of knowledge
    - SAO as learning center
2. Improve service and make more information access of people
    - daily information
    - information seeking for employment and working
    - data sending and receiving
    - advice and complaint
    - registration services
    - franchise checking for election
    - other government services
3. People must have opportunity for income increment
    - Goods, services, and travel places advertising
    - Data for occupation planning
    - Have fit mechanism for e-commerce establishment.

2.6.3 Current situation of subdistrict internet project

The subdistrict internet project still operation in some SAOs, and some have not established. Each SAO that was selected to join this project received computer set for subdistrict internet project operation and people services. The set of computer combine with personal computer, modem 56kbps, laser printer, UPS, scanner, and sound speaker. In each year the quantity of SAOs that had received computer set will be increased from 2001 to 2003. The project development plan was divided in 3 phases.

Estimates year 2001 : establish to 1,000 SAOs

Estimates year 2002 : establish to 3,000 SAOs

Estimates year 2003 : establish to 3,000 SAOs

Two officers form each SAO were learned and practiced in involve topics to operate system of subdistrict internet project, and people service and consultation. Local people can come to SAO and use computer to use the services such as searching information from internet, document printing, picture scanning, and more. There are questionnaires for evaluate the effective and benefits level of project for operation reform. Unless topics of people services for computer and internet use, there are systems for the officers to use for computer-based task such as registration system, data center access via internet, and other government services for people.

2.7 IT Development in Other Countries

Nowadays many countries have policy for construction and development of infrastructure for support information technology. These are development methodology of many countries (12).

2.7.1 The United States of America

The United States is a country that goes forward in information technology development at top position of the world. The US Government had an initiation to develop the information superhighway that can connect data with home, school, hospital, office, and library together. These are implemented with fiber optic that can communicate in picture, audio, and high speed data. Thus help student from taking lesson from school to study at home at night, help officers work from home but still can exchange data and document with office’s computer systems.

Furthermore, The United States had organization for rural services in information and more. That called “Rural Information Center” (13).

The Rural Information Center (RIC) provides information and referral services to local, state, and federal government officials; community organizations; health professionals and organizations; rural electric and telephone cooperatives; libraries; businesses; and, rural citizens working to maintain the vitality of America's rural areas.

The Office of Rural Health Policy in the Department of Health and Human Services (DHHS) and the National Agricultural Library jointly created a rural health information clearinghouse known as the Rural Information Center Health Service (RICHS). RICHS, situated within RIC, is designed to be a national clearinghouse for collecting and disseminating information on rural health issues, research findings related to rural health, and innovative approaches to the delivery of rural health care services.

2.7.2 Japan

The ministry of international trade and industrial (MITI) of Japan have policy in 1990 decade period that will encourage the information society. Thus development of network and database is in a part of information infrastructure. It will develop law, procedure, and other support systems for electronic commerce. Furthermore MITI have policy to increase ability of people to get ready into information society. It develop and distribute technology and information system that ease of use. Develop education in field of information technology, increase abilities of technologies in information services industrial, software development and development of information technology that closely involve with mankind.

As ministry of postal and telecommunication of Japan stated about the tendency of to information technology for increase competition ability. First point is establishing new industry instead of old industry. The new industry that will be established involve intellect assets such as software, multimedia, information and entertainment services.

The second point is the development of information technology infrastructure that increases production performance and makes more competition ability of Japan such as ability to communicate with fiber optic. Include for develop the computer system of any ministries to implement in same system.

The NTT company have a project that worth about 22,000 million bath for establish the fiber optic networks. It’s enable data communication about 10 megabit/sec, which is faster than telephone line about 156 times. This new network will communicate between people’s home in year 2005, and will communicate between the big towns for all over the country in year 2010. That makes people can

communicate with multimedia, hi-speed system and internet with high performance in low cost.

2.7.3 Singapore

The Singapore government has policy to support the education in information technology. They have a goal to bring country toward the top of Asia in information technology. The government will invest about 27,000 million bath for installing information system in schools and will train all teachers to use computer. That can help studying computer and internet. Moreover there is policy to connect fiber optic for all home within year 2001 too.

The policies of Singapore government that decrease digital divide are:

- Sponsored for the inferior opportunity people to understand and certain about the important if information and communication technology within 3 years in budget 25 million Singapore dollars.
- Reduce duty for people or organization that donate computer with internet connection.
- To actuate people to use broadband network with Singapore One by using public infrastructure such as Internet Kiosks.

2.7.4 Taiwan

The ministry of economic work of Taiwan gives support to built software industrial park that called “Nankang Software Park”. The software park have following services.

- Information Service Center
- Service Center for Software Validation and Verification
- Software Tool Application Center
- Software Engineering and Management Training Center
- Telecommunication and OSI Compliance Test Center
- Service Center for Shared Information Technology

2.7.5 Korea

The Korea's Information Infrastructure Draft Document shows the goal of Korea National Information Infrastructure initiative (KII) (14). That it is the construction of an advanced national information infrastructure consisting not merely of communication networks but of Internet services, application software, computers and operating systems, and information products and services. The KII of the 21st century is expected to enable all Koreans to access information and communicate with any body, any time and any where. Furthermore, the KII vision is that all information and communication services in voice, data, and video will be easily, reliably, securely, in a timely manner, and cost effectively

The plan of Korea that involves reducing the gap of information access is shown below:

- The policy for improving information technology infrastructure. They have goal for network connection with fiber optic all of country in year 2002.
- To develop technology for helping elder and deformed person such as website, software and tools for blind person.
- To establish the community access center.
- To train people by government support.

2.7.6 Canada (3)

Canada has many policies to support information technology infrastructure development and solve digital divide problem.

- To establish National Broadband Task Force to assign strategies for internet service on high speed broadband network for all community within year 2004.
- The community access center development policy for increase public service point for information access opportunity of people.
- Schoolnet project for connection of school, student, teacher and parents.
- The Computer for school project to distribute computer for any school.

2.7.7 New Zealand (15)

New Zealand adapt the strategies for country development to use information technology. That is quickly development. The New Zealand government aim at the important of information technology development. The development of information technology of New Zealand can be divided into 3 parts.

- IT Production and Use (Public and Private Sectors)
- Industry IT Initiatives (Micro-Level)
- Government IT Policy (Macro-Level)

Within 5 years to anticipate, IT developments of New Zealand will grow at most. This includes opinion, vision, attitude, information service, commercial, internet use, and multimedia and communication technology.

2.8 IT Development in Thailand

2.8.1 Information Technology Policy (16)

From the past to present, the government sectors have the path of information technology in different levels that lead to different results. The government public policies are the important factor apart from market cycle in private sectors, NGOs and general community that must be developed together.

The information technology development policy in phase one called “IT-2000 Policy” since 1995. The foundation of country development has been established in a period of time that Thai society was not familiar with new technologies and applications. Although the three basis development duty such as information technology infrastructure, information technology human resource, information technology for government reformation that do not finish yet. But there is social increase in new technology and innovation.

In first decade of the 21st century, Thai government has many public policies that involve the development procedure in information technology such as subdistrict internet project, education technology and communication network development, internet for education, e-Tourism, IT for agricultural, e-Government, research and development support, ect.

The policy of information technology for country development is based on the creation of knowledge society within 10 years (2001-2011) to make more powerful economic system and social constancy. The strategies for development can be divided to 5 sections.

- Information technology for public section development (e-Government)
- Information technology for commercial development (e-Commerce)
- Information technology for industrial development (e-Industry)
- Information technology for education development (e-Education)
- Information technology for society development (e-Society)

Those are consistency and connected together, and make more advantage for country in many sections such as to establish the connection of Thai knowledge. There are development of human resources, innovation support, and information technology infrastructure and information industry.

2.8.2 Information Technology in Rural Thailand (17)

Information technologies make dissemination of information quickly in many areas. Information and data are kept in many format and media. Thus it will be useful depending on how to use, and who receive an advantage of information technology. The tools for information technology usage are expensive. So rural people cannot buy or procure that. Thus it is an important factor to intercept the opportunity of rural people to access or use services of information technology. However the condition of education and economy state is the important factor to obstruct information access opportunity of rural people.

Anyhow, rural people must get more services in information technology infrastructure. So the technology that the government has to disseminate information to people in rural area is radio and television. Thus the way that the government can do in short time is to spread information to both of media (radio, TV) without any interception. However to make more benefit of information for people, the next thing the government must do is to increase opportunity of people to get more information and knowledge to follow the change of world. The most important thing is to make people to be certain about advantage of information and to utilize the information for public and private sectors.

To increase the way for information knowledge and access of people, the government must support for tools and anymore such as computer and communication equipment. However to make rural people think about the important of information. In year 1995 the government had noticed for the year of information technology. That is the attempt of the government for bring new progress and innovation for go forward with other countries. But on current state, there are the wide gap between rich people and poor people, or between urban people and rural people. Rich people try to get and use new technology while poor people have nothing. IT is problem that the government must solve.

In IT-2010 policy, the government foresees the important of information technology development and dissemination in rural area. There are many policies to support such as e-Society strategy that have project about subdistrict internet, infrastructure and network development in rural area. That may make rural people have more opportunity in information access and decrease the gap of digital divide.

2.9 Other Related Works

Thaweesak Koanantakool, The director of National Electronics and Computer Technology Center (NECTEC) had presented about the topic of infrastructure for knowledge society in March 16th, 2000. The contents are about current state of information technology use of people compared with other country, the development policies, vision in IT development, and current problem. They have contents about policy for decreasing digital divide too.

The National Electronics and Computer Technology Center (NECTEC) (18) had surveyed about tools/equipments of information technology that people use in 2001. The objectives are to know about the use of equipments and tools of information technology. There is survey in 3 topics about Computer, Fax, mobile phone, and internet use, and survey about 78,000 families. That is not research about information access of rural people.

Christopher J. Campbell (19) of The Center for Rural Massachusetts, University of Massachusetts, Amherst had studied about community technology center in topic of “Exploring a Tool for Rural Community Development” in year 1995. This included in thesis topic “An Exploratory Study of Community Technology Centers in Rural Massachusetts” that submitted by the author to the Graduate School of the University of Massachusetts, Amherst in partial fulfillment of the requirements for the degree of Master of Regional Planning. This study is to explore about the factor of community center establishment in Massachusetts such as the right kind of rural community for a community technology center, organization, size, and operating of community center

The conclusion of this study shows that the concept of the community technology center is infused with the idea that advancing telecommunications and computers represent an opportunity for rural communities to improve their situation, if they can gain some control over how they are applied. So much of the talk of these new advances focuses on their global aspects: world-wide networks of information and action. And much of the global information infrastructure does exist to make this possible, already moving data and communication around the world for those who have the ability to tap into them. Community technology centers represent the other end of these developments. They are a part of the information local highway to the world's information superhighway; less mind-boggling in scope, perhaps, but no less important or exciting, for it is that end that will provide the interface for the local user.

The research project of information technology law development of the National Information Technology Committee Secretariat (16) had studied and researched about development of information technology laws in Thailand including information access in rural area and digital divide problem solving. And continuity disseminate about related documents. Also there are seminar for receive many opinions of people.

The kernel of information technology infrastructure law has contents about universal access and universal service for decrease digital divide.

Tierawan Sankapan (20) researched about the topic of “Needs and Readiness for Microcomputer Applications on Educational Management Information System of

Secondary Schools Under the Jurisdiction of the Office of Private Education Commission, Bangkok Metropolis". That is a master degree thesis of Chulalongkorn University in year 1992. The purpose of this research was to investigate the needs and readiness for microcomputer applications on educational management information system of secondary schools under the jurisdiction of the Office of Private Education, Bangkok Metropolis. The study has 2 sections, the needs for utilization of microcomputer management information system (MIS) and the readiness of the utilization of microcomputer for MIS in schools.

Sirichom Pichedboonkiat (21) researched about the topic of "State and Problems of Utilizing Information in Teaching Social Studies in Secondary Schools, Phayao Province " as the master degree thesis of Chiangmai University in year 1996. The purposes of this research was to study the state and problems of utilizing information in teaching social studies in secondary schools, Phayao province.

Rungchai Jantasing (22) researched about "Situation and needs in utilization of Information Technology for academic administration in Rajabhat Institutes in Bangkok Metropolis". That is master degree thesis of King Monkutt's University of Technology Thonburi in year 1998. The purpose of this survey research was to study the situation, problem and needs in utilization of Information Technology for academic administration in Rajabhat Institutes in Bangkok Metropolis and use the questionnaire for data collection.

Susan Rose (5) studied for topic "The Role of Community Access Centers in Bridging the Technology Gap". That was the research in the degree of Master of Arts in the Department of Urban and Environmental Policy, Tufts University in year 1997. So the propose of this research were to study about community access centers as a new type of social-service program and the ways in which they provide computer access to the have-nots. The results of this research showed about the community access center detail, models and operating procedures for community services to reduce technology-gab for people.

Benjamas Watcharopas (23) had studied about topic in readiness of SAO for internet service in Chonburi province. This was thematic research in major of general administration, Burapha University in year 2002. This research used the basis of readiness theory of John Downing, which divides the factor of readiness in three topics about knowledge, motivation and personality factors, and environment factors. The results of this study had shown that the SAO had readiness for internet service in high level. And found the obstacle about internet service in topic of that did not have readiness in resource section, administrative section, and technical section, including problem of tardy data and information transfer from center to local level.

However, this research studied about section of readiness of subdistrict administration organization in internet services, and did not study in field of local people and real situation about information access of people that was one of important major that should be interested.

CHAPTER III
RESEARCH METHODOLOGY

In this chapter describes the step of studying, tools and time frame of this study. From concept, ingredients, theory and other research that related to this study, in this case use the following components.

3.1 Documentary

To study about related documents that involve this research and collect data from the study of related researches, thesis, seminar papers, survey reports, other statistics reports, and also in the internet. The gist of document cover about these topics:

- Thailand information technology development policy
- Information technology infrastructure in rural community
- Foreign information technology infrastructure development
- Information access in rural area

3.2 Field Research

3.2.1 Target Area

In field research, the area that is used to study is the community at Saithong subdistrict in Pamok district, Angthong province. That has eight villages and center organization of community administration.

3.2.2 Population and sampling

1. Population

The population in this research is two groups of people in local area.

- Local social leadership, such as Headman of subdistrict(Kamnan), village headman, subdistrict officer

- People living in community, in one subdistrict (eight villages) at Saithong subdistrict for the case study. There are 3164 people in eight villages (real survey, not from census records).

2. Sampling

In this case, there are two groups of sampling.

- Group1 : Community Leader, such as Kamnan(head of subdistrict), the headman of village, chairman of subdistrict management organization, a chief of subdistrict administration committee. In group 1, the sampling is the same as population. The sampling is group 1 that is shown below:

Table 3-1 : Sampling group 1

Obligation	Quantity
SAO chairman	1
SAO deputy	1
SAO officer	3
SAO council member	8
Kamnan	1
Village headman	5
Village headman assistant	7
Village committee	3
Community health care officer	2
Monk	9

- Group 2 : General people in target area that is sampled from eight villages in real survey. The sampling in group 2 is shown below

Table 3-2 : Sampling group 2

village	population		Sampling
	Male	Female	
1	128	156	56
2	209	250	92
3	192	284	96
4	232	270	101
5	311	334	129
6	133	141	55
7	184	198	77
8	117	131	50
Sum	1506	1764	656

In group 2 will sampling about 20% of population that have enough reliability and can refer to the population.

3.2.3 Research Methodology

1. Observation and survey

Observation and survey about general information of the target area which includes population, information technology infrastructure, community center, ect.

2. Interview

There are two sampling groups for informal and formal interview and also distributing questionnaire to know about related data.

- For community leadership : To know about work operation, government policy in information technology infrastructure, a role of subdistrict center office in case of information technology disseminate

- For people in community : To know about the condition of people's information access in rural area at present. That is divided into many issues including a kind of media, knowledge and interesting of people, appearance of information access, the way to get information and also, the opinion that involves information technology infrastructure and information access.

3. Questionnaire

This research use questionnaires as instrument of data collection and analysis. The step of questionnaire development can be show below :

- questionnaire design
- validity by specialist
- tryout (reliability)
- improve instrumentation

3.3 Analysis of data

The analysis of the data in this research has the following steps:

1. Data checking
2. Data classification.
3. Analyzing data by using probability and statistical methodology, opinion and readiness theory.
4. Results processing and reporting using table, graph and context description.
5. Conclusion of the study.

3.4 Writing report

The research results were analyzed with SPSS 11.0 statistical application software. The conclusion of the results and research documentation is made and inspected with Microsoft Office XP.

3.5 Tools of this studying

Tools of this research can show thus.

1. Questionnaires
2. Statistics tools for analysis
    2.1 Descriptive Statistics
        2.1.1 Central Tendency Measure

- Arithmetic Mean

2.1.2 Dispersion

- Standard Deviation
- Variance
- Percentile

2.1.3 Data Presentation

- Table
- Graph
- Descriptive Document

2.2 Inferential Statistics

2.2.1 Chi-Square Test

2.2.2 Contingency coefficient

3. Personal Computer
4. Software SPSS 11.5 for Windows for data analysis
5. Satisfaction and opinion level analysis

The mean analysis of satisfaction level of local people :

- 1.00 - 1.49 satisfaction level is very good.
- 1.50 - 2.49 satisfaction level is good.
- 2.50 - 3.49 satisfaction level is moderate.
- 3.50 - 4.49 satisfaction level is poor.
- 4.50 - 5.00 satisfaction level is very poor.

The mean analysis of infrastructure improving level :

- 1.00 - 1.49 improving level is very few.
- 1.50 - 2.49 improving level is few.
- 2.50 - 3.49 improving level is moderate.
- 3.50 - 4.49 improving level is much.
- 4.50 - 5.00 improving level is very much.

The mean analysis of opinion level of community leader and officer

- 1.00 - 1.49 opinion level is very good.
- 1.50 - 2.49 opinion level is good.
- 2.50 - 3.49 opinion level is moderate.
- 3.50 - 4.49 opinion level is low.
- 4.50 - 5.00 opinion level is very low.

The mean analysis about opinion level of community leader and officer in support topics of information access for local people

- 1.00 – 1.49 opinion level is high
- 1.50 – 2.49 opinion level is moderate
- 2.50 – 3.00 opinion level is low

6. The Contingency coefficient analysis
   - 0.001 – 0.399 : Low level relationship
   - 0.400 – 0.749 : Moderate level relationship
   - 0.750 – 1.000 : High level relationship

CHAPTER IV
INFORMATION ABOUT STUDIOUS AREA

In this chapter describes about the historical background, infrastructure of study area and also, current situation about information technology usage, attitude and opinion of local people and local officers.

4.1 Historical Background and Infrastructure Information

4.1.1 Historical Background

The detail of Saithong subdistrict is shown below.

Name of area	Saithong Subdistrict
Address	Pamok District, Angthong Province
Boundary	North : to join with Posa subdistrict and Huaphai Subdistrict in Muang district, Angthong Province South : to join with Rongchange subdistrict in Pamok district, Angthong province East : to join with Banmai subdistrict in Maharat District, Hansang subdistrict and Tubnam subdistrict in Bangpahan district, Ayudthaya povince West : to join with Rongchang subdistrict and Bangplako district, Angthong province
Area	10.40 square kilometers

Quantity of villages 8 villages

Quantity of people Male 1,344 persons Female 1,580 persons

(Survey during February, 2002)

Topography

Most of area is low-land which is under water path of the year. The most occupation is paddy farming. The others are to practice agriculture such as green gram, any kinds of vegetable. It has an irrigation waterway in the area.

There are 2,924 persons in 716 households. Most people (658 persons) live in village 7 and village 8 had the least people (221 persons).

Table 4-1 Number of households and people in each village (survey during February 2002)

Village No.	Household	People	
		Men	Women
1	72	128	155
2	93	200	210
3	104	180	230
4	106	179	258
5	166	311	347
6	42	98	100
7	78	146	161
8	55	102	119

Society Condition

Social condition section shows about institute and other centre of local area such as school, public health center, temple, ect.

1. Education (qty.)

Primary School 3

Secondary School 1

2. Religion Institute (qty.)

Temple 3

A house of worship 1

3. Public Health Service (qty.)

Subdistrict public health service center	1
4. Local Administration center	1
Local Officer	6

Budget

This section shows about annual budget of subdistrict administration organization (SAO). The average income for the last five years is 2,281,785.23 baht.

Table 4-2 Income and expenditure of subdistrict

year	income(฿)	expenditure(฿)	remain(฿)
1997	2,123,697.68	1,280,686.45	843,011.23
1998	2,075,786.89	1,683,984.47	391,802.42
1999	2,305,283.30	1,831,036.68	474,246.62
2000	2,194,383.22	1,651,318.27	543,064.95
2001	2,709,775.04	1,996,331.42	713,443.62

4.1.2 Infrastructure of subdistrict

Basic Infrastructure

1. Electric Use

Number of villages that have electric use	8
Number of household that have electric use	635

2. Water Resource

Waterway, gully	5
Marsh, reservoir, others	2
Water Supply Station	5

3. Transportation System

Saithong subdistrict uses land transport as major transportation system. The transportation of local community was shown below.

- Asphalt Local Road: Have 2 routes that pass village 1, 2, 3, 4, 5, 6, and 7 (about 8,250 meters long).

- Concrete Local Road: Have 20 routes (6,070 meters long) that split into eight villages. The village 1 has the longest concrete road (1,545 meter), and village 7 has the shortest concrete road (100 meters).

Table 4-3 Concrete road of each village

Village	route(s)	distance(m)
1	4	1,545
2	3	515
3	3	1,181
4	3	749
5	4	1,280
6	2	630
7	1	100
8	1	250

- Laterite Road: Laterite road is one of basic route for transportation in village. There are18 routes (about 15,769 meters) that split into eight villages. Village 3 has longest distance of laterite road and village 7 has shortest distance of laterite road.

Table 4-4 Laterite road of each village

Village	route(s)	distance(m)
1	2	3,630
2	2	2,684
3	4	4,115
4	3	600
5	3	2,080
6	2	2,200
7	1	260
8	1	400

Social and information infrastructure

1. Number of electrical use

Opportunity of electrical use of people in each village is the basis factor of information access opportunity for each group of people. Most of

households have electrical use. So the average percentage of households that have electrical uses is about 98 %. The opportunity of electrical use of people in each village was shown below.

Table 4-5 The number of households that have electric use

Village	Number of electric use (households)	percentage
1	72	100
2	93	100
3	103	99.04
4	106	100
5	145	87.35
6	41	97.62
7	78	100
8	50	100

2. Number of households occupying television and radio

Television and radio were one of many ways to improve opportunity of information access of people. Most households have both radio and color television. The number of households that occupy television and radio was shown below.

Table 4-6 Households that occupy radio and television

Village	Number of households that have radio	Number of households that have TV	Quantity of Radio	Quantity of TV (Black-White)	Quantity of TV (Color)
1	68	72	68	0	85
2	63	93	63	0	93
3	104	97	112	0	120
4	100	97	100	0	97
5	145	145	150	0	160
6	40	36	40	0	36
7	78	78	78	0	78
8	50	50	50	1	50

3. Number of telephone use

The use of telephone and mobile phone effects opportunity for information and knowledge access from internet. Village 6 has minimum percentage of the use of telephone (11.9 %). And the highest percentage of

the use of telephone and mobile phone is in village 3 (83.65 %). So the average percentage is about 48.58 %. For public phone, there are only 5 public phones in this district. And four villages have none.

Village	Use of telephone and mobile phone (households)	Percentage of the use of telephone and mobile phone	Number of public phone
1	45	62.5	2
2	13	13.98	0
3	87	83.65	1
4	45	42.45	0
5	60	36.14	1
6	5	11.9	0
7	58	74.36	1
8	35	63.64	0

Table 4-7 Number of telephone use

4. Other social organization

Consider about social organization in local area. All of villages have a local book center. Six villages have an information tower, and only four villages have a public phone. So the other social organization such as temple, school, information tower, and more was shown below.

Table 4-8 Social organization in each village

Village	information tower	public phone	local health center	local book center	local water supply	school	Subdistrict administration organization	temple
1	✓	✓	✓	✓	✓	✓		✓
2				✓				
3	✓	✓		✓			✓	
4				✓	✓	✓		✓
5	✓	✓	✓	✓				
6	✓			✓		✓		✓
7	✓	✓		✓				
8	✓			✓				

5. Information at local book center

About information such as book, magazine, or newspaper local book center, the book center of village 2 did not have any kind of information except

newspaper. Other villages have a lot of school books and knowledge magazines such as education journals.

Table 4-9 Show about information that service in local book center

Village	school book	publication sheet	newspaper	knowledge magazine	entertainment magazine	advertising poster
1	4	2	1	4	3	3
2	0	0	1	0	0	0
3	4	0	1	2	2	2
4	4	1	1	2	3	2
5	4	2	1	4	0	4
6	4	0	1	3	0	1
7	4	2	1	2	1	2
8	4	2	1	4	1	3

none = 0
very few = 1
few = 2
medium = 3
a lot of = 4

4.2 Current Situation about information technology

In this section shows about results in situation and usage of information technology form people in target area. The results are presented in three paths as follows.

Path one : Survey results of local people.

1. The general characteristics and information access of sample people.
2. The satisfaction in information technology infrastructure.
3. The opinion and attitude of people in community access center establishment.

Path two : Survey results about community leader and officer.

1. The general characteristics and IT knowledge.
2. The satisfaction of work and attitude in information technology.
3. The opinion about information access of local people.
4. The opinion for subdistrict organization administration to establish the community access center.

Path three : Factors affected the readiness to establish the community access center.

4.2.1 Survey results of people

1. The general characteristics and information access of sample people.

Consider 657 samples from 8 villages at Saithong subdistrict of Pamok district, Angthong province. There are 313 males and 334 females, and most of their age range about 31-40 years old (21.9 %). Most of people live in village 5 (19.6 %) and the minimum people were in village 8 (7.6 %). About education background, most of them had graduated primary school (35.5%) and have bachelor's degree about 69 persons (10.5 %). Most people who finished bachelor's degree live in village 4 (18 persons), and village 6 had only 2 persons who graduated bachelor's degree (0.3 %). Most of people had average income about less than about 4,000 baths per month (45.1 %). The data general characteristics and information access of sample people shown in table 4-10 and figure 4-1 to figure 4-4.

Table 4-10 Distribution of respondents by the general characteristics

The general characteristics	Village								Total	% Total
	1	2	3	4	5	6	7	8		
Gender										
Male	30	40	49	41	53	30	43	27	313	47.6
Female	26	53	47	60	76	25	34	23	344	52.4
Age										
less than 15 years	3	21	7	0	10	1	5	9	56	8.5
15 – 20 years	5	15	12	4	28	1	11	4	80	12.2
21 – 30 years	8	13	17	26	24	9	19	11	127	19.3
31 – 40 years	13	13	32	29	22	11	17	7	144	21.9
41 – 50 years	15	13	17	25	25	15	9	9	128	19.5
51 – 60 years	7	9	3	7	10	3	7	4	50	7.6
more than 60 years	5	9	8	10	10	15	9	6	72	11
Education background										
primary school	14	33	25	34	48	36	29	14	233	35.5

Table 4-10 Distribution of respondents by the general characteristics (Continued)

The general characteristics	Village								Total	% Total
	1	2	3	4	5	6	7	8		
secondary school	12	29	26	23	28	8	14	11	151	23
High school	12	17	32	11	38	7	22	10	149	22.7
diploma	5	5	6	13	6	2	7	6	50	7.6
bachelor's degree	12	9	6	18	9	2	5	8	69	10.5
master degree and above	1	0	1	2	0	0	0	1	5	0.8
Occupation										
farmer	8	11	19	7	18	15	20	4	102	15.5
private employee	20	36	45	58	56	28	36	18	296	45.2
government employee	14	4	4	10	7	1	0	8	48	7.3
merchant	2	1	6	8	10	6	5	3	41	6.2
student	9	34	16	7	32	1	15	14	128	19.5
own business	1	0	2	2	0	0	0	3	8	1.2
engineer/technician	0	0	1	0	0	0	0	0	0	0.2
other	2	7	3	9	6	4	1	0	32	4.9
Monthly income (Bath)										
less than 4,000	21	57	30	35	71	36	28	18	296	45.1
4,001-8,000	10	21	32	42	37	16	28	18	204	31.1
8,001-15,000	11	11	30	15	14	3	20	7	111	16.9
15,001-20,000	5	2	4	3	3	0	0	5	22	3.3
more than 20,000	9	2	0	6	4	0	1	2	24	3.7

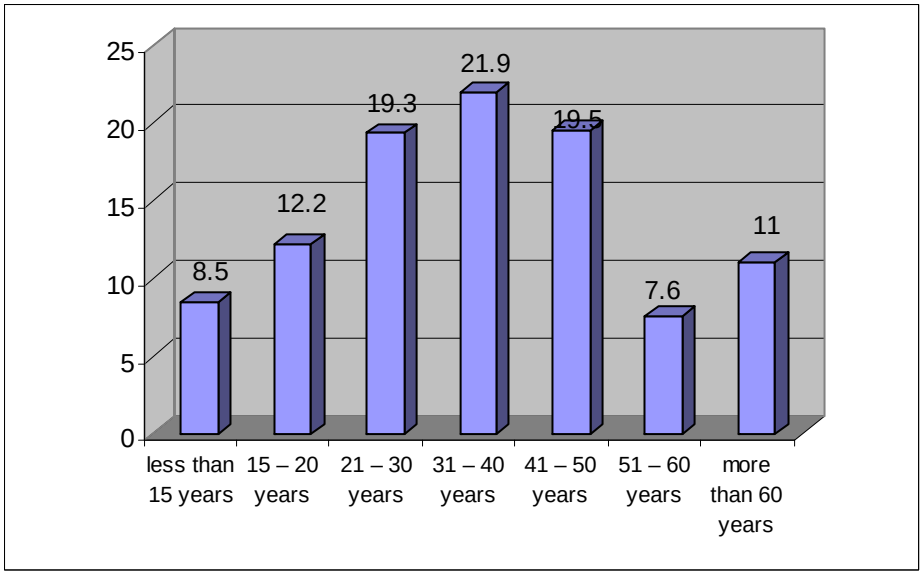

Figure 4-1 Age range of local people

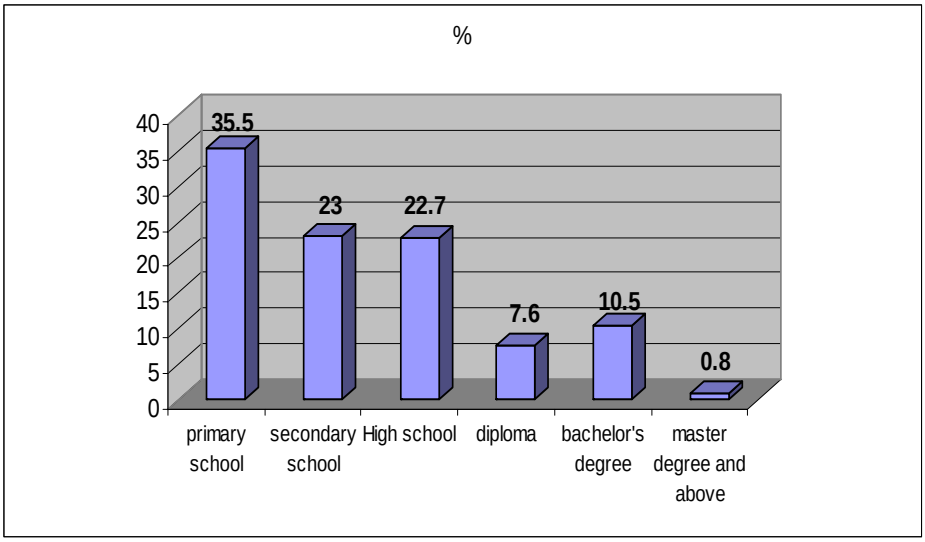

Figure 4-2 Education background of local people

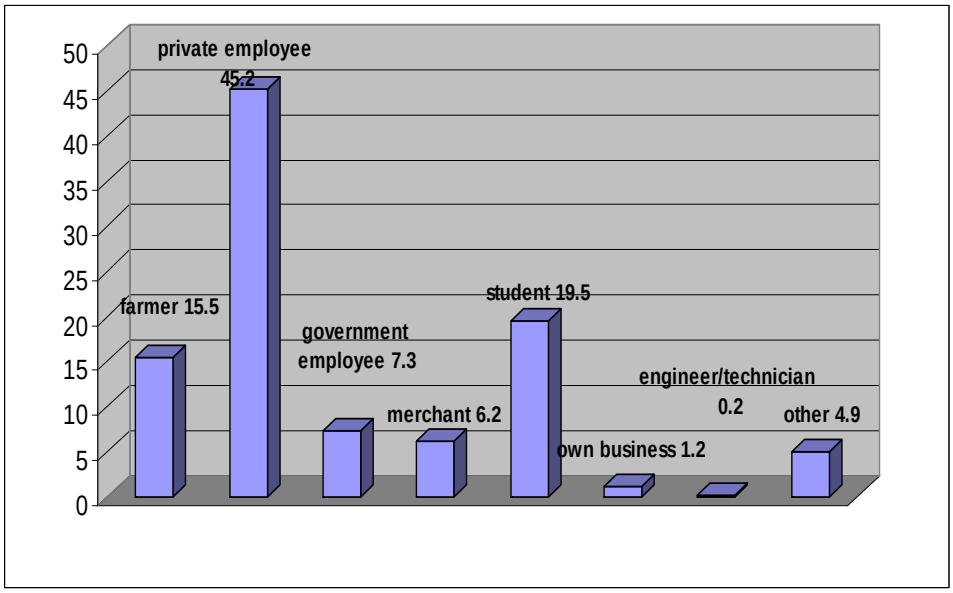

Figure 4-3 Occupation of local people

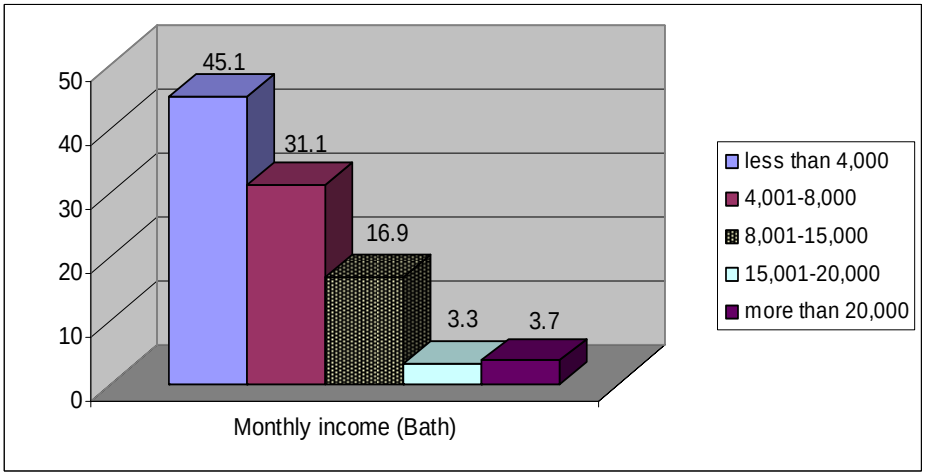

Figure 4-4 Monthly income of local people

The most of samples occupy in private employee section. There are included general employees, farmer for hire, carpenter, brick worker, industrial worker, company officer, and more. So this section has difference characteristics within group. This private employee group has most age range between 21-50 years old (92%). The most of people have education background in primary school level (32%), and most of respondents have monthly income between 4,001 to 8,000 baht. The general characteristic for private employee group was shown in table 4-11.

Table 4-11 General characteristics of private employee group

The general characteristics of private employee group	Village								Total	% Total
	1	2	3	4	5	6	7	8		
Age										
less than 15 years	0	1	0	0	0	0	0	0	1	0.3
15 – 20 years	0	2	1	0	3	1	2	0	9	3
21 – 25 years	6	10	12	15	20	3	15	8	89	30
31 – 40 years	7	12	22	24	16	9	13	5	108	36.4
41 – 50 years	7	10	10	16	16	10	3	4	76	25.6
51 – 60 years	0	1	0	2	1	3	2	0	9	3
more than 60 years	0	0	0	1	0	2	1	1	5	1.7
Education background										
primary school	5	17	6	21	17	16	10	3	95	32
secondary school	3	4	14	16	19	5	5	2	68	22.9
High school	7	8	19	7	16	5	14	4	80	26.7
diploma	3	3	3	11	3	1	4	6	34	11.4
bachelor's degree	2	4	3	3	1	1	3	2	19	6.4
master degree and above	0	0	0	0	0	0	0	1	1	0.3
Monthly income (Bath)										
less than 4,000	4	12	1	18	15	15	9	0	74	24.9
4,001-8,000	4	16	16	28	29	10	13	11	127	42.8
8,001-15,000	9	8	25	11	11	3	13	5	85	28.6
15,001-20,000	2	0	3	0	0	0	0	2	7	2.4

2. The information technology usage local people

The information attention and access of local people

This part of results indicates that most of the respondents (80.7 %) concern to seek new information and knowledge. The most interesting subject is occupation aid knowledge (40.3%), and the second one is local information (21.6%). Television is the most media that local people use for information receiving (83.1%). For information utilization, most of respondents (52.5%) use for self-development and 34.1% use for occupation. Television and radio are the most way that people can retrieve information (57.1%). About village book center, there are 42.6% that never use local book center and 23.6% use less than once per week. For information from information tower, the

most topic is about government notice (36.7%) and the second one about cooperate asking (27.2%). The table of these results is shown in table 4-12 and bar charts are shown in figure 4-5 to figure 4-6.

Table 4-12 Information Access and usage of local people

Information Usage	Village								Total	% Total
	1	2	3	4	5	6	7	8		
Concernment about new information and knowledge seeking										
interest	53	62	79	70	102	49	71	44	530	80.7
not interest	1	2	0	5	4	3	2	5	22	3.3
to be still	2	29	17	26	23	3	4	1	105	16
Most interesting subject										
occupation knowledge	17	36	38	58	50	18	35	13	265	40.3
education information	13	15	23	16	26	9	13	15	130	19.8
government information	10	7	13	9	16	5	4	10	74	11.3
local information	11	25	16	16	22	23	22	7	142	21.6
entertainment information	5	10	6	1	15	0	3	4	44	6.7
others	0	0	0	1	0	0	0	1	2	0.3
Most media that receive information										
television	47	81	75	85	104	46	66	42	546	83.1
radio	2	3	4	8	11	8	4	3	43	6.5
government signboard	0	0	0	0	3	1	0	0	4	0.6
publication document	0	0	1	0	1	0	0	0	2	0.3
internet	0	6	1	0	3	0	2	2	14	2.1
newspaper	7	3	15	8	7	0	5	2	47	7.2
others	0	0	0	0	0	0	0	1	1	0.2
Media that easily to receive information										
television	46	73	75	83	100	40	56	45	518	78.8
radio	5	2	7	8	14	11	9	0	56	8.5
government signboard	0	0	1	0	2	0	0	2	5	0.8
publication document	1	1	1	1	3	1	4	0	12	1.8
internet	1	11	3	1	3	1	3	2	25	3.8
newspaper	3	6	9	8	7	2	5	1	41	6.2
The way to receive local information										
local notice	43	80	55	44	88	51	49	39	449	68.3
neighbor	6	6	12	4	13	2	6	5	54	8.2

Table 4-12 Information Access and usage of local people (Continued)

Information Usage	Village								Total	% Total
	1	2	3	4	5	6	7	8		
head of village	3	4	10	36	17	1	12	2	85	12.9
family member	4	0	19	17	11	1	10	4	66	10
others	0	3	0	0	0	0	0	0	3	0.5
information utilization										
for occupation knowledge	14	26	37	46	50	26	18	7	224	34.1
for himself development	39	50	48	38	60	28	48	34	345	52.5
no special interesting	3	16	11	17	19	0	11	5	82	12.5
others	0	1	0	0	0	1	0	4	6	0.9
The way to retrieve information										
search from book	19	18	21	20	20	7	14	7	126	19.2
ask knowing people	9	10	25	28	18	5	18	6	119	18.1
TV / radio	25	54	47	46	87	43	40	33	375	57.1
retrieve from internet	3	9	3	7	4	0	4	4	34	5.2
others	0	2	0	0	0	0	1	0	3	0.5
Local book center usage										
never	15	21	53	62	66	12	34	17	280	42.6
less than once per week	13	30	20	18	26	6	26	16	155	23.6
once per week	14	13	9	7	19	5	5	6	78	11.9
twice per week	6	16	13	8	12	22	5	3	85	12.9
all days	8	13	1	6	6	10	7	8	59	9
The most information from information tower										
to ask for cooperate	17	42	13	32	19	8	20	28	179	27.2
to fight and entreat	7	11	8	6	13	27	2	4	78	11.9
government notice	22	22	58	28	51	11	34	15	241	36.7
agricultural information	2	8	9	33	27	5	12	0	96	14.6
narcotic information	7	8	3	1	11	4	6	2	42	6.4
public health information	1	2	5	1	8	0	3	1	21	3.2

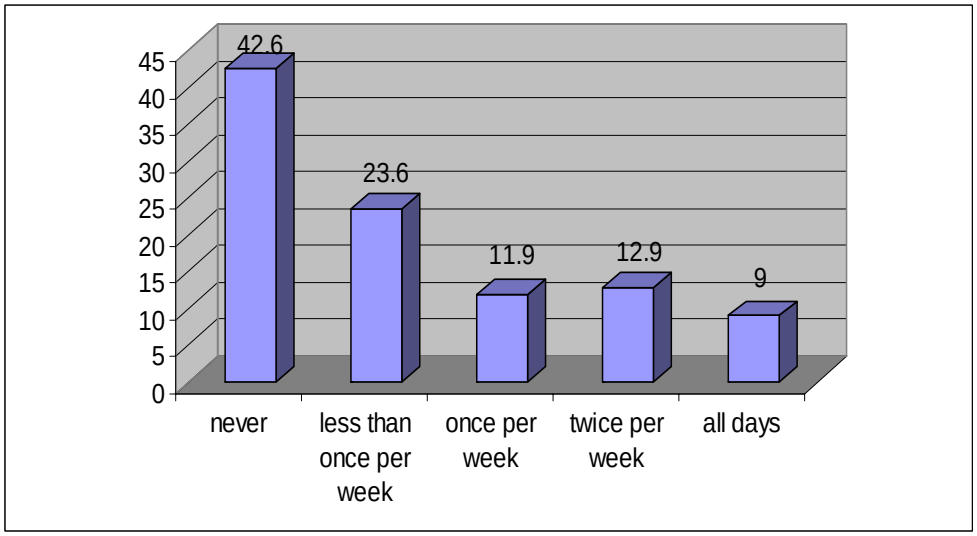

Figure 4-5 Local book center usage

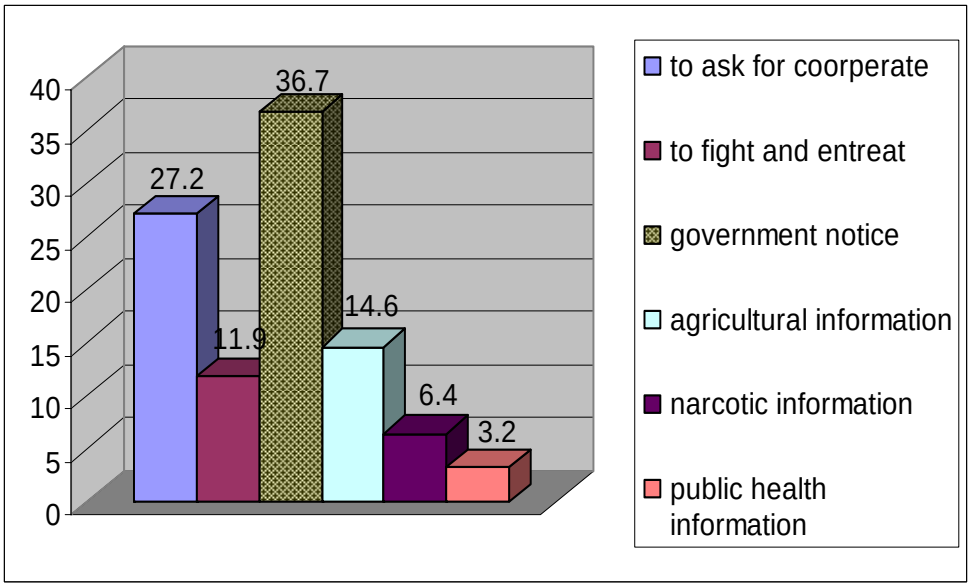

Figure 4-6 Information tower topics

The information technology usage and knowledge of local people

This part results about information technology usage such as computer and internet. There are 91.5% of subjects that have no desktop computers. The subjects about 38.8% have telephones and 39.4% have mobile phones. For computer usage, most of respondents (65.4%) never use computer and 75.2% never use internet. The

most task is typing (20.9%). About internet usage, the most topic (11%) is about education and the second one is for entertainment (6.5%).

Most of respondents (93.6%) agree that IT makes more information and knowledge access opportunity for them. The respondents about 61.8% interest to use internet for information access. Thus the most reason for not using internet is insufficient knowledge to use it (21.3%). The data about information usage of local people were shown in table 4-13 and figure 4-7 to figure 4-11.

Table 4-13 Information technology usage of local people

Information Usage	Village								Total	% Total
	1	2	3	4	5	6	7	8		
Having desktop computer										
yes	9	15	6	8	7	3	2	6	56	8.5
no	47	78	90	93	122	52	75	44	601	91.5
Having portable computer										
yes	0	1	0	0	0	0	1	0	2	0.3
no	56	92	96	101	129	55	76	50	655	99.7
Having fax machine										
yes	1	8	1	0	0	0	2	0	12	1.8
no	55	85	95	101	129	55	75	50	645	98.2
Having telephone										
yes	28	28	50	37	50	25	20	17	255	38.8
no	28	65	46	64	79	30	57	33	402	61.2
having mobile phone										
yes	19	46	39	33	44	15	42	21	259	39.4
no	37	47	57	68	85	40	35	29	398	60.6
Times to work with computer										
never	34	41	64	72	88	53	50	28	430	65.4
less than once per week	3	13	6	3	17	2	7	6	57	8.7
once per week	4	4	10	3	6	0	9	6	42	6.4
twice per week	2	6	5	8	6	0	1	3	31	4.7
three times per week	3	17	0	8	4	0	4	2	38	5.8
all days	10	12	11	7	8	0	6	5	59	9
Internet usage										
ever	15	41	22	21	28	2	18	16	163	24.8
never	41	52	74	80	101	53	59	34	494	75.2
most task that work with computer										
document typing	16	30	19	18	22	1	19	12	137	20.9
movie / music	1	7	0	1	4	0	1	0	14	2.1

Table 4-13 Information technology usage of local people (Continued)

Information Usage	Village								Total	% Total
	1	2	3	4	5	6	7	8		
gaming	0	6	4	0	8	1	2	5	26	4
programming	0	3	3	1	1	0	0	1	9	1.4
internet searching	5	6	6	9	6	0	5	4	41	6.2
never use computer	34	41	64	72	88	53	50	28	430	65.4
Internet searching topic										
educational	6	13	11	13	17	1	5	6	72	11
entertainment	2	15	4	2	7	1	6	6	43	6.5
occupation	6	12	3	4	2	0	3	2	32	4.9
e-mail checking	1	1	4	2	2	0	4	2	16	2.4
not applicable (never use internet)	41	52	74	80	101	53	59	34	494	75.2
IT make more information and knowledge access										
yes	51	89	94	94	118	54	71	44	615	93.6
no	5	4	2	7	11	1	6	6	42	6.4
Use internet for information access										
to be interested	34	63	63	57	75	34	44	36	406	61.8
not be interested	22	30	33	44	54	21	33	14	251	38.2
Reasons for not be interested										
not have computer	3	12	7	3	21	3	10	4	63	9.6
not have internet connection	2	4	0	1	0	0	2	0	9	1.4
don't know how to use	12	12	23	33	26	9	17	8	140	21.3
don't know about internet	5	1	3	7	7	8	3	2	36	5.5
not necessary	0	1	0	0	0	1	1	0	3	0.5
not applicable (to be interested)	34	63	63	57	75	34	44	36	406	61.8

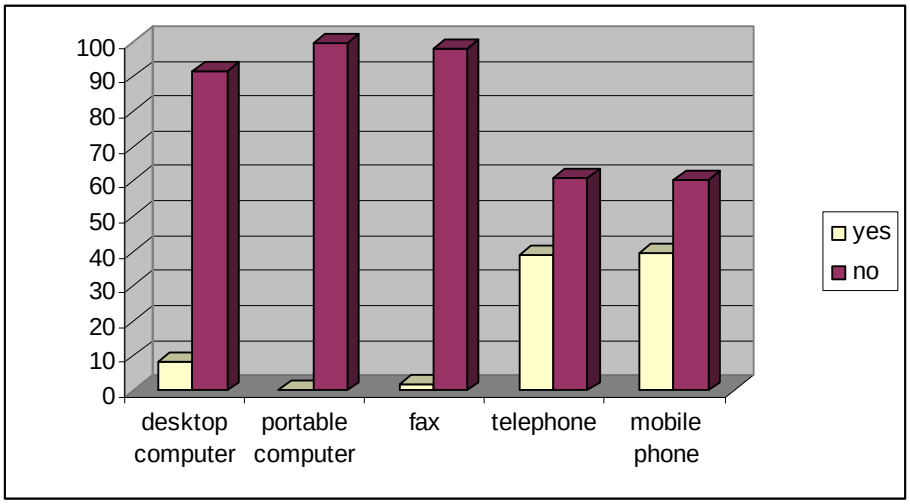

Figure 4-7 Information tools of local people having

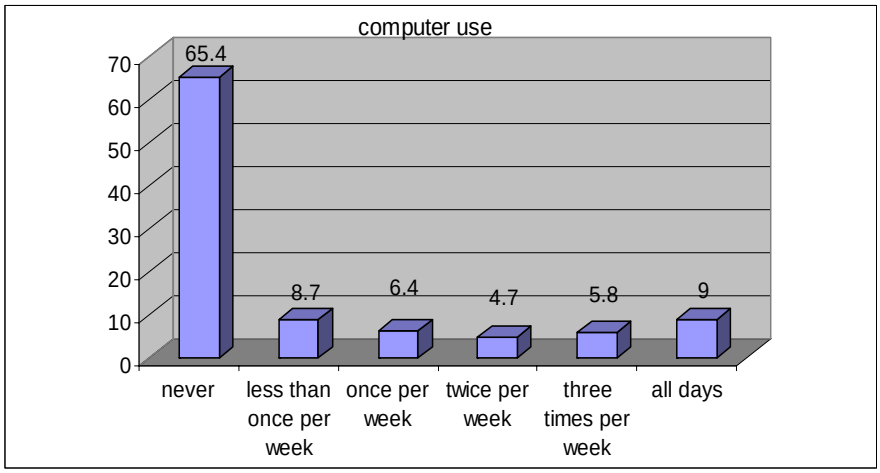

Figure 4-8 Computer usage of local people

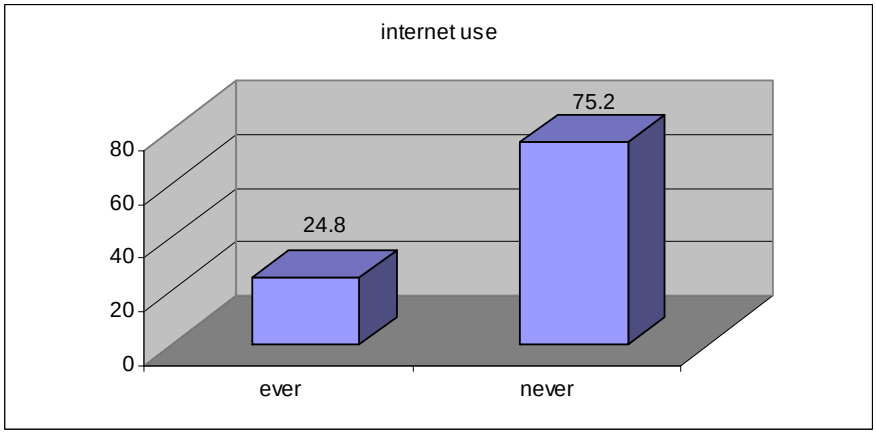

Figure 4-9 Internet usage of local people

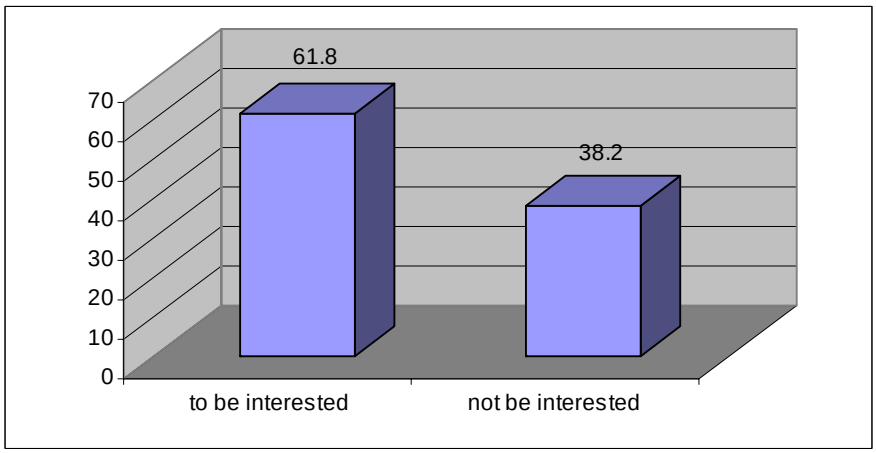

Figure 4-10 Local people who interested to use internet

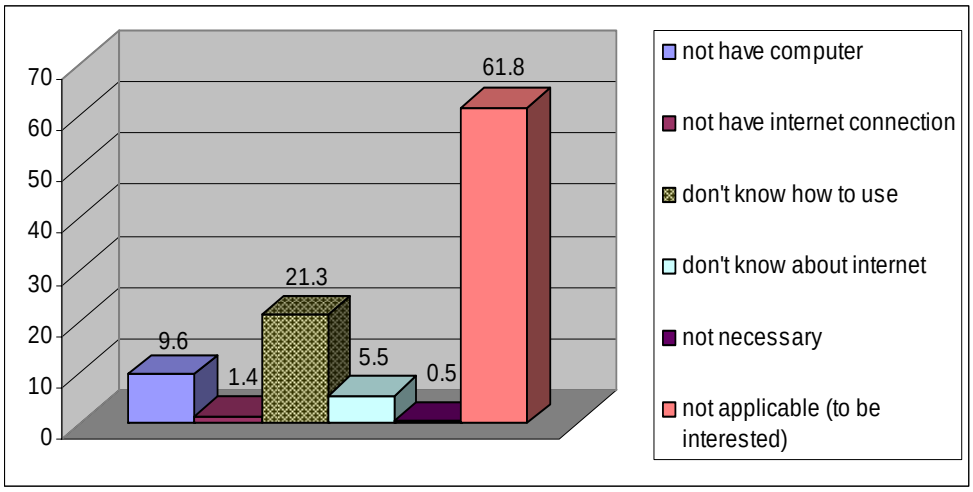

Figure 4-11 Reasons of local people who did not interest to use internet

3. Opinion about IT and information access of local people

The opinions about information infrastructure satisfaction of the subjects show that people have satisfaction about infrastructure in moderate and good level. The satisfaction is good (mean between 1.50 and 2.49) for electricity, transportation, location of subdistrict administration office (SAO), and aptitude of SAO as district information center. And the infrastructure that the subjects have moderate satisfaction level (mean between 2.50 and 3.49) are telephone service, government notice, information tower, publication document, local officer service, SAO information service, attention for information retrieving at SAO, establishing subdistrict internet center at SAO, state of village book center, location of village book center, and information and book at village book center. The table 4-14 showed satisfaction level about information infrastructure in local area.

Table 4-14 Satisfaction about information infrastructure in local area

infrastructure	Mean	S.D.	Satisfaction Level
Electricity	2.02	0.893	good
Telephone	2.56	0.991	moderate
Transportation	2.49	0.986	good
Government notice	2.93	0.857	moderate
Information tower	2.55	0.925	moderate
Publication document	3.17	0.844	moderate
Local officer service	2.84	0.918	moderate
Information service of SAO	2.83	1.004	moderate
SAO location	2.24	0.884	good
Aptitude of SAO as district information center	2.46	0.886	good
Attention for information retrieving at SAO	2.96	0.906	moderate
Establishing Subdistrict internet center at SAO	2.81	1.145	moderate
State of village book center	3.11	0.914	moderate
Location of village book center	2.82	0.902	moderate
Information and book at village book center	3.40	0.982	moderate

To consider about opinion for infrastructure that should be improved for better people service. The improve levels are very few, few, moderate, much, very much. The most kind of infrastructure should be improved in moderate level. The subject opined that electricity should be improved in a few level (mean = 2.37), so the government support and computer training for local people should be improved in much level. The other services such as village book center, information distribution, government notice, part of SAO in information officer service, and SAO location should be improved in moderate level. The data about people opinion for improving infrastructure service was shown in table 4-15.

Table 4-15 Opinion of people for infrastructure service improving

infrastructure	Mean	S.D.	level to improve
electricity	2.37	1.11	few
Telephone	3.19	1.097	moderate
Village book center	3.21	0.967	moderate
Information distribution	3.11	0.929	moderate
Government notice	3.28	0.851	moderate
Part of SAO in information distribution	3.49	0.94	moderate
officer service	3.39	0.896	moderate
government support	3.79	1.032	much
Computer training for people	4.01	1.126	much
SAO location	2.81	0.963	moderate

4. Knowledge and opinion about community access center

People opinion about subdistrict internet project

Consider about people opinion and knowledge in community access center. The results of this section show that there were 69.7% do not known about subdistrict internet project. However the subjects about 79.3% agree that subdistrict administration organization is appropriate for establishing the subdistrict internet center. The favorite topic that people want to access was the government notice information (31.8%). Most of them (85.2%) agree with topic that subdistrict internet project could improve information access.

About reasons for advantage of subdistrict internet project, the most reason was the place for information retrieval (48.1%), and the second one (30.1%) was about that making quick information access. For reasons of disadvantage of subdistrict internet project, the most reason was do not known about computer/cannot use (12.9%). So the statistics data of people opinion about subdistrict internet project was shown in table 4-16.

Table 4-16 People opinion about subdistrict internet project

People opinion	Village 1	2	3	4	5	6	7	8	Total	% Total
Know about subdistrict internet project										
yes	30	39	21	27	26	15	28	13	199	30.3
no	26	54	75	74	103	40	49	37	458	69.7
SAO appropriate for establish subdistrict internet center										
agree	38	64	91	89	90	45	61	43	521	79.3
disagree	18	29	5	12	39	10	16	7	136	20.7
Most information that people want to receive from SAO										
Cost of consumer goods	9	22	1	6	8	7	8	5	66	10
Agricultural information	5	23	32	38	38	27	19	4	186	28.3
Public health information	9	6	6	12	14	3	12	5	67	10.2
Local/subdistrict product	1	15	5	4	7	0	3	2	37	5.6
Employee recruitment	4	12	16	15	21	4	15	5	92	14
Govt. notice information	28	15	36	26	41	14	20	29	209	31.8
Subdistrict internet project is useful for information access										
yes	51	82	83	82	106	55	60	41	560	85.2
no	5	11	13	19	23	0	17	9	97	14.8
Reasons about advantage and disadvantage of subdistrict internet project										
Quick information access	11	14	36	31	57	22	10	17	198	30.1
Place of information retrieval	36	49	37	47	45	33	49	20	316	48.1
Get information that wanted	0	7	0	0	1	0	1	0	9	1.4
Convenient for information seeking	4	12	10	5	3	0	3	4	41	6.2
not necessary because have own computer and internet	0	1	0	2	1	0	0	1	5	0.8
not necessary because cannot use/unknown	4	10	11	16	22	0	14	8	85	12.9
may have inappropriate information	1	0	1	0	0	0	0	0	2	0.3
not necessary because not live in local area	0	0	1	0	0	0	0	0	1	0.2

Reasons for establishing information access center

The most of subjects agree that SAO is the center of local government administration which is appropriate to establish the information access center (52.8%). SO the second reason was “local people can use conveniently” (20.5%). In the table 4-17 showed data of local people reasons about subdistrict administration organization appropriate to establish information access center.

Table 4-17 Appropriateness of SAO to establish information access center

People opinion	Village								Total	% Total
	1	2	3	4	5	6	7	8		
Appropriateness of SAO to establish information access center										
SAO is the center of local government administration	30	37	56	49	73	31	45	26	347	52.8
Local people conveniently to use	7	22	31	35	6	6	13	15	135	20.5
Have tools and technologies to disseminate information	1	4	1	1	1	8	3	0	19	2.9
Have officer for advice and practice	0	1	3	4	10	0	0	2	20	3
Not applicable (disagree)	18	29	5	12	39	10	16	7	136	20.7

Other reasons of local people

The data revealed that people who disagree with the opinion that SAO is appropriate for establish community access center and choose other place. About 11.6% (76 persons) chose school to establish information access center. Subjects about 6.8% chose village book center, 1.5% chose other place and 0.8% chose temple to establish information access center. So about other place that appropriate to establish information access center, people opinion was shown in table 4-18 and figure 4-12.

Table 4-18 Other organization to establish community access center

People opinion	Village 1	2	3	4	5	6	7	8	Total	% Total
other center that appropriate to establish information access center										
School	9	15	5	8	22	3	10	4	76	11.6
Temple	0	2	0	0	2	0	1	0	5	0.8
Village book center	6	11	0	3	13	7	4	1	45	6.8
Other	3	1	0	1	2	0	1	2	10	1.5
Not applicable (agree with SAO)	38	64	91	89	90	45	61	43	521	79.3

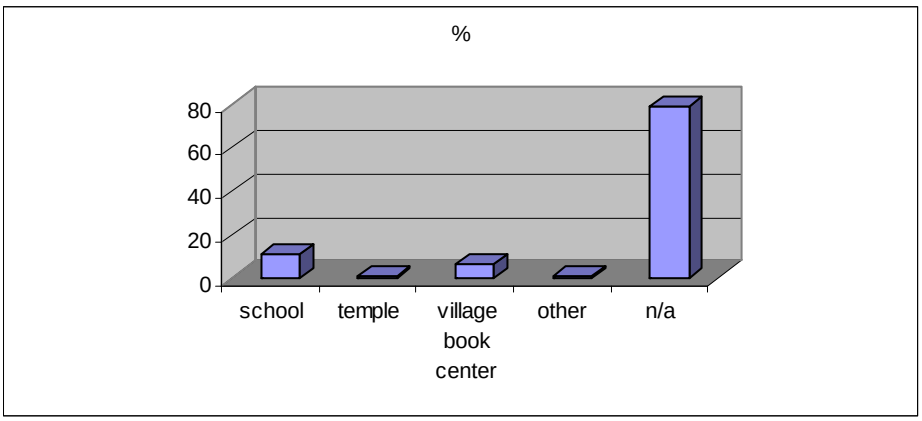

Figure 4-12 Other place for establish CAC .

When consider about reasons for implement community access center at other place, there were 8.7% agree with school appropriate for establish community access center because school was the center of learning. And the respondents about 6.8% agree with village book center because that there was convenient to use. So the reasons of people that agree to establish community access center was shown in table 4.19.

Table 4-19 People reasons for establish CAC at other place

People opinion	Village 1	2	3	4	5	6	7	8	Total	% Total
Reasons for establish CAC at other place										
School because school is center of education and learning	6	11	3	6	18	3	6	4	57	8.7
School because there are teacher for learning	3	4	2	2	3	0	4	0	18	2.7
School because have roomy area	0	0	0	0	1	0	1	0	2	0.3
Village book center because convenient for people usage	5	11	0	3	14	7	4	1	45	6.8
other place because government office maybe not universal access for people	2	1	0	1	1	0	1	0	6	0.9
other place because SAO have a lot of other works	2	0	0	0	0	0	0	2	4	0.6
Village book center because near home	0	2	0	0	1	0	0	0	3	0.5
Temple because temple is center of community	0	0	0	0	1	0	0	0	1	0.2
Not applicable (agree with SAO)	38	64	91	89	90	45	61	43	521	79.3

4.2.2 Survey results about community leader and officer.

1. General characteristics of community leader and officer

For the community leader and officer, consider about 50 subjects. There are 62% of male and 38% of female. Most of them had age range about 31 – 60 years old (76%). About education background, 38% of subjects have finished at primary school, 26% for secondary school, and 10% for bachelor degree. There are a lot of community

positions such as SAO chairman, deputy, officer, Kamnan and other community leader. The most is SAO council member (16%). Consider about average income, most of them (42%) have average income less than 5,000 baht, the monks are not surveyed about monthly income. The General characteristics of community leader and officer are shown in table 4-20 and figure 4-13.

Table 4-20 General characteristics of community leader and officer

General characteristics		frequency	Percent
Gender	male	31	62.0
	female	19	38.0
Age (years)	15-20	2	4.0
	21-30	8	16.0
	31-40	14	28.0
	41-50	13	26.0
	51-60	11	22.0
	more than 60	2	4.0
Education background	Primary school	19	38.0
	Second school	13	26.0
	High school	11	22.0
	Diploma	2	4.0
	Bachelor's degree	5	10.0
Position	SAO chairman	1	2.0
	SAO deputy	1	2.0
	SAO officer	3	6.0
	SAO council member	8	16.0
	Kamnan	1	2.0
	Village headman	5	10.0
	Village headman assistant	7	14.0
	Village committee	3	6.0
	Community health care officer	2	4.0
	Monk	9	18.0
	Others	10	20.0
Average monthly income (Bath)	Less than 5,000	21	42.0
	5,001-10,000	15	30.0
	10,001-20,000	4	8.0
	20,001-30,000	1	2.0
	have none income	9	18.0

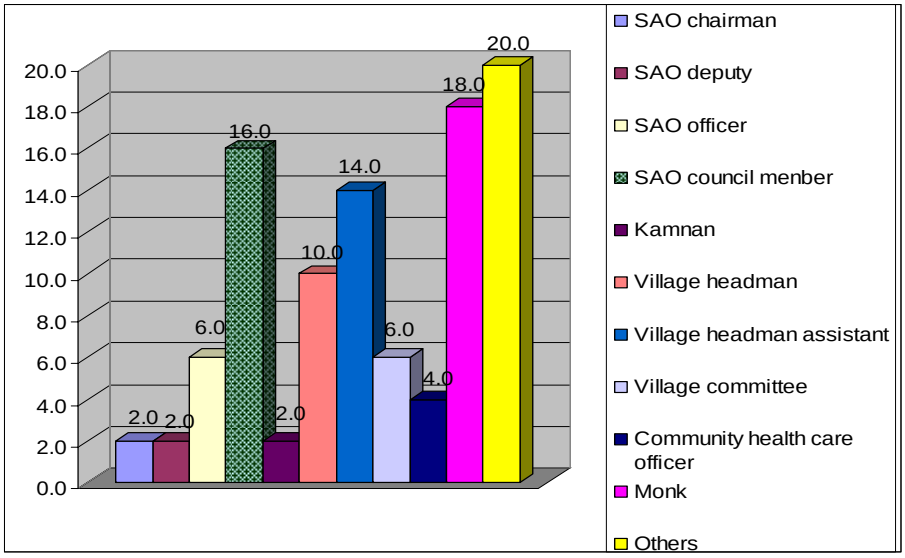

Figure 4-13 Community roles of local leader and local officer (percent)

2. Computer usage of community leader

For computer usage of the subjects, most of them never use computer (70%). And only 4% of subjects use computer more than 5 times per week. Consider about computer knowledge, 62% of subjects know about computer but they don't know how to operate it. And 14 % of subjects don't have any knowledge about computer. About table 4-21 that was shown below explained data of computer usage of local leader and officer.

Table 4-21 Computer usage of community leader and officer

Computer usage	frequency	Percent
Frequency about computer use		
Never	35	70.0
Less than once per week	5	10.0
1-2 times per week	5	10.0
3-4 times per week	3	6.0
More than 5 times per week	2	4.0
Computer knowledge		
unknown about computer and profit of computer		
yes	7	14.0
no	43	86.0
know about computer but cannot operate and work with		
yes	31	62.0
no	19	38.0

3. Opinion and attitude of community leader and officer

Opinion about working conveniently and appropriately

This results consider about the subjects except monks. There was good opinion level in topics about general working, officer working unity, IT infrastructure for working and attitude about benefit and working with computer and information technology. The other topics such as project presentation, budged expenditure, appropriation about government local policy, and community cooperate are in moderate of opinion level. The data for opinion of community officer about working convenient and appropriation is shown in table 4-22.

Table 4-22 Opinion of community officer about working convenient and appropriation

Opinion of community officer	Mean	S.D	Opinion level
Opinion about working conveniently and appropriately			
General working	2.12	1.053	good
Project or plan presentation	2.56	0.923	moderate
Budged expenditure	2.93	0.932	moderate
Appropriate about government policy with local social condition	2.73	0.807	moderate
People corporate with community	2.61	0.737	moderate
Officer working unity	2.44	0.673	good
Information technology infrastructure for working	2.15	0.615	good
Attitude about benefit and working with computer and information technology	2.24	1.019	good

Opinion about local people information access

The subjects had opinion level as moderate about information access of local people. Except some topics were in low level, in computer usage and knowledge of local people (mean = 3.84, S.D. = 0.738), computer haves (mean = 4.16, S.D. = 0.71), and information access opportunity ratio between local people and urban community

(mean = 3.54, S.D. = 0.762). Data of community officer opinion about information access of local people is shown in table 4-23.

Table 4-23 Opinion about local people information access

Opinion of community officer	Mean	S.D	Opinion level
Opinion about information access of local people			
Opportunity about information and knowledge seeking from local information media	2.72	1.089	moderate
Concernment about information seeking from local information media	3.06	0.843	moderate
Computer usage and knowledge of local people	3.84	0.738	low
Computer having of local people	4.16	0.71	low
Utilization of information and data receiving	3.26	0.723	moderate
Information seeking and asking at SAO about government services	3.04	0.903	moderate
Information seeking in topic of occupation	3.38	0.697	moderate
information seeking in new science and technology	3.4	0.926	moderate
Information access opportunity ratio between local people and urban community	3.54	0.762	low

Opinion about appropriation of SAO for establish community access center.

For the opinion about appropriation, there was good level of opinion in topics about SAO location to aid for people service, Information system at SAO, information infrastructure service, and appropriation to establish subdistrict internet project. The moderate level of opinion for IT and internet knowledge of local officer, government budget for IT support in local area, and feasibility to establish community access center. In table 4-24 show the opinion of local leader and officer about appropriateness of subdistrict administration organization to establish community access center.

Table 4-24 Opinion about appropriation to establish community access center

Opinion of community officer	Mean	S.D	Opinion level
Opinion about appropriation of SAO to establish community access center			
SAO location to aid for people service	1.84	0.976	good
SAO information system such as computer and network	2.44	1.091	good
IT and internet knowledge of local officer	2.64	0.802	moderate
Government budget in part of support for information access of local people	3.42	1.108	moderate
Appropriation of SAO to establish subdistrict internet project	1.96	1.068	good
Information infrastructure service	2.42	0.785	good
Feasibility to establish subdistrict internet and community access center in local area	2.52	1.266	moderate

Reasons about appropriation of SAO to establish community access center.

In this case, most reason is that SAO have readiness in tools, officer and budget (36.0%), and 30% was reason about the center of community information and knowledge dissemination. When consider about information access, the subjects for 84% agree that it was necessary for local people to have more opportunities in information access especially from internet. Most subjects (68%) agree that potentiality of information and knowledge seeking of local people was in moderate level, and 28% agree with low level. So the data about reasons that SAO appropriate to establish community access center of community leader and officer is shown in table 4-25.

Table 4-25 Reasons that SAO appropriation for establish community access center

Opinion	frequency	percent
Reasons about SAO appropriate to establish community access center		
SAO is center of community information and knowledge disseminate	15	30.0
SAO is center of community and convenient to travel	13	26.0
SAO have readiness in tools, officer and budget	18	36.0
Disagree / not appropriate	4	8.0
It is necessary that local people have more opportunity in information access especially internet		
yes	42	84.0
no	8	16.0
Potentiality of local people about information and knowledge seeking in several kind of media		
low	14	28.0
moderate	34	68.0
high	2	4.0

Opinion about information access support for local people

For information access opportunity of local people, the opinion of community leader is that local area should be supported in topics of government encouragement and improvement of local people knowledge in high level. The topics that should be improved in moderate level were about community officer training, IT infrastructure, and attitude and alert of local people in information and knowledge seeking. So the opinion of community leader and officer about supportable topics for information access for local people is shown in table 4-26.

Table 4-26 Opinion about supportable topics for information access for local people

Opinion of community officer and leader	Mean	S.D.	Opinion level
Should be supported about government encouragement	1.48	0.71	High
Should be supported about local people knowledge improvement	1.38	0.6	High
Should be supported about community officer training	1.58	0.64	Moderate
Should be supported about IT infrastructure	1.68	0.58	Moderate
Should be supported about attitude and alert of local people in information and knowledge seeking	1.76	0.74	Moderate

4.3 Factors Relationship

This section shows about some factors that should be involved with opinion of information access center and community access center establishment. So the relationships between two group-oriented variables could be solved with Pearson Chi-square methodology. The sections of factors were shown below.

Section 1 : General characteristic of people

- Gender
- Age
- Location
- Occupation
- Education background

Section 2 : Information access

- Local book center usage
- Computer usage
- Internet usage
- Interesting for information seeking

Section 3 : Local infrastructure service

- SAO service facility
- Satisfaction of local officer service
- SAO location

The conceptual framework of this part was shown in next section.

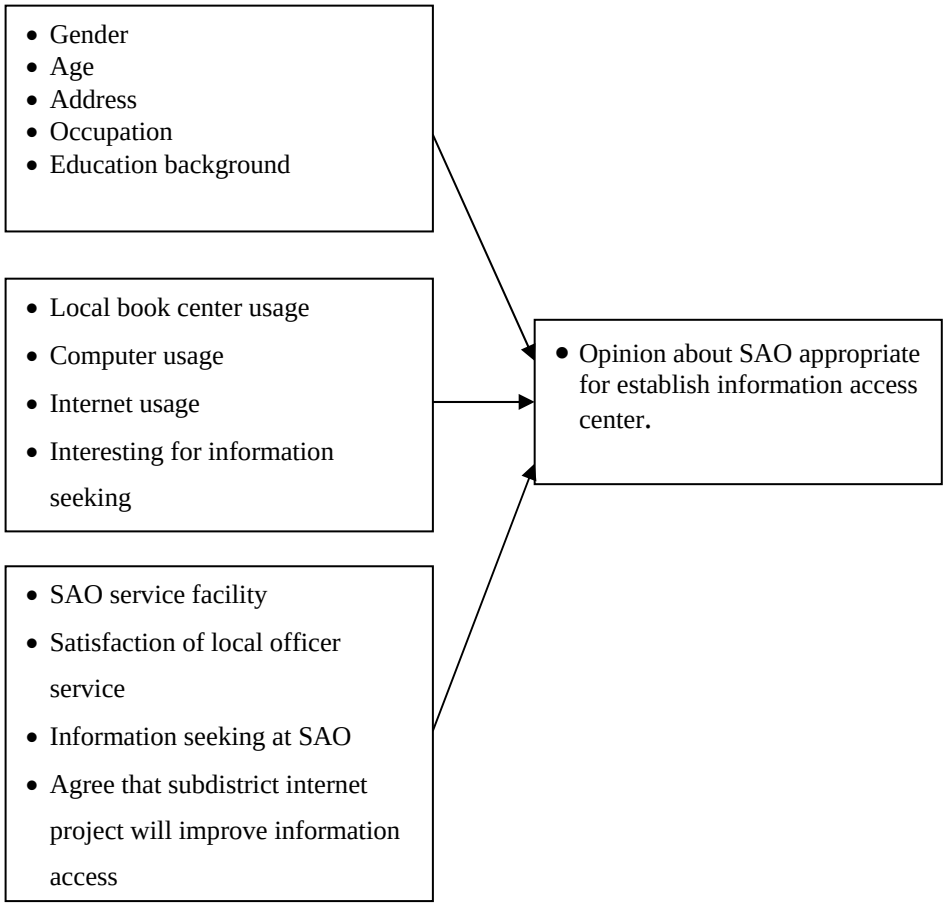

Figure 4-14 The conceptual framework of related factors with people opinion

According to the Pearson Chi-square test, there are five factors that are related to the opinion about appropriation for SAO to establish information access center. So the results in each variable are shown below.

1. Gender : There is relationship between gender and opinion about appropriation for SAO to establish community access center with the significant of 0.016, and contingency coefficient about 0.096.

2. Age : There is relationship for age and opinion about appropriation for SAO to establish community access center with the significant of 0.006, and contingency coefficient about 0.106.

3. Address : There is relationship between address and opinion about appropriation for SAO to establish community access center with the significant of 0.000, and contingency coefficient about 0.106.

4. SAO service facility : There is relationship between SAO service facility and opinion about appropriation for SAO to establish community access center with the significant of 0.000, and contingency coefficient about 0.215.

5. Satisfaction for local officer services : There is relationship between satisfaction about local officer services and opinion about appropriation for SAO to establish community access center with the significant of 0.007, and contingency coefficient about 0.154.

The test results of local people factors that involved with opinion in topic of subdistirct administration organization appropriation to establish information access center was shown in table 4-27.

Table 4-27 Local people factors that involve opinion about appropriation for SAO to establish information access center

Factors	Pearson Chi-Square Value	df.	Asymp. Sig. (2-sided)	Fisher's Exact Test / Exact Sig. (2-sided)	Contingency coefficient
Gender	6.082	1	0.014	0.016*	0.096
Age	18.116	6	0.006*	-	0.106
Address	38.234	7	0.000*	-	0.235
Occupation	9.406	7	0.225	-	0.119
Education	2.329	5	0.802	-	0.059
local book center usage	1.15	4	0.886	-	0.042
computer usage	5.391	5	0.370	-	0.09
internet usage	1.947	1	0.163	-	0.054
interesting for information seeking	0.972	2	0.615	-	0.038
interesting for internet use	2.487	1	0.115	0.137	0.061
SAO service facility	31.892	1	0.000*	-	0.215
satisfaction for local officer service	14.074	4	0.007*	-	0.154
Information retrieval at SAO	8.695	4	0.069	-	0.114
Subdistrict internet project will improve information access	3.529	1	0.060	0.077	0.073

CHAPTER V
READINESS TO ESTABLISH COMMUNITY ACCESS CENTER

This chapter discusses the information access opportunity of the target area as well as the readiness of the community to establish its access center.

5.1 Information access opportunity of local people.

Consider about section of information access opportunity of local people in 657 samples from 8 villages, the results were shown in following sections.

- Information access and usage

According to table 4.12, the results showed that the most participants (80.7%) interested in seeking new information and knowledge. However, there was difference information topics that were interested such as occupation oriented, local information or education oriented. Most of them use television as major media for information receiving (83.1%), and television was the most easily media for information access (78.8%). This study found that the subjects about 42.6% never use the service of local book center and 23.6% use less than once per week. Only 9% go to local book center all days. About information tower, most information topics were government notices (36.7%) and cooperate asking (27.2%). The results show the participants have difference interesting for information topics. And found that television was the most media that local people use for information access. The participants who never use the local book center (42.6%) should get less information access opportunity than participants that use the service of local book center.

Figure 5-1 Village Book Center

- Information technology access usage and access

This section involve IT tools, computer and internet usage. The results that were shown in table 4.13 found that only 8.5% of participants had desktop computer and 0.3% had portable computer. Most of them did not have telephone (61.2%) and mobile phone (60.6%). The most participants (65.4%) never used computer and 75.2% never used internet. The participants about 38.2% were not interest in using internet for information access. The most reason was “did not know how to use” (21.3%) and the next reason was they do not have computer” (9.6%). The reason about know-how was the most topic that made participants not to be interested in internet usage. And that found that found the participants who interested in using internet come from both people who have computer and people who have no computer. So the reason about “do not have computer” was one of reasons that make people not to be interested about internet using. So the participants who did not have computer interested in using internet about 58.7%, and the participants who have computer and interest in internet using about 94.6%. It shows that computer haves correlate with internet usage interesting.

In this section shows that respondents have difference information access opportunity especially from internet, which was one of major way to access many information of the world at present. People who can use computer and internet can access much information they want. And found there are not only the gap of

information access opportunity between rural people and urban people, but include difference opportunity of information access within rural people group.

When consider about information access opportunity, which involves digital divide problem. Dr. Taweesak Koanantakul, the director of the national electronics and computer technology center (NECTEC) used to explain in topic of digital divide in NECTEC Journal (4) about the factors that involve information access opportunity problem. Dr. Taweesak concluded about the factors that correlate with information access opportunity in four topics. So according to the research results, factors that involve with digital divide problem could be showed in following section.

1. Information infrastructure

This section involved opportunity of electric use, telephone and mobile phone usage, computer penetration, internet usage, and satellite usage. From this research result, there was difference of computer and internet usage, that could make difference in information access opportunity.

2. Population group

The characteristics of population could indicate digital divide such as income, education background, nationality, culture, gender, living area, and so on. According from the results, the participants have many differences in age range, education background, occupation, ect. So these factors involve about opportunity in information access.

3. Geopolitics

The geopolitics or policy factor involved in increasing or decreasing the information access opportunity such as information technology industrial support, tax support, and infrastructure support. For this research consider about national policy of information technology infrastructure include laws, IT2010 policy, subdistrict internet project and the local policies such as information tower and local book center. These will support for information access opportunity for people.

4. Other factors

Other factors that involve digital divide problem such as organization characteristics, ect.

According to these factors, the results e\were explained many differences in personal background of the participants. So there were differences in background of computer and internet using, which made difference of information access opportunity of local people.

5.2 Hypothesis discussion : According to the Thailand government policy, the local authority is ready in establishing the community access center.

About the readiness to establish community access center, Jumper-Thurman, P.J. and her team (8) had explained about the community readiness model, and five dimensions to be pertinent to assessing community readiness. There were 1) community efforts, 2) community knowledge of efforts, 3) leadership, 4) community knowledge and 5) resource. So those topics were specific for some subject such as in the Jumper-Thurman study ("community readiness about alcohol and other drug abuse prevention"). However, this study had adapted some topics matching of community readiness dimensions for studing about the establishment of community access center.

This research considered about four dimension of readiness in topics of infrastructure, information and media, government policy, and local community. So the results were taken from primary data and secondary data, from document research and field research in local community. And discuss with other related documents and researches in each section. The results of this section could be discussed in following readiness section.

5.2.1 Information infrastructure

When consider about section of information infrastructure, the results show many kinds of infrastructure that involve information access of local people. Then consider about opportunity of electric use in table 4-5, there were electric use in all villages and more than 87% have electric use (5 villages were 100%). All villages (except the eighth village) had asphalt road for transportation, and all villages had concrete road in total distance about 6,070 meters in 20 routes. So the basic routes of district were laterite road, there were 18 routes of laterite road with total distance about 15,769 maters. Table 4-7 showed only four villages had public phones and the

data from table 4-8 show two villages had local healthcare centers. All villages had local book centers and six villages had information towers. About school and temple, there were three schools in three villages and three temples in three villages too.

Figure 5-2 Information tower

About local people opinion from the results in table 4-14, the participants had satisfaction in good level in electricity, transportation, SAO location, and Aptitude of SAO as district information center. They had satisfaction of others infrastructure in moderate level. Consider about SAO location, only village five had moderate level of satisfaction for SAO location. In the community officer opinion that involve information infrastructure for working, there was good level of opinion about this topic. These show that the subdistrict had most of basic information infrastructure such as electricity and transportation system include both information tower and telephone line. However, some villages that located far away from SAO did not had good level of satisfaction in good level in case of establishment of community access center of SAO.

Consider about the study of Susan Rose about topic of “The Role of Community Access Centers in Bridging the Technology Gap” (5). It had the part of physical requirements analysis of CAC. Her study shows four important topics of physical requirements of CAC (location, space, equipments and staff). This research analyzed the physical condition by following section.

- Location

The location of SAO was in third village and approximately in the center of subdistrict. When consider about results of people satisfaction about SAO location, Most of respondents had good level of satisfaction in SAO location that is appropriate to be CAC. About community officer, they had good level of opinion about SAO location for people service (mean = 1.84, S.D.= 0.976). So these indicate about the location of SAO appropriates for people services.

- Space

When consider about space and place for establish the CAC, the SAO did not have large room for establish the large computer center. But there was moderate room for this project that used to be the book center. Only ten to twelve persons could comfortably occupy it at same time. It should be enough for first state of project development.

Figure 5-3 Subdistrict administration organization

- Equipment

The equipment that support for establish the CAC. There were book self, newspaper self, table and chair, telephone line, information tower, and many kind of knowledge posters. So they supported the CAC establishment. The results about opinion of community leader and officer found the community leader and officer had

good opinion level in topic about information infrastructure service and SAO information system such as computer. However, there was lack about computer for people service and other related tools such as server and network equipment. The SAO have only computer for officer work, not for people use. So this topic should be supported.

- Staff

Now the SAO have no staff for IT service, because the CAC did not establish yet. When considered about research results about opinion of local officer and leadership, community officer had good opinion level for topic about SAO appropriation to establish the subdistrict internet project. And they had moderate opinion level about IT knowledge of local officer. In addition, they had good level for attitude of benefit and working with computer and information technology.

When consider about four topics of physical condition, there were lacking of computer equipment. However the community has the most condition to support the community access center establishment such as location, space, telephone line, staff, and other related equipments.

5.2.2 Information

About information that community had, table 4-13 showed most participants (78.8%) had received most information from television. The most interesting topic was occupation knowledge (40.3%) and most of participants (52.5%) used information for self-development and increasing knowledge. So when consider about local information. The major way to receive information was local notice (information tower) about 68.3%. When consider about the way that people could retrieve information, There were many posters about many kind of knowledge such as agricultural, health care, education, laws, and other government notice. The results show that most participants (57.1%) retrieved much information from television or radio. But only 5.2% use internet for information retrieving.

For local information, there were many sources of information such as information tower, book from local book center, newspaper, and knowledge poster. For documents that service at village book center. There were difference resources from each place. According to data collection (Table 4-9), the most information media

was school book and the others were knowledge magazine, advertising poster, publication sheet, entertainment magazine and newspaper. The most books were very old and damaged. So the second village had no document except newspaper. Form the interviewing, it's because the documents were robbed in many times. That shows about lack of supervised and managed in some book center. Following form results, the participants in village 1, 2, 4, 6, 7 had moderate level of satisfaction about information and book at local book center, and other village had poor level of satisfaction about this topics. However, the participants have moderate level of satisfaction about information service at SAO. And the participants had moderate level of satisfaction about government notice, information tower, and publication document. However, SAO had many information to serve people especially publication document and newspaper, and lack of internet service. The results show the most topics of information that the participants want to know from SAO was information about government notice (31.8%), and the second was agriculture information (28.3%).

This section shows that there was many information that SAO get and service in community. The SAO could support for newspaper, government notice and other knowledge document. However there was lack of information from internet and modern book or document for people service.

Figure 5-4 Example of books at local book center

5.2.3 Community

The readiness about community section was important objective in this research. The results came from both local people and community leader and officer. Consider about the results in section of local people opinion about community access center establishment, the respondents had good level of satisfaction about aptitude of SAO as subdistrict information center. And they have moderate satisfaction level for topic “attention for information retrieving at SAO”. The respondent had moderate satisfaction level about the establishment subdistrict internet center at SAO. However from table 4-13, the most respondents (93.6%) agree that IT makes more opportunity and knowledge accesses, and 61.8% intending to use internet for information access. About SAO service, Most of respondents (80.4%) have convenient about SAO service facility.

Consider knowledge about CAC establishment from table 4-16, the most respondents (69.7%) did not know about subdistrict internet project. But 61.8% of respondents interesting to use internet and 79.3% agreed that SAO was appropriate to establish the subdistrict internet center. The most reason was subdistirct internet center could be the place for information seeking (48.1%). So the respondents about 52.8% had reason in topic “SAO appropriate to establish community access center” owing to SAO was the center of local government administration, and 20.7% disagree that SAO becoming to establish community access center. School was the second organization that the participants agree to establish the community access center. Then consider about factors that involve the opinion about topic “Appropriation of SAO to establish information access center”. The research results show about four factors that correlated (Table 4-25). There are factors about 1) gender, 2) age range, 3) address, 4) SAO service facility and 5) satisfaction about local officer service.

For section about opinion of community leader and officer in, they had good opinion level about appropriation of SAO to establish subdistrict internet project. And they had moderate opinion level about feasibility to establish subdistrict internet and community access center at SAO. The respondents of community leader and officer for 84% agree that there was necessary for local people to have more opportunity in information access from internet.

This section shows that most local people and community leader and officer supported in establishing the community access center at subdistrict administration organization. And they had good opinion level about information access from internet. However, some parts should be supported. The respondents of local people agreed that two topics should be supported in much level about government support and computer training for people. That consisted of opinion of community leader and officer. The community leader and officer agreed that two topics that should be supported about government encouragement and people knowledge improvement.

5.2.4 Government policies

From results about opinion of community officer, they had moderate opinion level about topics of project presentation, budget expenditure, and the appropriateness about government policy with local social condition. The document researches found that Thai government had many policies and projects about information technology that support the establishment of community access center that was shown in following section.

- The constitution law in section 78 had provide that the government must support in part of distribute for local authority, business development, public utility, and information infrastructure for universal access and universal service.

- The information technology infrastructure laws development for support knowledge society, and information infrastructure development.

- The IT-2010 policy specify in topic of e-Society section that supported to the establishment of community access center in Thailand. That was correlation between many agencies such as NECTEC, Community Organization Development Institute (NGO), and private company.

- Subdistrict internet project that was supported by TOT Corporation to improve working performance and people service. This project was in the phase of implementation and system development. So its goal is to establish in all SAOs (about 7,000 SAOs) within year 2003. The ministry of interior supported about information center for people service. In addition, there was the “TaiTambon.com” to service SAO data and local product for more than 1,000 SAOs. And there are training projects for local officer (2 persons per 1 SAO) about information system for people service.

About this government policy section, Thai government had many policies and projects for increase information access opportunity of people and support the establishment of community access center at subdistrict administration organization, include the local officer training.

When consider four dimensions of readiness to establish community access center. There were supports in all topics about infrastructure, information, community, and government policies. Especially, government policies such as telecenter, information technology infrastructure laws, and subdistrict internet project, these had readiness to support the establishment of community access center in rural area. Futuremore, local people and community leader and officer supported the benefit of community access center too. The local SAO had information from publication document, book, newspaper, ect. to service local people. So according to government policy, the subdistrict administration organization had ready to establish the community access center.

However, there are some topics that need more support in high level. There were the topics about government encouragement and improvement about information technology knowledge for local people. And the lack of tools about computer and network equipments should be supported too. In addition, modern information such as book and newer document should be supported to.

When consider about the research of Benjamas Watcharopas in topics “Readiness of Subdistrict Administration Organization about Internet Service in Chonburi Province” (23). Both results show about same tendency, that SAO had readiness in case of internet service. The Benjamas’s Study shows about readiness in topics of internet implement at SAO, knowledge and opinion, and environment. Her research found the obstacle of subdistrict internet project. They were not ready in term of fund, technical support, and expert human resources to support internet service. However, the research had studied only SAO section and did not include about local people section and not only in rural community. It should have some difference condition and results.

5.3 Saithong subdistrict and its readiness

According to the survey results and current situation in Saithong subdistrict, basic condition in infrastructure, information, people and community, and also the government policies show the subdistrict administration organization have enough readiness to implement the community access center such as subdistrict internet project. The readiness of this area is quiet good for establish and operate community access center in first phase service. This area have been joined the subdistrict internet project and received computer set by the end of 2002 or first half of 2003. However when consider about long term effective operation and service, this area need more development for the four domains as articles below.

1. Information infrastructure

To improve the management and services, Saithong subdistrict need more space for comfortable use and should have more furniture such as chairs, table, and book shelves. About the computer set. The SAO should have personal computer, scanner, laser printer, UPS, modem, and desktop speaker. The SAO need more telephone line to link for internet access of this new computer. The SAO officers would be trained about subdistrict internet project operation for services and basic maintenance.

2. Information

Some information provide in Saithong subdistrict at present is too old and out-of-date such as books and some board information. The use of information tower for disseminate knowledge broadcasting is very limited. It should be broadening for more information to improve the quality of life of the people in the area. For the village book center, it should be developed to have more books and should more promotion to encourage the people to come and read all the books.

3. Community

Both local people, and community officer and leader agree to implement the subdistrict internet project. But this project needs more participation support and responsibility from the local people in implementing the project.

4. Government policies

According to the government policy in establishing the community access center with the implementation of all the computer set, the government was already encouraged the local community to follow this policy but the local authority also needs to promote this policy and encourage the people in participating to the project. And also some basic training course in computer should be arranged for the local people.

CHAPTER VI
CONCLUSION

The contents of this chapter are the research conclusion, discussion, research obstacle and limitation, and also the suggestion for future studies.

6.1 Conclusion

This research was survey-descriptive oriented that aimed to study about the readiness for establish community access center in rural area. Because there were not enough development in many aspects for the countryside area include information infrastructure development. That made a gap for information universal access and universal service. And the establishment of community access center called "Subdistrict Internet Project (Internet Tambon)", was one of many projects that could increase information access opportunity of rural people. This research objectives were to study about information access opportunity in rural area include local information infrastructure, and to study about readiness to establish community access center in rural community. This research use area of Saithong subdistrict at Pamok district, Angthong province as case study due to there were complete social organization and rural community climate. This case surveyed in two sections about local physical infrastructure and community member.

This research collected data from both primary data and secondary data. There were document research and field research. So the population included in this research came from two groups. The first was local people in target area from eight villages (657 participants), and the second one came from the community leader and officer such as SAO officer, teacher, village header, monk, ect. (50 participants) . The research tool was the questionnaire for collecting population data in two different forms for two population groups, and survey paper for infrastructure data collection. The population data was collected personally by the researcher and other assistant

persons such as headman of villages during October 1st, 2002 to December 25th, 2002. The population data was analyzed using statistical computer program in both descriptive and inferential statistics.

After surveyed and analyzed the collected data, the results of this research showed about overall image of local information infrastructure, information access situation, and opinion of local people. The readiness to establish community access center was the important point of research. The analysis based on infrastructure data and community opinion to study four dimensions of readiness. The results showed the community access center establishment was supported from physical infrastructure, local people and community leader, information, and government policies. The results showed that most people and community officer had good attitude and supported for community access center establishment at subdistrict administration organization. And many government policies were supported too such as subdistrict internet project. But there were lack in many points for long term operation; such as computer tools for people use, staff knowledge for IT, modern document for serviced, information from internet, which need more people knowledge about information technology and also, people participation and ownership. However in overall condition, the community had readiness to establish community access center for first phase implementation and operation.

6.2 Discussion

6.2.1 Research Limitation

In this study, there were some limitation points of this research due to some obstacles and limitations that is shown in following section.

- This research is just only the example of establishing IT center in the rural area of Thailand.
- There is no standard index to indicate the readiness of the community.
- The research survey has been done during the time limit of the academic year 2002 so it may not be valid while now.

– The research has been done while the project of subdistrict internet establishment is still on the pilot test phase. So the government has not yet fixes the policy and budget in this project.

6.2.2 General operation of subdistrict internet project

At present, the subdistrict internet project operates at subdistrict administration organization office. This project is stilling in development and implement phase. There are three increment phases for establishment. Whichever SAOs that were joined this project would be received the computer and other tools. The example for the equipments for each SAO can show below.

- Personal Computer IBM/PC and 15 inch monitor
- Modem 56kbps
- Laser printer
- UPS 500VA
- Scanner
- Speaker

Two subdistrict administration officers would be trained for operation and people services with subdistrict internet system. So for people services, people can use the computer with internet connection for access information that they want for cost-free services. The trained officers can support for basic problem of operation such as internet access, suggestion, or machine hangs off. There are questionnaires for process evaluation in period about 3, 4, or 6 months. Some SAOs had public relations and promotion for this project with notices, document, or information tower.

There are some problems for SAOs that have already implemented of subdistrict internet such as the computer that had operated slowly, cannot solve some machine problem, and there were too few local people used. Most people who use the subdistrict internet are students, and people who know about computer use. There are low people participation and responsibility of this project. And majority local people in community still not know about computer use.

6.3 Suggestion

6.3.1 Suggestion for community access center operation and implementation

To improve the information access opportunity of local people and get more readiness to establish community access center, there were some topics of suggestion from investigation and respondent's point of view that should be considered.

- Infrastructure
  - Community should be supported in staff training about information technology and computer knowledge.
  - Should be supported in computer tools and involve equipments for more people services.
  - Village book center need more encourage and supervise.
  - Should have knowledge staff for this project.
- Information
  - Increase more information media both quality and quantity oriented.
  - Increase more usage of book center and information broadcast tools.
- Community
  - Need to improve basic knowledge about computer usage for the people.
  - Make more promotion about the local access center.
  - Create the responsibility and public mind about the public welfare.
  - Management and maintenance after establishing.
- Government policy
  - Subdistrict internet project should be implemented in every community especially in the remote area.
  - The government should support the local authorities to improve more information access opportunity for the local people.

- The government should make more promotion of the information access in rural area.
- Should respect the constitution policy about IT.

6.3.2 Suggestion for future studies

There are some recommendations about future study that involve the establishment of community access center and information access opportunity which has been shown below.

- Should have the study about the efficiency of the community access center services when the center has been established.
- Should have more researches about the basic information infrastructure of the community such as village book center, information tower, ect.
- As a government has already establish community access center in the community, should have the research concerning about the managerial efficiency such as the factors and the problem, and also the impact on the way of life of the villagers.

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APPENDIX A

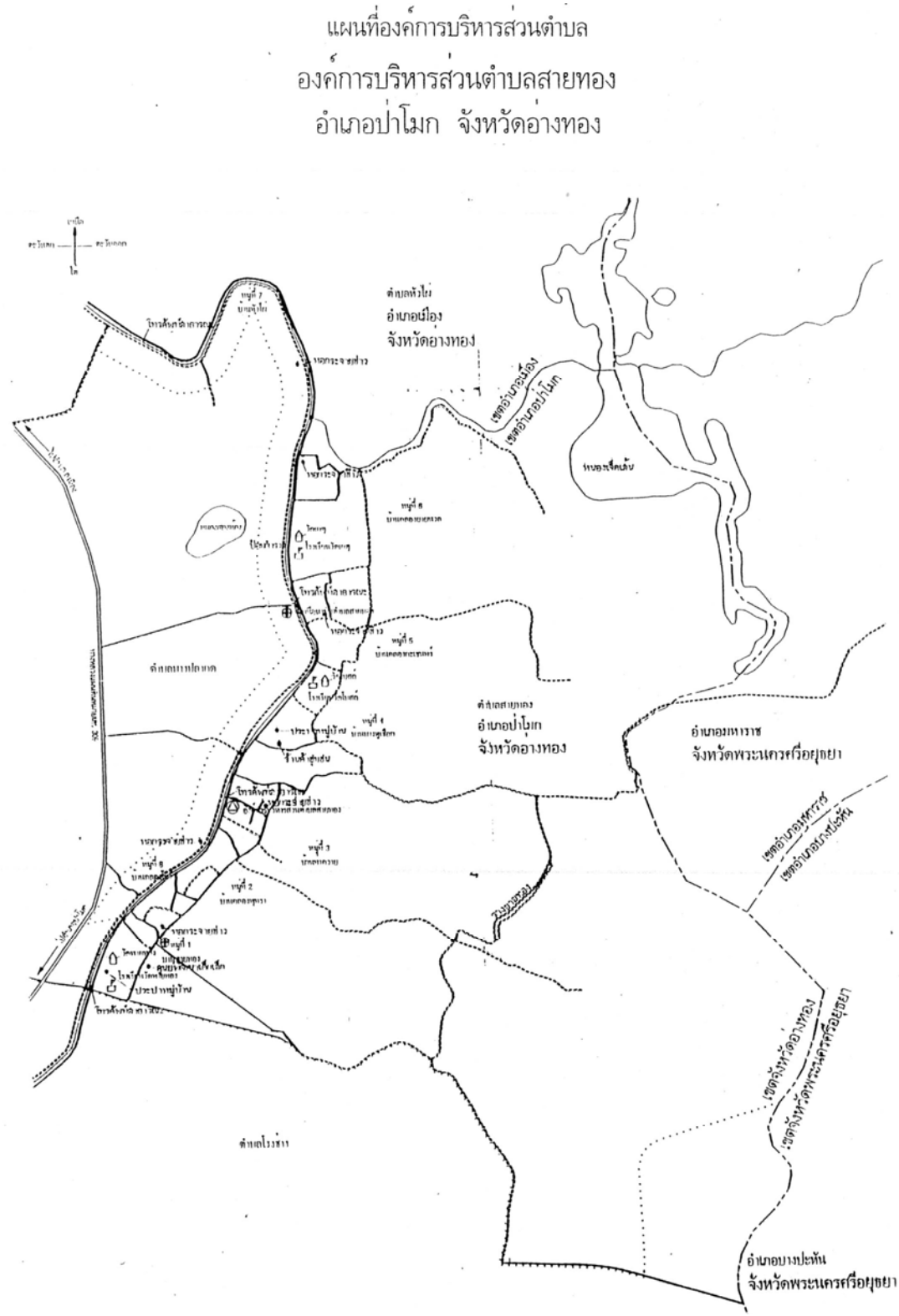

Figure A-1 Area of Saithong subdistrict, Pamok district, Angthong province

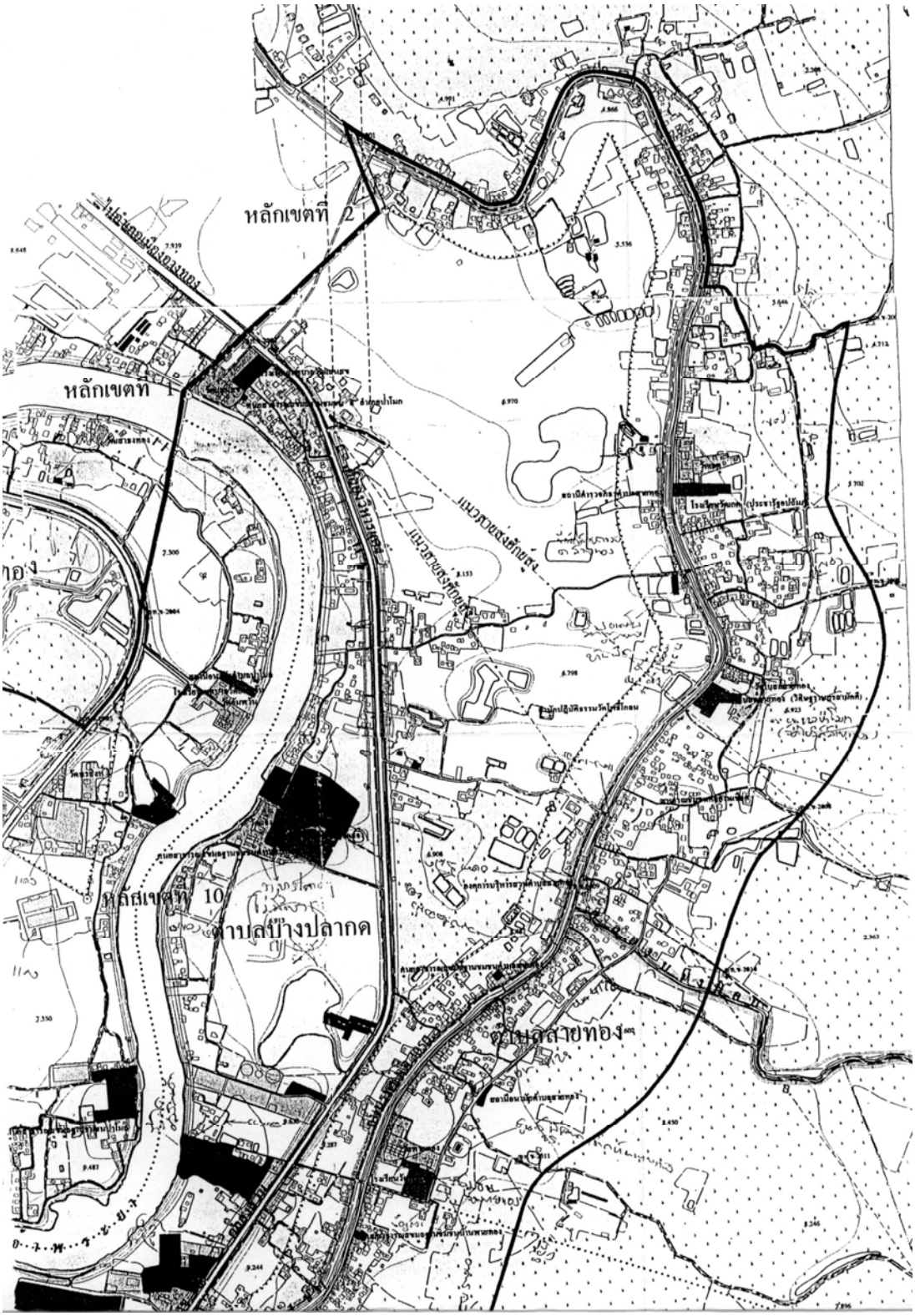

Figure A-2 Details of community and infrastructure of the area

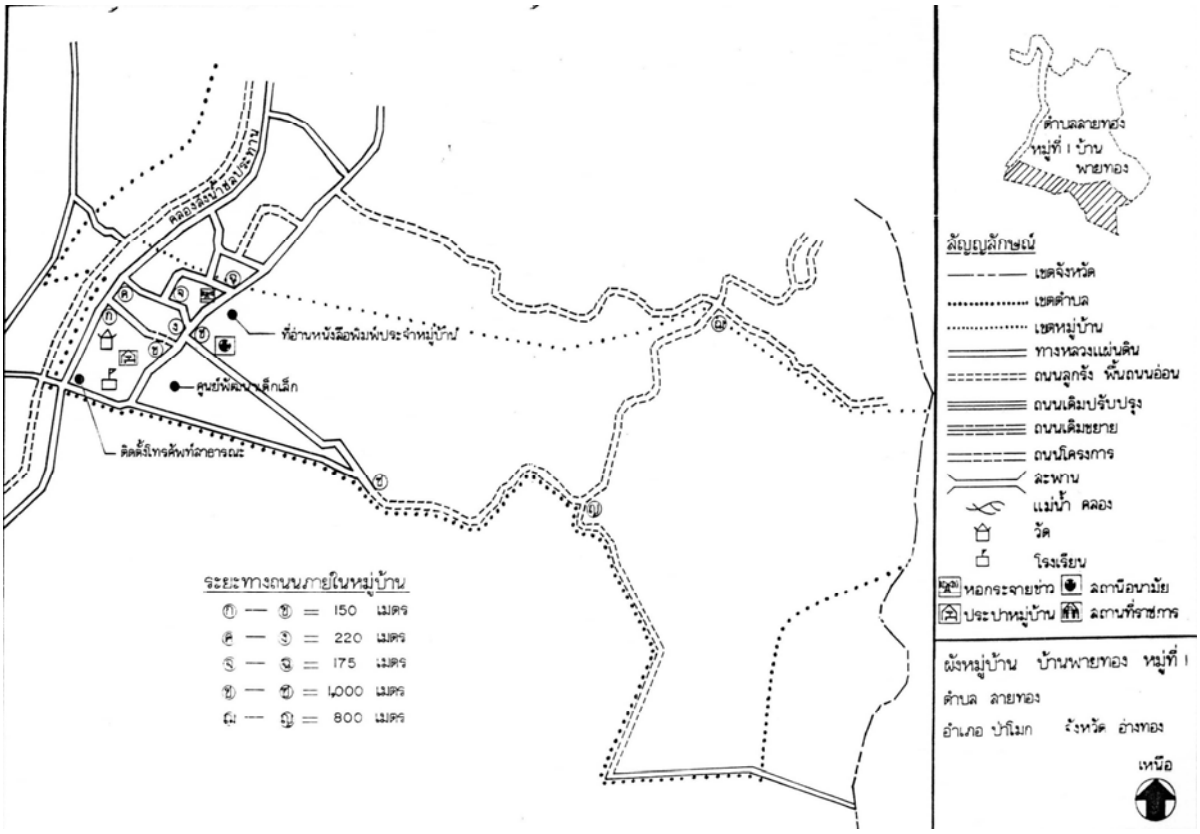

Figure A-3 Structure detail of village 1

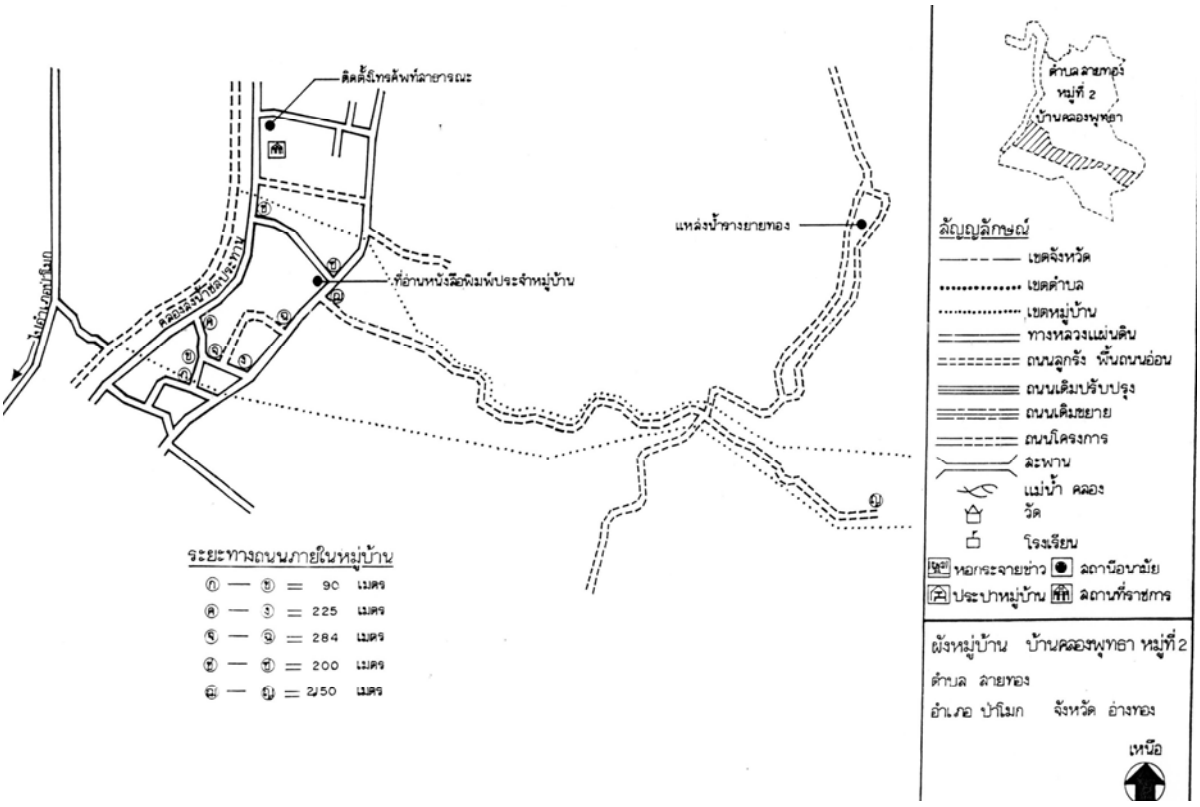

Figure A-4 Structure detail of village 2

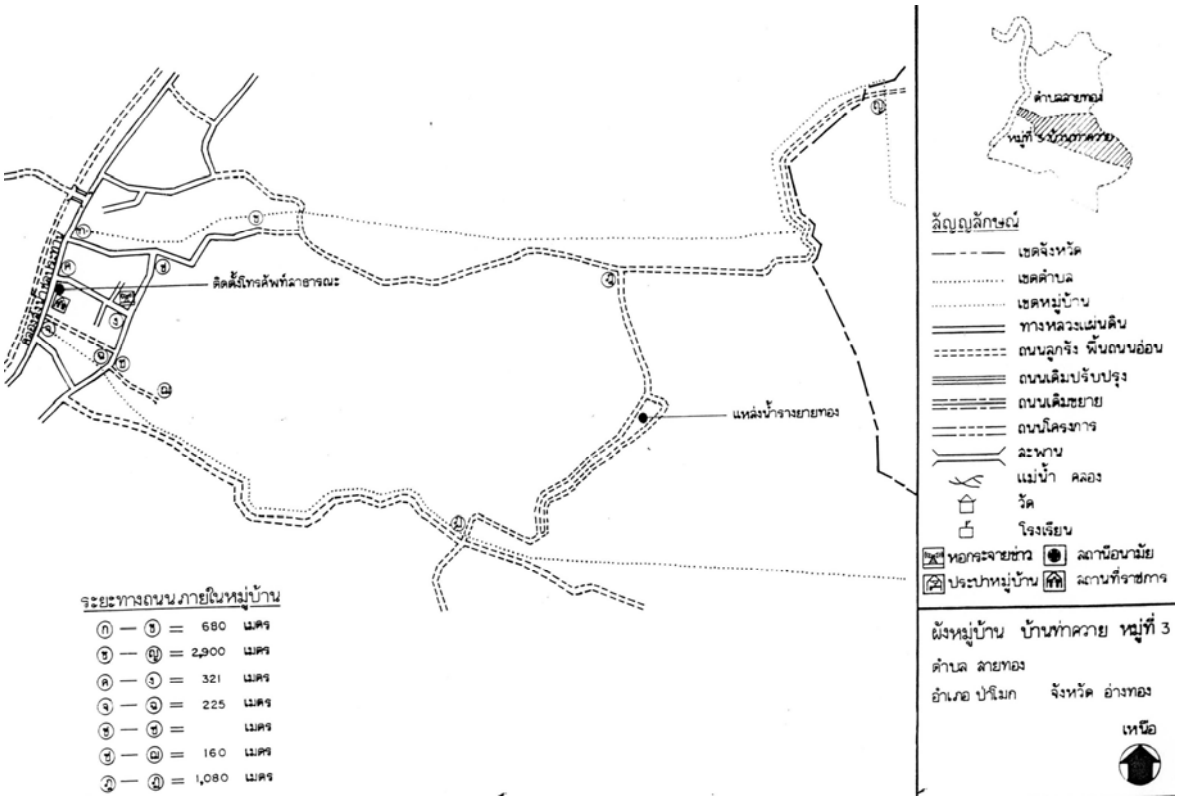

Figure A-5 Structure detail of village 3

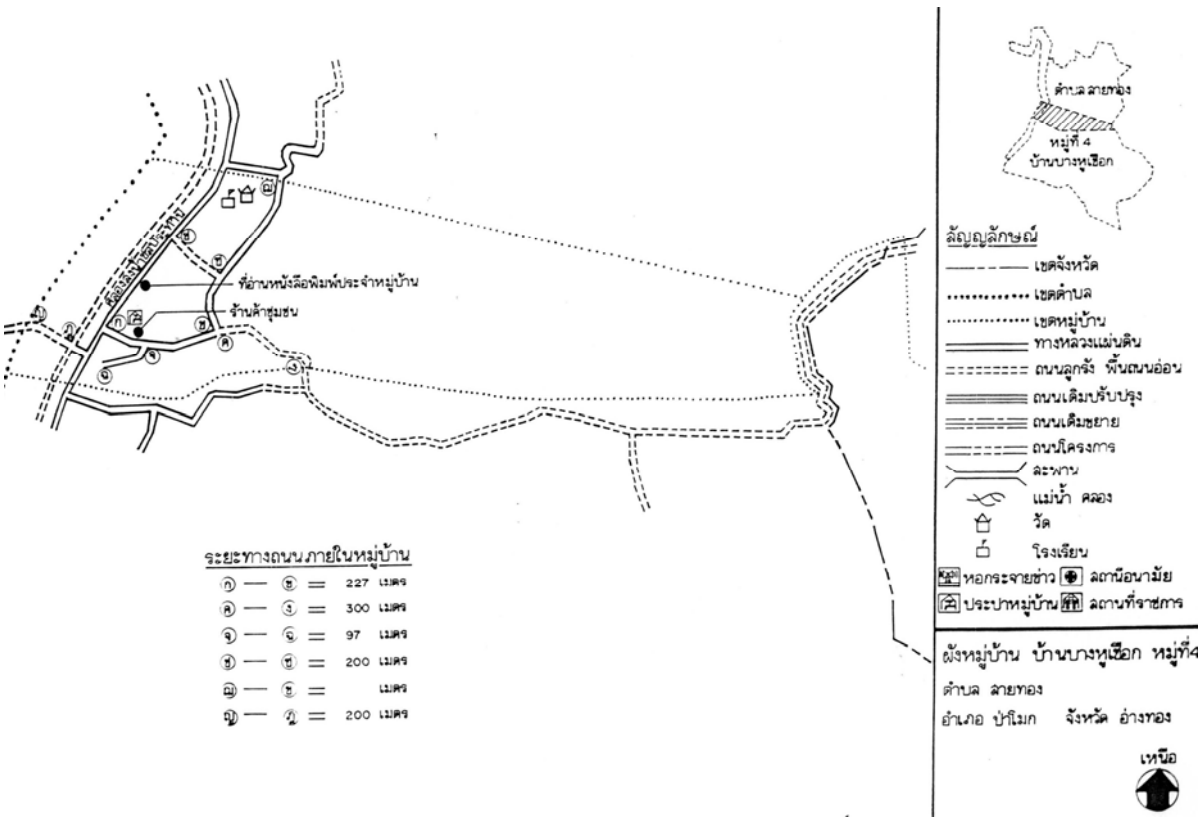

Figure A-6 Structure detail of village 4

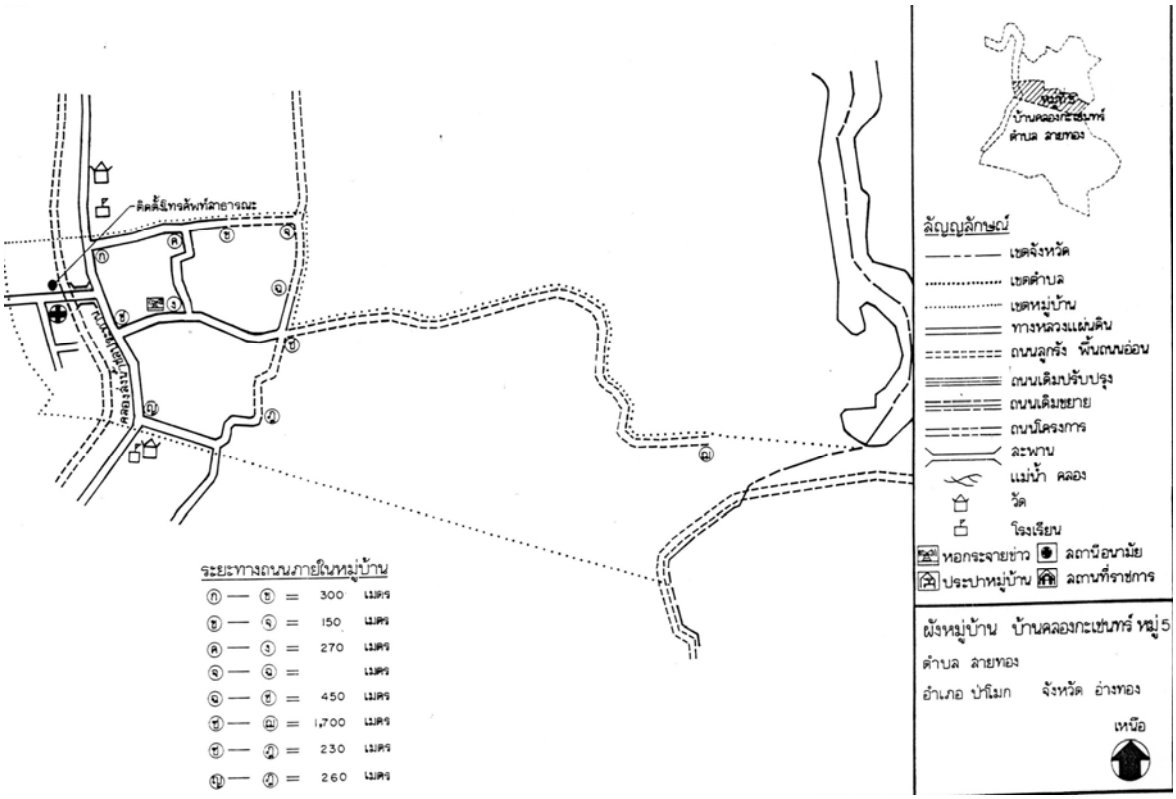

Figure A-7 Structure detail of village 5

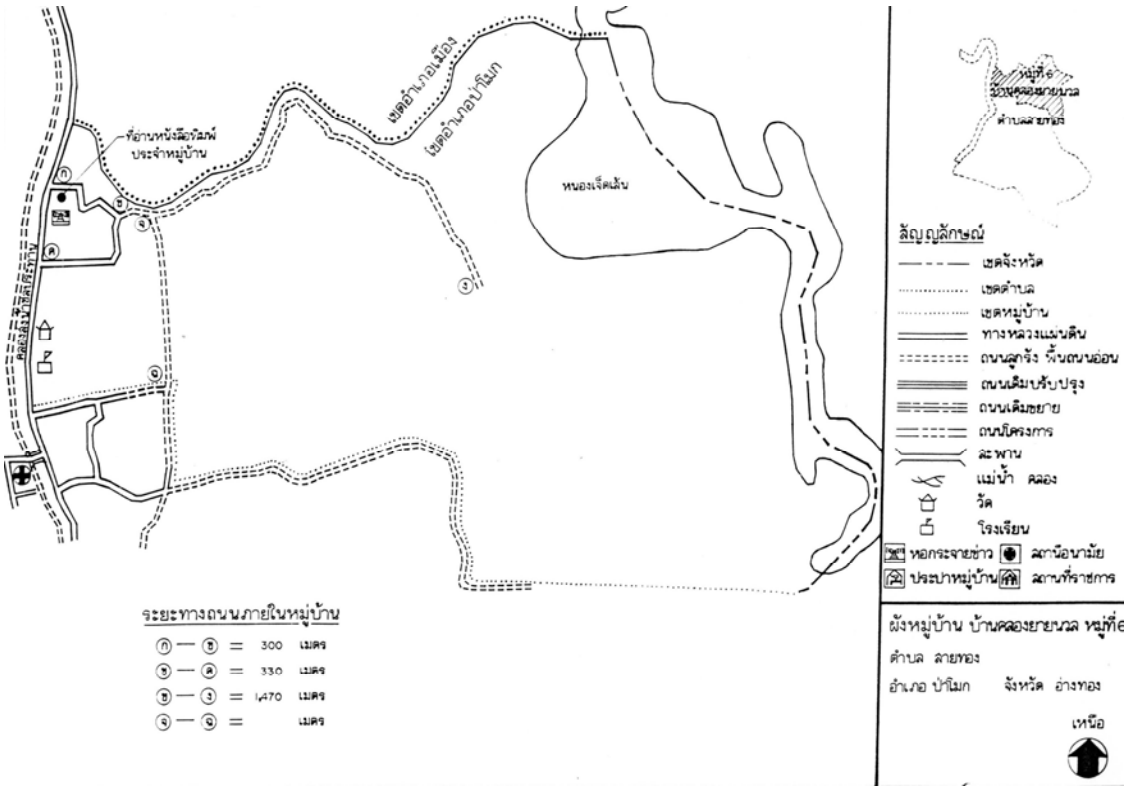

Figure A-8 Structure detail of village 6

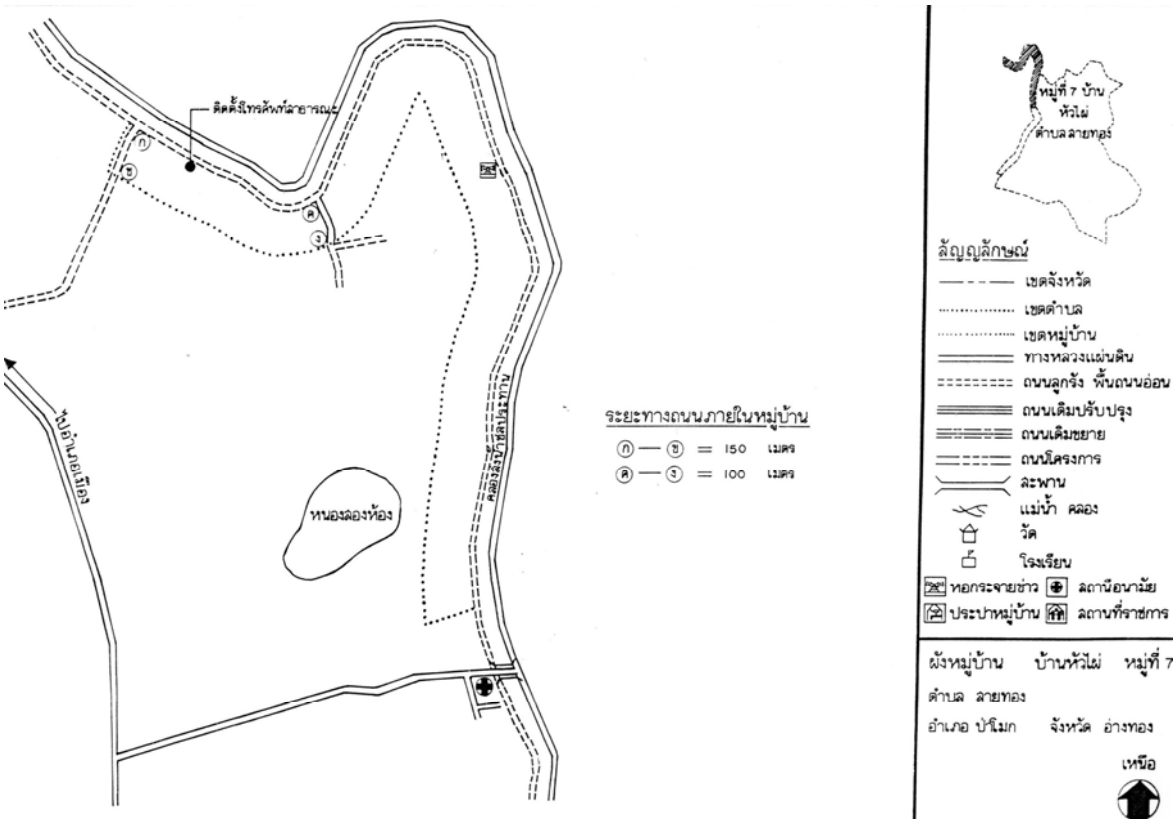

Figure A-9 Structure detail of village 7

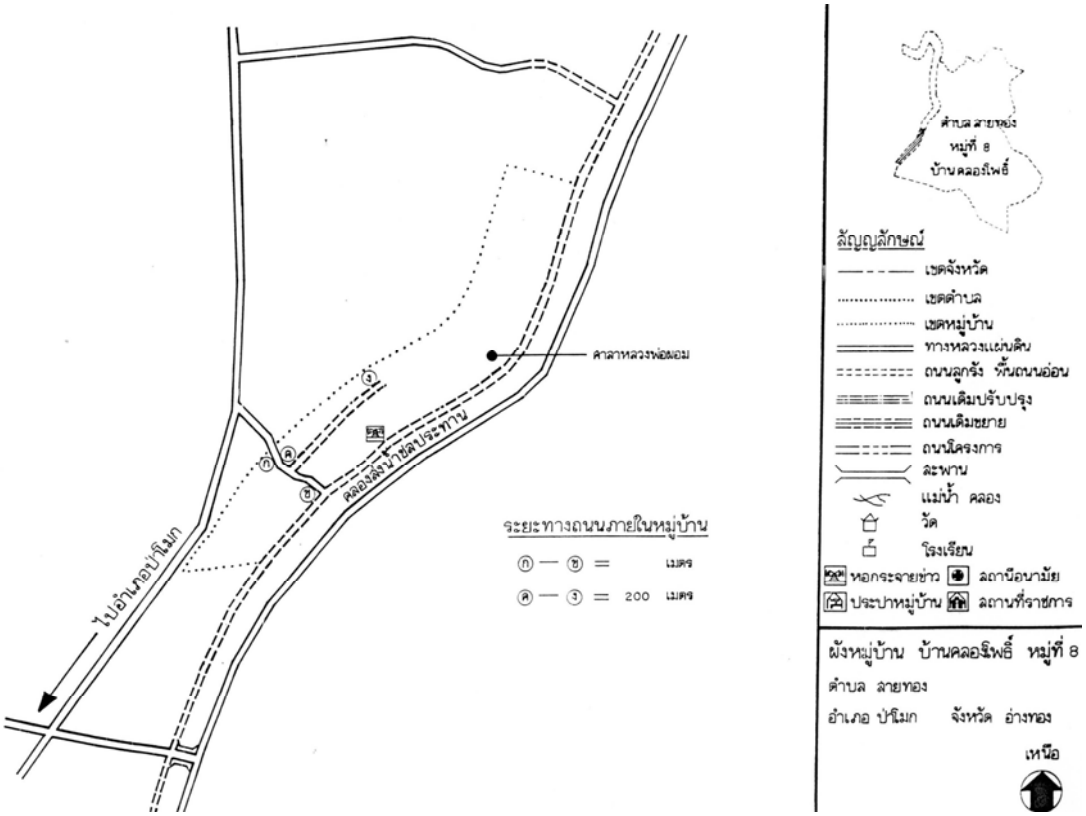

Figure A- 10 Structure detail of village 8

APPENDIX B

Table A-1 Opinion about facility of subdistrict administration organization service

SAO service facility	Village								Total	% Total
	1	2	3	4	5	6	7	8		
SAO service facility										
convenient	48	68	87	93	88	39	59	46	528	80.4
not convenient	8	25	9	8	41	16	18	4	129	19.6
Reasons for not convenient										
too far	0	4	0	0	23	11	12	0	50	7.6
hard to travel	0	0	1	3	1	2	0	0	7	1.1
never contact government section for work	1	7	0	0	3	1	0	0	12	1.8
not convenient to contact with officer	1	7	1	1	6	1	4	2	23	3.5
unknown topic to contact	5	6	3	2	7	1	2	2	28	4.3
unknown SAO location	1	1	1	1	0	0	0	0	4	0.6
not live in local area	0	0	3	1	0	0	0	0	4	0.6
others	0	0	0	0	1	0	0	0	1	0.2

Table A-2 Local people opinion in reasons for establish CAC at other place

People opinion	Village								Total	% Total
	1	2	3	4	5	6	7	8		
Reasons for establish CAC at other place										
School because school is center of education and learning	6	11	3	6	18	3	6	4	57	8.7
School because there are teacher for learning	3	4	2	2	3	0	4	0	18	2.7
School because have roomy area	0	0	0	0	1	0	1	0	2	0.3
Village book center because convenient for people usage	5	11	0	3	14	7	4	1	45	6.8
other place because government office might be not universal access for people	2	1	0	1	1	0	1	0	6	0.9
other place because SAO have a lot of other works	2	0	0	0	0	0	0	2	4	0.6
Village book center because near home	0	2	0	0	1	0	0	0	3	0.5
Temple because temple is center of community	0	0	0	0	1	0	0	0	1	0.2
Not applicable (agree with SAO)	38	64	91	89	90	45	61	43	521	79.3

Table A-3 Satisfaction level for electricity

infrastructure	village	Mean	S.D.	Satisfaction Level
electricity	1	2.21	0.868	good
	2	2.16	1.145	good
	3	1.9	0.672	good
	4	2.26	0.77	good
	5	1.9	0.909	good
	6	2.05	0.756	good
	7	1.68	0.715	good
	8	2.12	1.118	good
	SUM	2.02	0.893	good

Table A-4 Satisfaction level for telephone service

infrastructure	village	Mean	S.D.	Satisfaction Level
Telephone	1	2.64	1.034	moderate
	2	2.45	0.984	good
	3	2.46	0.87	good
	4	2.76	0.971	moderate
	5	2.59	0.957	moderate
	6	2.49	0.96	good
	7	2.3	1.001	good
	8	2.8	1.212	moderate
	SUM	2.56	0.991	moderate

Table A-5 Satisfaction level for transportation

infrastructure	village	Mean	S.D.	Satisfaction Level
Transportation	1	2.46	1.008	good
	2	2.88	1.214	moderate
	3	2.25	0.821	good
	4	2.37	0.845	good
	5	2.4	0.897	good
	6	2.56	0.848	moderate
	7	2.29	0.886	good
	8	2.94	1.185	moderate
	SUM	2.49	0.986	good

Table A-6 Satisfaction for government notice

infrastructure	village	Mean	S.D.	Satisfaction Level
Government notice	1	2.98	0.82	moderate
	2	2.69	1.073	moderate
	3	2.83	0.721	moderate
	4	3.22	0.769	moderate
	5	3	0.8	moderate
	6	2.8	0.848	moderate
	7	2.91	0.764	moderate
	8	2.98	1	moderate
	SUM	2.93	0.857	moderate

Table A-7 Satisfaction level for information tower

infrastructure	village	Mean	S.D.	Satisfaction Level
Information tower	1	2.73	0.924	moderate
	2	2.57	1.077	moderate
	3	2.62	0.897	moderate
	4	2.63	0.745	moderate
	5	2.64	0.909	moderate
	6	2.16	0.788	good
	7	2.19	0.904	good
	8	2.72	1.011	moderate
	SUM	2.55	0.925	moderate

Table A-8 Satisfaction level for publication document service

infrastructure	village	Mean	S.D.	Satisfaction Level
Publication document	1	3.04	0.808	moderate
	2	3.02	1.011	moderate
	3	2.99	0.733	moderate
	4	3.54	0.728	poor
	5	3.32	0.81	moderate
	6	2.95	0.731	moderate
	7	3.08	0.855	moderate
	8	3.2	0.881	moderate
	SUM	3.17	0.844	moderate

Table A-9 Satisfaction level for local officer service

infrastructure	village	Mean	S.D.	Satisfaction Level
Local officer service	1	2.89	0.824	moderate
	2	2.81	1.035	moderate
	3	2.75	0.918	moderate
	4	2.86	0.649	moderate
	5	3.01	0.888	moderate
	6	2.55	0.878	moderate
	7	2.92	0.997	moderate
	8	2.68	1.151	moderate
	SUM	2.84	0.918	moderate

Table A-10 Satisfaction level for information service of SAO

infrastructure	village	Mean	S.D.	Satisfaction Level
information service of SAO	1	3.11	0.846	moderate
	2	2.74	1.062	moderate
	3	2.86	1.032	moderate
	4	2.78	0.729	moderate
	5	3.09	0.984	moderate
	6	2.31	0.92	good
	7	2.86	1.155	moderate
	8	2.64	1.12	moderate
	SUM	2.83	1.004	moderate

Table A-11 Satisfaction level for SAO location

infrastructure	village	Mean	S.D.	Satisfaction Level
SAO location	1	2.3	0.807	good
	2	2.1	1.104	good
	3	2	0.725	good
	4	2	0.663	good
	5	2.6	0.914	moderate
	6	2.15	0.803	good
	7	2.44	0.786	good
	8	2.28	0.991	good
	SUM	2.21	0.881	good

Table A-12 Satisfaction level for aptitude of SAO as district information center

infrastructure	village	Mean	S.D.	Satisfaction Level
Aptitude of SAO as district information center	1	2.43	0.892	good
	2	2.46	1.027	good
	3	2.28	0.83	good
	4	2.6	0.884	moderate
	5	2.67	0.849	moderate
	6	2.15	0.591	good
	7	2.51	0.853	moderate
	8	2.28	0.97	good
	SUM	2.46	0.886	good

Table A-13 Satisfaction level for attention for information retrieving at SAO

infrastructure	village	Mean	S.D.	Satisfaction Level
Attention for information retrieving at SAO	1	3.21	0.967	moderate
	2	2.92	1.096	moderate
	3	2.9	0.84	moderate
	4	2.92	0.744	moderate
	5	3.04	0.824	moderate
	6	2.64	0.825	moderate
	7	3.06	0.833	moderate
	8	2.96	1.16	moderate
	SUM	2.96	0.906	moderate

Table A-14 Satisfaction level fort establishing subdistrict internet center at SAO

infrastructure	village	Mean	S.D.	Satisfaction Level
Establishing Subdistrict internet center at SAO	1	2.88	1.208	moderate
	2	2.78	1.326	moderate
	3	2.61	1.019	moderate
	4	3.11	1.148	moderate
	5	2.98	1.146	moderate
	6	2.44	0.856	good
	7	2.57	1.141	moderate
	8	2.92	1.226	moderate
	SUM	2.81	1.145	moderate

Table A-15 Satisfaction level for condition of village book center

infrastructure	village	Mean	S.D.	Satisfaction Level
State of village book center	1	3.05	0.883	moderate
	2	3.14	1.079	moderate
	3	3.22	0.836	moderate
	4	2.91	0.694	moderate
	5	3.26	0.853	moderate
	6	2.29	0.762	good
	7	3.27	0.868	moderate
	8	3.56	0.951	poor
	SUM	3.11	0.914	moderate

Table A-16 Satisfaction level for location of village book center

infrastructure	village	Mean	S.D.	Satisfaction Level
Location of village book center	1	2.64	0.819	moderate
	2	3.05	0.0971	moderate
	3	3.18	0.808	moderate
	4	2.56	0.654	moderate
	5	2.91	0.972	moderate
	6	2.47	0.813	good
	7	2.62	0.874	moderate
	8	2.86	1.05	moderate
	SUM	2.82	0.902	moderate

Table A-17 Satisfaction level for information and book at village book center

infrastructure	village	Mean	S.D.	Satisfaction Level
Information and book at village book center	1	3.41	0.781	moderate
	2	3.32	1.353	moderate
	3	3.56	0.856	poor
	4	3.22	0.729	moderate
	5	3.51	0.928	poor
	6	2.91	0.948	moderate
	7	3.35	0.839	moderate
	8	3.96	1.087	poor
	SUM	3.4	0.982	moderate

Table A-18 Opinion of government support that should be improved

infrastructure	village	Mean	S.D.	level to improve
government support	1	3.66	1.08	much
	2	3.6	1.181	much
	3	4.14	0.854	much
	4	3.81	0.88	much
	5	3.83	1.047	much
	6	3.45	0.899	moderate
	7	3.95	0.958	much
	8	3.6	1.178	much
	SUM	3.79	1.032	much

Table A-19 Opinion of computer and IT training that should be improved

infrastructure	village	Mean	S.D.	level to improve
Computer and IT training for people	1	3.89	1.423	much
	2	3.63	1.3	much
	3	4.42	0.749	much
	4	4.11	0.823	much
	5	4.02	1.082	much
	6	4.02	1.114	much
	7	4.1	1.046	much
	8	3.72	1.485	much
	SUM	4.01	1.126	much

Table A-20 Other computer knowledge of community leader and officer

Computer usage	frequency	Percent
Document making		
yes	14	28.0
no	36	72.0
Spreadsheet and graph		
yes	8	16.0
no	42	84.0
Database system		
yes	9	18.0
no	41	82.0
Watching movie / listening music		
yes	12	24.0
no	38	76.0
Information seeking from internet		
yes	8	16.0
no	42	84.0
e-mail / chat		
yes	4	8.0
no	46	92.0
Programming language		
yes	5	10.0
no	45	90.0
Other application software		
yes	7	14.0
no	43	86.0

APPENDIX C

วันที่กรอกข้อมูล.....

บ้านเลขที่..... หมู่ที่.....

☐ ผู้กรอกข้อมูลเป็นเจ้าของข้อมูล

☐ เจ้าของข้อมูลให้คนอื่นกรอกแทน
(เช่นแม่บอกแล้วให้ลูกบันทึกแทน)

เลขที่แบบสอบถาม.....

แบบสอบถาม

โครงการวิจัยเรื่อง การศึกษาความพร้อมของชุมชนชนบท ในการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชน
กรณีศึกษา ตำบลสายทอง อำเภอป่าโมก จังหวัดอ่างทอง

A Study of the Rural Area in Readiness to Establish the Community Information Access Center
Case Study : Saithong Subdistrict in Pamok District, Angthong Province

เรียน ผู้กรอกแบบสอบถาม

โครงการวิจัยนี้มีวัตถุประสงค์เพื่อประกอบการจัดทำวิทยานิพนธ์ตามหลักสูตรวิทยาศาสตรมหาบัณฑิต สาขาเทคโนโลยีการจัดการระบบสารสนเทศ คณะวิศวกรรมศาสตร์ มหาวิทยาลัยมหิดล และผลการศึกษาวิจัยที่ได้อาจนำไปใช้ประโยชน์ในอนาคตต่อไป

แบบสอบถามชุดนี้จะสำรวจข้อมูลพื้นฐานประชากร ตลอดจนความคิดเห็นในการใช้งานเทคโนโลยีสารสนเทศของท่าน รวมทั้งความเหมาะสมขององค์กรท้องถิ่นในการจัดตั้งเป็นศูนย์กลางการบริการสารสนเทศในชุมชน จึงใคร่ขอความร่วมมือจากท่านในการตอบแบบสอบถามที่ตรงกับความจริงและความคิดเห็นที่แท้จริงของท่าน โดยผลการสำรวจที่ได้จะนำมาประมวลเป็นภาพรวมเท่านั้น และข้อมูลที่เก็บได้จะถูกเก็บเป็นความลับ

จึงเรียนมาเพื่อทราบ และขอขอบคุณในความร่วมมือเป็นอย่างสูง

ผู้วิจัย

สำหรับประชาชนในชุมชน

แบบสอบถาม

เรื่อง การศึกษาความพร้อมของชุมชนชนบทในการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชน

(แบบสอบถามนี้ท่านไม่ต้องระบุชื่อ ท่านสามารถตอบได้อย่างเสรี จะไม่มีผลใด ๆ ต่อผู้ตอบทั้งสิ้น โปรดให้ความร่วมมือเพื่อเป็นประโยชน์ในการศึกษา)

ข้อตกลงเบื้องต้น

1 **สารสนเทศ** หมายถึง ข้อมูล ข่าวสาร และความรู้ ไม่ว่าจะปรากฏอยู่ในรูปแบบของตัวอักษร ตัวเลข เสียง และภาพ หรือในรูปแบบอื่นใดที่สื่อความหมายได้

2 **เทคโนโลยีสารสนเทศ** หมายถึง ความรู้ในผลิตภัณฑ์หรือในกระบวนการดำเนินการใด ๆ ที่อาศัยเทคโนโลยีฮาร์ดแวร์ ซอฟต์แวร์ คอมพิวเตอร์ การติดต่อสื่อสาร การรวบรวมและนำข้อมูลมาใช้ทันการ เพื่อก่อให้เกิดประสิทธิภาพทั้งทางด้านการผลิต การบริการ และการดำเนินงาน รวมทั้งเพื่อการศึกษาและการเรียนรู้ ซึ่งจะส่งผลต่อความได้เปรียบทางด้านเศรษฐกิจ การค้า และการพัฒนาคุณภาพชีวิตและคุณภาพของประชาชนในสังคม

3 **โครงสร้างพื้นฐานสารสนเทศ** หมายถึง โครงข่ายโทรคมนาคม เทคโนโลยีสารสนเทศ สารสนเทศ ทรัพยากรมนุษย์ รวมถึงปัจจัยอื่น ๆ ที่จะนำมาใช้ประโยชน์ในการก่อให้เกิดการกระจายสารสนเทศอย่างทั่วถึงและเท่าเทียมกันแก่ประชาชน

for staff only

ตอนที่ 1 แบบสอบถามเกี่ยวกับสถานภาพของท่าน
คำชี้แจง โปรดเขียนเครื่องหมาย X ทับหัวข้อของข้อความและเติมคำในช่องว่างให้ตรงกับความเป็นจริงของท่านมากที่สุด

1 เพศ (1) ชาย (2) หญิง a1 ☐

2 ที่อยู่ บ้านเลขที่..... หมู่ที่ ..... a2 ☐

3 อายุ (1) น้อยกว่า 15 ปี (2) 15-20 ปี (3) 21-30 ปี
(4) 31-40 ปี (5) 41-50 ปี (6) 51-60 ปี
(7) มากกว่า 60 ปี a3 ☐

4 วุฒิการศึกษา (1) ประถมศึกษา (2) มัธยมศึกษาตอนต้น
(3) มัธยมศึกษาตอนปลายหรือ ปวช (4) อนุปริญญาหรือ ปวส.
(5) ปริญญาตรี (6) ปริญญาโทหรือสูงกว่า a4 ☐

5 อาชีพ (1) เกษตรกร (2) รับจ้าง (3) รับราชการ
(4) ค้าขาย (5) นักเรียน (6) อื่น ๆ..... a5 ☐

6 รายได้เฉลี่ยต่อเดือน (1) ต่ำกว่า 4,000 บาท (2) 4,000-8,000 บาท
(3) 8,001-15,000 บาท (4) 15,001-20,000 บาท
(5) มากกว่า 20,000 บาท a6 ☐

ตอนที่ 2 แบบสอบถามเกี่ยวกับการเข้าถึงและการใช้งานสารสนเทศของท่าน
คำชี้แจง โปรดเขียนเครื่องหมาย X หัวข้อของข้อความที่ตรงกับความเป็นจริงของท่านมากที่สุด

1 ท่านมีความสนใจที่จะเสาะแสวงหาความรู้หรือข้อมูลข่าวสารใหม่ๆหรือไม่ b1 ☐
(1) สนใจ (2) ไม่สนใจ (3) เฉย ๆ

2 b2 ☐
ท่านมีความสนใจในข้อมูลข่าวสารประเภทใด (ใส่ตัวเลขเริ่มจาก 1ถึง 5 โดยเรียงความสนใจจากมากไปน้อย)
___ 1. ข้อมูลความรู้เกี่ยวกับการประกอบอาชีพ ___ 2. ข้อมูลการศึกษา
___ 3. ข่าวสารทางราชการ ___ 4. ข่าวสารภายในท้องถิ่น
___ 5. เนื้อหาด้านความบันเทิง ___ 6. อื่น ๆ .....

		for staff only
6	ท่านคิดว่าเทคโนโลยีสารสนเทศมีส่วนช่วยให้ท่านรับรู้ข้อมูลข่าวสารหรือเข้าถึงสารสนเทศได้มากขึ้นหรือไม่ (1) ช่วย (2)ไม่ช่วย	c6 ☐
7	ท่านสนใจที่จะใช้งานอินเตอร์เน็ตในการค้นคว้าหาความรู้และข่าวสารต่าง ๆ หรือไม่ (1) สนใจ (2) ไม่สนใจ	c7 ☐
8	ถ้าไม่สนใจ ท่านมีเหตุผลอะไร (1) ไม่มีคอมพิวเตอร์ (2) ไม่มีระบบอินเตอร์เน็ต (3) ใช้งานไม่เป็น (4) ไม่รู้ว่าอินเตอร์เน็ตคืออะไร (5) เห็นว่าไม่มีประโยชน์	c8 ☐

ตอนที่ 4	แบบสอบถามเกี่ยวกับความคิดเห็นในการเข้าถึงสารสนเทศและการให้บริการสารสนเทศขององค์การท้องถิ่น
ค่าชี้แจง	โปรดเขียนเครื่องหมาย X หัวข้อของข้อความที่ตรงกับความเป็นจริงของท่านมากที่สุด

1 เกี่ยวกับโครงสร้างพื้นฐานสารสนเทศ ท่านมีความ**พึงพอใจ**ต่อโครงสร้างพื้นฐานสารสนเทศและการแผยแพร่ข่าวสารในท้องถิ่นของท่านอย่างไร — d1 ☐

ข้อความ	มากที่สุด	มาก	ปานกลาง	น้อย	น้อยที่สุด	
1. ไฟฟ้า						d1a ☐
2. โทรศัพท์						d1b ☐
3. เส้นทางคมนาคม						d1c ☐
4. การติดประกาศของทางราชการ						d1d ☐
5. ประกาศของกำนันหรือผู้ใหญ่บ้านทางหอกระจายข่าวชุมชน						d1e ☐
6. เอกสารเผยแพร่ของราชการ เช่น แผ่นพับ,หนังสือต่าง ๆ						d1f ☐
7. การบริการของเจ้าหน้าที่ชุมชนหรือ อบต.						d1g ☐
8. การบริการและเผยแพร่ข้อมูลข่าวสารของ อบต.						d1h ☐
9. ที่ตั้งของ อบต. ท่านสามารถเดินทางไปได้โดยสะดวกหรือไม่						d1i ☐
10. ความเหมาะสมของ อบต. ในการเป็นศูนย์แผยแพร่ข่าวสารและข้อมูลประจำตำบล						d1j ☐
11. ความสนใจในการมาหาข้อมูลข่าวสารที่ อบต.						d1k ☐
12. การจัดตั้งโครงการอินเตอร์เน็ตตำบลที่ อบต.						d1l ☐
13. สภาพของที่อ่านหนังสือประจำหมู่บ้าน						d1m ☐
14. ที่ตั้งของที่อ่านหนังสือประจำหมู่บ้าน						d1n ☐
15. หนังสือ ข้อมูลข่าวสาร หรือสารสนเทศอื่นๆ ที่มีไว้บริการที่ที่อ่านหนังสือประจำหมู่บ้านของท่าน						d1o ☐

2 ท่านมีความสะดวกในการไปใช้บริการที่ อบต. หรือไม่ — d2 ☐
(1) สะดวก (2) ไม่สะดวก
* กรณีไม่สะดวกเพราะ — d2b ☐
(1) ไกลไป (2) เดินทางลำบาก (3) ไม่เคยติดต่องานราชการ
(4) เจ้าหน้าที่อำนวยความสะดวกไม่ดีเท่าที่ควร (5) ไม่รู้จะไปติดต่อเรื่องอะไร
(6) ไม่รู้จักว่าอยู่ที่ไหน (7) อื่น ๆ .....

		for staff only
3	ส่วนใหญ่ท่านได้รับข้อมูลข่าวสารต่าง ๆ จากสื่อประเภทใด (1) โทรทัศน์ (2) วิทยุ (3) ป้ายประกาศของทางราชการ (4) เอกสารพิมพ์แจกเผยแพร่ (5) อินเตอร์เน็ต (6) หนังสือพิมพ์ (7) อื่น ๆ	b3 ☐
4	ท่านคิดว่าสื่อประเภทใดที่ทำให้ท่านมีความสะดวกในการรับรู้ข้อมูลข่าวสารต่าง ๆ มากที่สุด (1) โทรทัศน์ (2) วิทยุ (3) ป้ายประกาศของทางราชการ (4) เอกสารพิมพ์แจกเผยแพร่ (5) อินเตอร์เน็ต (6) หนังสือพิมพ์ (7) อื่น ๆ	b4 ☐
5	ท่านรับรู้ข่าวสารภายในท้องถิ่นของท่านโดยวิธีใดมากที่สุด (1) เสียงตามสาย/ประกาศในท้องถิ่น (2) เพื่อนบ้านบอก (3) จากผู้ใหญ่บ้าน (4) อื่น ๆ	b5 ☐
6	ท่านได้ใช้ประโยชน์จากข้อมูลข่าวสารต่าง ๆ ที่ท่านรับรู้อย่างไร (1) เป็นความรู้ในการประกอบอาชีพ (2) รู้ไว้เพื่อประดับความรู้ พัฒนาตนเอง (3) รับรู้เฉย ๆ ไม่ได้ให้ความสนใจเป็นพิเศษ (4) อื่น ๆ	b6 ☐
7	ท่านมีความสนใจในการเสาะแสวงหาข้อมูลข่าวสารที่ท่านต้องการอย่างไร (1) ค้นคว้าจากหนังสือ (2) ถามคนที่รู้ (3) ฟังวิทยุหรือดูโทรทัศน์ (4) ค้นคว้าจากอินเตอร์เน็ต (5) อื่น ๆ.....	b7 ☐
8	ท่านเคยใช้บริการที่อ่านหนังสือประจำหมู่บ้านบ่อยแค่ไหน (1) ไม่เคย (2) น้อยกว่าสัปดาห์ละครั้ง (3) สัปดาห์ละครั้ง (4) สัปดาห์ละ 2 ครั้ง (5) ทุกวัน	b8 ☐
9	ท่านได้รับข้อมูลอะไรจากหอกระจายข่าวประจำหมู่บ้าน(ใส่ตัวเลขในช่องว่าง **โดยเรียงลำดับถวามถี่บ่อยในการประกาศเรื่องนั้นๆเริ่มจาก 1 ถึง 6 โดยเรียงจากบ่อยที่สุดก่อน**) ___1. ขอความร่วมมือ ___2. รณรงค์เชิญชวน ___3. แจ้งประกาศของทางราชการ ___4. .ให้ข้อมูลด้านการเกษตร ___5.ข้อมูลเรื่องยาเสพติด ___6. ข้อมูลด้านสุขภาพและสาธารณสุข ___7. อื่น ๆ	b9 ☐

ตอนที่ 3 แบบสอบถามเกี่ยวกับการใช้เทคโนโลยีสารสนเทศ
ค่าชี้แจง โปรดเขียนเครื่องหมาย X ทับหัวข้อของข้อความที่ตรงกับความเป็นจริงของท่านมากที่สุด

1	ท่านมีอุปกรณ์เทคโนโลยีสารสนเทศชนิดใดบ้าง (1) เครื่องคอมพิวเตอร์แบบตั้งโต๊ะ (2) เครื่องคอมพิวเตอร์แบบกระเป๋าหิ้ว (3) โทรสาร (4) โทรศัพท์ (5) โทรศัพท์มือถือ	c1 ☐
2	ท่านเคยใช้งานคอมพิวเตอร์หรือไม่ และบ่อยแค่ไหน (1) ไม่เคย (2) น้อยกว่าสัปดาห์ละ 1 ครั้ง (3) สัปดาห์ละ 1 ครั้ง (4) สัปดาห์ละ 2 ครั้ง (5) สัปดาห์ละ 3 ครั้ง (6) ทุกวัน	c2 ☐
3	ท่านเคยใช้คอมพิวเตอร์ในการใช้งานอินเตอร์เน็ตหรือไม่ (1) เคย (2) ไม่เคย	c3 ☐
4	ส่วนใหญ่ท่านใช้คอมพิวเตอร์ในเรื่องใด (1) พิมพ์งานทั่วไป (2) ดูหนัง ฟังเพลง (3) เล่นเกมส์ (4) เขียนโปรแกรม (5) ค้นคว้าข้อมูลจากอินเตอร์เน็ต (6) ไม่เคยใช้คอมพิวเตอร์	c4 ☐
5	ท่านเคยค้นคว้าข้อมูลจากอินเตอร์เน็ตเกี่ยวกับเรื่องใด (1) เนื้อหาเกี่ยวกับการศึกษา (2) ความบันเทิง (3) ความรู้ในการประกอบอาชีพ (4) ตรวจสอบอีเมลล์ (5) อื่น ๆ ..... (6) ไม่เคยใช้อินเตอร์เน็ต	c5 ☐

for staff only

3 **สิ่งที่ควรปรับปรุงเพื่อให้ท่านได้เพิ่มโอกาสในการรับรู้ข้อมูลข่าวสารและเข้าถึงสารสนเทศได้มากขึ้น** d3 ☐

ข้อความ	น้อยที่สุด	น้อย	ปานกลาง	มาก	มากที่สุด	
1. ระบบไฟฟ้า						d3a ☐
2. โทรศัพท์						d3b ☐
3. ที่อ่านหนังสือประจำหมู่บ้าน						d3c ☐
4. การกระจายข่าวของผู้ใหญ่บ้าน						d3d ☐
5. ประกาศต่าง ๆ ของราชการ						d3e ☐
6. บทบาทของ อบต. ในการเผยแพร่ข่าวสาร						d3f ☐
7. การบริการของเจ้าหน้าที่						d3g ☐
8. การสนับสนุนจากรัฐ						d3h ☐
9. การให้ความรู้กับประชาชนด้านเทคโนโลยีคอมพิวเตอร์						d3i ☐
10. ที่ตั้งของ อบต.						d3j ☐

4 ท่านรู้หรือไม่ว่ารัฐบาลมีนโยบายจัดตั้งโครงการอินเตอร์เน็ตตำบลเพื่อให้ประชาชนสามารถรับรู้ข่าวสารจากอินเตอร์เน็ต d4 ☐

(1) รู้ (2) ไม่รู้

5 ท่านคิดว่าโครงการอินเตอร์เน็ตตำบลเหมาะที่จะจัดตั้งที่ อบต. หรือไม่ d5 ☐

(1) เหมาะ (2) ไม่เหมาะ

6 ท่านคิดว่า อบต. ควรมีข้อมูลข่าวสารประเภทใดไว้บริการประชาชนในท้องถิ่น(ใส่ตัวเลขลำดับความสำคัญหน้าข้อ โดยเรียงจาก 1 สำคัญมากที่สุด ถึง 6 สำคัญน้อยที่สุด) d6 ☐

___1. ราคาสินค้าอุปโภคบริโภค ___2. ข้อมูลด้านการเกษตร

___3. ข้อมูลด้านสาธารณสุข ___4. ผลิตภัณฑ์ตำบลเช่นกลุ่มแม่บ้านต่าง ๆ

___5. ข้อมูลประกาศรับสมัครงาน ___6. ข้อมูลประกาศของทางราชการ

___7. อื่น ๆ .....

7 ท่านคิดว่าโครงการอินเตอร์เน็ตตำบลจะเป็นประโยชน์ในการรับรู้ข่าวสารและการค้นคว้าหาความรู้ต่างๆของท่านหรือไม่ d7 ☐

(1) เป็นประโยชน์ (2) ไม่เป็นประโยชน์

เพราะ.....

.....

8 เหตุผลที่ท่านคิดว่า อบต. เหมาะสมที่จะเป็นศูนย์กลางการบริการข้อมูลข่าวสารและเทคโนโลยีสารสนเทศในชุมชน (ถ้าเห็นว่าไม่เหมาะสม ให้ข้ามไปทำข้อ 9) d8 ☐

.....

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9 ถ้าท่านคิดว่า อบต. ไม่เหมาะสมที่จะเป็นศูนย์กลางการบริการข้อมูลข่าวสารและเทคโนโลยีสารสนเทศในชุมชน ท่านคิดว่า ที่ใดเหมาะสม d9 ☐

(1) โรงเรียน (2) วัด (3) ที่อ่านหนังสือประจำหมู่บ้าน

(4) อื่น ๆ ระบุ.....

เพราะ.....

ขอบคุณที่ให้ความร่วมมือ

ชุดสอบถามนี้เป็นส่วนหนึ่งในการศึกษาความพร้อมในการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชน

วิทยานิพนธ์วิทยาศาสตรมหาบัณฑิต หลักสูตรเทคโนโลยีการจัดการระบบสารสนเทศ

คณะวิศวกรรมศาสตร์ มหาวิทยาลัยมหิดล

วันที่กรอกข้อมูล.....

เลขที่แบบสอบถาม.....

แบบสอบถาม

โครงการวิจัยเรื่อง การศึกษาความพร้อมของชุมชนชนบท ในการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชน
กรณีศึกษา ตำบลสายทอง อำเภอป่าโมก จังหวัดอ่างทอง

A Study of the Rural Area in Readiness to Establish the Community Information Access Center
Case Study : Saithong Subdistrict in Pamok District, Angthong Province

เรียน ผู้กรอกแบบสอบถาม

โครงการวิจัยนี้มีวัตถุประสงค์เพื่อประกอบการจัดทำวิทยานิพนธ์ตามหลักสูตรวิทยาศาสตรมหาบัณฑิต สาขาเทคโนโลยีการจัดการระบบสารสนเทศ คณะวิศวกรรมศาสตร์ มหาวิทยาลัยมหิดล และผลการศึกษาวิจัยที่ได้อาจนำไปใช้ประโยชน์ในอนาคตต่อไป

แบบสอบถามฉบับนี้จะสำรวจข้อมูลพื้นฐานของเจ้าหน้าที่ชุมชน ตลอดจนความคิดเห็นของท่านที่มีต่อการใช้งานสารสนเทศของคนในชุมชน และการจัดตั้งศูนย์บริการสารสนเทศชุมชน จึงใคร่ขอความร่วมมือจากท่านในการตอบคำถามที่ตรงกับความจริงและข้อคิดเห็นที่แท้จริงของท่าน โดยจะนำมาประมวลผลในภาพรวมเท่านั้น และข้อมูลที่ได้จะถูกเก็บเป็นความลับ

จึงเรียนมาเพื่อทราบ และขอขอบคุณในความร่วมมือเป็นอย่างสูง

ผู้วิจัย

(สำหรับเจ้าหน้าที่และผู้นำชุมชน)

แบบสอบถาม

(สำหรับเจ้าหน้าที่ชุมชน)

เรื่อง การศึกษาความพร้อมของชุมชนชนบทในการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชน

(แบบสอบถามนี้ท่านไม่ต้องระบุชื่อ ท่านสามารถตอบได้อย่างเสรี จะไม่มีผลใด ๆ ต่อผู้ตอบทั้งสิ้น โปรดให้ความร่วมมือเพื่อเป็นประโยชน์ในการศึกษา)

ข้อตกลงเบื้องต้น		for staff only
1	**สารสนเทศ** หมายถึง ข้อมูล ข่าวสาร และความรู้ ไม่ว่าจะปรากฏอยู่ในรูปแบบของตัวอักษร ตัวเลข เสียง และภาพ หรือในรูปแบบอื่นใดที่สื่อความหมายได้	
2	**เทคโนโลยีสารสนเทศ** หมายถึง ความรู้ในผลิตภัณฑ์หรือในกระบวนการดำเนินการใด ๆ ที่อาศัยเทคโนโลยีฮาร์ดแวร์ ซอฟต์แวร์ คอมพิวเตอร์ การติดต่อสื่อสาร การรวบรวมและนำข้อมูลมาใช้ทันการ เพื่อก่อให้เกิดประสิทธิภาพทั้งทางด้านการผลิต การบริการ และการดำเนินงาน รวมทั้งเพื่อการศึกษาและการเรียนรู้ ซึ่งจะส่งผลต่อความได้เปรียบทางด้านเศรษฐกิจ การค้า และการพัฒนาคุณภาพชีวิตและคุณภาพของประชาชนในสังคม	
3	**โครงสร้างพื้นฐานสารสนเทศ** หมายถึง โครงข่ายโทรคมนาคม เทคโนโลยีสารสนเทศ สารสนเทศ ทรัพยากรมนุษย์ รวมถึงปัจจัยอื่น ๆ ที่จะนำมาใช้ประโยชน์ในการก่อให้เกิดการกระจายสารสนเทศอย่างทั่วถึงและเท่าเทียมกันแก่ประชาชน	
ตอนที่ 1 ค่าชี้แจง	แบบสอบถามเกี่ยวกับสถานภาพของท่าน โปรดกรอกข้อความลงในช่องว่างและเขียนเครื่องหมาย X ทับหัวข้อของข้อความที่ตรงกับความเป็นจริงของท่านมากที่สุด	

1	เพศ	(1) ชาย	(2) หญิง		e1	☐
2	ที่อยู่	หมู่ที่.....	ตำบล สายทอง		e2	☐
3	อายุ	(1) น้อยกว่า 15 ปี	(2) 15-20 ปี	(3) 21-30 ปี	e3	☐
		(4) 31-40 ปี	(5) 41-50 ปี	(6) 51-60 ปี		
		(7) มากกว่า 60 ปี				
4	วุฒิการศึกษา	(1) ประถมศึกษา		(2) มัธยมศึกษาตอนต้น	e4	☐
		(3) มัธยมศึกษาตอนปลายหรือ ปวช		(4) อนุปริญญาหรือ ปวส.		
		(5) ปริญญาตรี		(6) ปริญญาโทหรือสูงกว่า		
		(7) อื่น ๆ (ระบุ).....				
5	ตำแหน่งหน้าที่				e5	☐
		(1) ประธาน อบต		(2) ปลัด อบต		
		(3) เจ้าหน้าที่ปฏิบัติงานที่ อบต.		(4) สมาชิกสภา อบต.		
		(5) กำนัน		(6) ผู้ใหญ่บ้าน		
		(7) ผู้ช่วยผู้ใหญ่บ้าน		(8) กรรมการหมู่บ้าน		
		(9) เจ้าหน้าที่สาธารณสุขประจำชุมชน		(10) พระสงฆ์		
		(11) อื่น ๆ (โปรดระบุ).....				
6	รายได้เฉลี่ยต่อเดือน	(1) ต่ำกว่า 5,000 บาท		(2) 5,000-10,000 บาท	e6	☐
		(3) 10,001-20,000 บาท		(4) 20,001-30,000 บาท		
		(5) มากกว่า 30,000 บาท		(6) อื่น ๆ		

ตอนที่ 2	แบบสอบถามเกี่ยวกับความเทคโนโลยีสารสนเทศและกระบวนการทำงานของท่าน	for staff only
คำชี้แจง	โปรดกรอกข้อความลงในช่องว่าง และเขียนเครื่องหมาย X ทับหัวข้อของข้อความที่ตรงกับความเป็นจริงของท่านมากที่สุด	

1 ท่านใช้คอมพิวเตอร์บ่อยแค่ไหน f1 ☐

(1) ไม่เคยใช้ (2) น้อยกว่า 1 ครั้งต่อสัปดาห์
(3) 1-2 ครั้งต่อสัปดาห์ (4) 3-4 ครั้งต่อสัปดาห์
(5) 5 ครั้งต่อสัปดาห์ขึ้นไป

2 ความรู้พื้นฐานด้านคอมพิวเตอร์ของท่าน (ตอบได้มากกว่า 1 ข้อ) f2 ☐

..... ไม่มีความรู้ทางด้านคอมพิวเตอร์ และไม่รู้ว่าคืออะไร
..... ไม่มีความรู้ทางด้านคอมพิวเตอร์ แต่รู้จักว่าคืออะไร มีประโยชน์อย่างไร
..... พิมพ์เอกสาร
..... ตารางคำนวณและกราฟ
..... ระบบฐานข้อมูล
..... ดูหนัง ฟังเพลง
..... ค้นหาข้อมูลบนอินเตอร์เน็ต
..... อีเมล์/ CHAT
..... เขียนโปรแกรม
..... โปรแกรมสำเร็จรูปอื่น ๆ

3 ท่านมีอุปกรณ์สารสนเทศไว้ในครอบครองอะไรบ้าง (ตอบได้มากกว่า 1 ข้อ) f3 ☐

(1) วิทยุ (2) โทรทัศน์ (3) โทรศัพท์ (4) โทรศัพท์มือถือ
(5) คอมพิวเตอร์ (6) อินเตอร์เน็ต (7) อื่น ๆ .....

4 ความคิดเห็นของท่านเกี่ยวกับการทำงาน **ความสะดวกและความเหมาะสมในการทำงานต่าง ๆ** f4 ☐

ข้อความ	มากที่สุด	มาก	ปานกลาง	น้อย	น้อยที่สุด	
1. การทำงานตามหน้าที่ทั่วไป						f4a ☐
2. การนำเสนอโครงการต่าง ๆ						f4b ☐
3. การของบประมาณ						f4c ☐
4. ความเหมาะสมของนโยบายจากส่วนกลางกับสภาพปัจจุบันของชุมชน						f4d ☐
5. ความร่วมมือจากชาวบ้านในการทำโครงการต่าง ๆ						f4e ☐
6. ความสามัคคีในการทำงานของเจ้าหน้าที่						f4f ☐
7. โครงสร้างพื้นฐานสารสนเทศต่าง ๆ ในการทำงาน เช่น ไฟฟ้า ประปา โทรศัพท์ คอมพิวเตอร์						f4i ☐
8. ทัศนคติในการใช้งานเทคโนโลยีสารสนเทศของท่าน เช่น คอมพิวเตอร์, อินเตอร์เน็ต (ความชอบ,คิดว่าเป็นประโยชน์)						f4j ☐

ตอนที่ 3 แบบสอบถามเกี่ยวกับความคิดเห็นของท่านที่มีต่อการกระจายข้อมูลข่าวสารในท้องถิ่น

คำชี้แจง โปรดเขียนเครื่องหมาย X หัวข้อของข้อความที่ตรงกับความเป็นจริงของท่านมากที่สุด

for staff only

1 เกี่ยวกับ**การรับรู้ข่าวสารของคนในท้องถิ่น** g1 ☐

ข้อความ	มากที่สุด	มาก	ปานกลาง	น้อย	น้อยที่สุด	
1. โอกาสในการค้นคว้าหาความรู้ของชาวบ้านจากสื่อสารสนเทศในหมู่บ้าน เช่น เอกสารเผยแพร่ของราชการ,ที่อ่านหนังสือประจำหมู่บ้าน						g1a ☐
2. ความสนใจของคนในท้องถิ่นในการเสาะแสวงหาข้อมูลข่าวสารจากสื่อที่มีอยู่ เช่น ที่อ่านหนังสือประจำหมู่บ้าน อบต.						g1b ☐
3. คนในหมู่บ้านที่ใช้เครื่องคอมพิวเตอร์เป็น						g1c ☐
4. คนในท้องถิ่นที่มีเครื่องคอมพิวเตอร์						g1d ☐
5. ประชาชนได้ใช้ประโยชน์จากข้อมูลข่าวสารที่ได้รับ เช่น ด้านการประกอบอาชีพ ความรู้ข้อกฎหมาย สาธารณสุข						g1e ☐
6. ชาวบ้านที่มาขอข้อมูลเกี่ยวกับบริการของรัฐจากท่านหรือ อบต.						g1f ☐
7. การหาความรู้ที่เกี่ยวกับการประกอบอาชีพ						g1g ☐
8. การหาความรู้ด้านวิทยาการและเทคโนโลยีสมัยใหม่						g1h ☐
9. โอกาสในการรับรู้ข้อมูลข่าวสารของคนในท้องถิ่นเมื่อเทียบกับคนในชุมชนเมือง เช่น ตัวอำเภอ,จังหวัด						g1i ☐

ตอนที่ 4

แบบสอบถามเกี่ยวกับความเหมาะสมที่ อบต.จะเป็นศูนย์กลางการเข้าถึงสารสนเทศของคนในท้องถิ่น

คำชี้แจง โปรดเขียนเครื่องหมาย X หัวข้อของข้อความที่ตรงกับความเป็นจริงของท่านมากที่สุด

1 ความเหมาะสมของ **อบต.** ในการจัดตั้งเป็นศูนย์กลางในการเข้าถึงข้อมูลสารสนเทศของคนในชุมชน h1 ☐

ข้อความ	มากที่สุด	มาก	ปานกลาง	น้อย	น้อยที่สุด	
1. ที่ตั้งของ อบต ที่จะให้ชาวบ้านมาใช้บริการ						h1a ☐
2. ระบบสารสนเทศใน อบต. เช่น คอมพิวเตอร์ ระบบเครือข่าย						h1b ☐
3. ความรู้ความชำนาญของเจ้าหน้าที่เกี่ยวกับเทคโนโลยีสารสนเทศและอินเตอร์เน็ต						h1c ☐
4. งบประมาณของรัฐในส่วนช่วยส่งเสริมการรับรู้ข่าวสารของคนในท้องถิ่น						h1d ☐
5. ความเหมาะสมที่ อบต. จะจัดตั้งโครงการอินเตอร์เน็ตตำบล						h1e ☐
5. บริการโครงสร้างพื้นฐานสารสนเทศในท้องถิ่นเช่น ไฟฟ้า ระบบโทรคมนาคม						h1f ☐
6. ความเป็นไปได้ในการจัดตั้งศูนย์อินเตอร์เน็ตตำบลและเผยแพร่สารสนเทศต่าง ๆ ในท้องถิ่น						h1g ☐

ตอนที่ 4 แบบสอบถามเกี่ยวกับความคิดเห็นของท่านที่มีต่อการกระจายข้อมูลข่าวสารในท้องถิ่น

for staff only

คำชี้แจง

โปรดเติมคำตอบในช่องว่างและเขียนเครื่องหมาย X หัวข้อของข้อความที่ตรงกับความเป็นจริงของท่านมากที่สุด

2 เหตุผลที่ท่านคิดว่า อบต. เหมาะสมที่จะเป็นศูนย์กลางการบริการข้อมูลข่าวสารและเทคโนโลยีสารสนเทศในชุมชน (ถ้าเห็นว่าไม่เหมาะสม ให้ข้ามไปทำข้อ 3) h2 ☐

.....
.....
.....
.....

3 ถ้าท่านคิดว่า อบต. ไม่เหมาะสมที่จะเป็นศูนย์กลางการบริการข้อมูลข่าวสารและเทคโนโลยีสารสนเทศในชุมชน ท่านคิดว่า ที่ใดเหมาะสม h3 ☐

(1) โรงเรียน (2) วัด (3) ที่อ่านหนังสือประจำหมู่บ้าน

(4) อื่น ๆ ระบุ.....

เพราะ.....

.....

4 ท่านคิดว่าจำเป็นหรือไม่ที่คนในท้องถิ่นมีโอกาสแสวงหาความรู้จากสื่อต่าง ๆ โดยเฉพาะอินเตอร์เน็ต h4 ☐

(1) จำเป็น (2) ไม่จำเป็น

5 ท่านคิดว่าศักกายภาพของคนในท้องถิ่นในการใช้แสวงหาความรู้จากสื่อต่าง ๆ อยู่ในระดับใด h5 ☐

(1) ต่ำ (2) ปานกลาง (3) สูง

6 ท่านคิดว่าควรส่งเสริมในเรื่องใดเพื่อให้ประชาชนมีโอกาสในการแสวงหาความรู้และรับรู้ข้อมูลข่าวสารได้มากขึ้น h6 ☐

1. การสนับสนุนจากรัฐ	.....มากที่สุด	.....ปานกลาง	.....น้อย	h6a ☐
2. ให้ความรู้แก่ประชาชน	.....มากที่สุด	.....ปานกลาง	.....น้อย	h6b ☐
3. ฝึกอบรมเจ้าหน้าที่	.....มากที่สุด	.....ปานกลาง	.....น้อย	h6c ☐
4. โครงสร้างพื้นฐานสารสนเทศ	.....มากที่สุด	.....ปานกลาง	.....น้อย	h6d ☐
5. ความตื่นตัวและทัศนคติของชาวบ้านในการแสวงหาความรู้	.....มากที่สุด	.....ปานกลาง	.....น้อย	h6e ☐

7 ความคิดเห็นของท่านกับการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชนที่ อบต. เพื่อให้คนในท้องถิ่นมีโอกาสค้นคว้าข้อมูลและรับรู้ข่าวสารต่าง ๆ h7 ☐

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ขอบคุณที่ให้ความร่วมมือ

ชุดสอบถามนี้เป็นส่วนหนึ่งในการศึกษาความพร้อมในการจัดตั้งศูนย์กลางการเข้าถึงสารสนเทศชุมชน

วิทยานิพนธ์วิทยาศาสตรมหาบัณฑิต หลักสูตรเทคโนโลยีการจัดการระบบสารสนเทศ

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