

# Geographic Information Database Systems to Operation Applicative of Efficiency Community Business Entrepreneurs in Nakhonratchasima Province, Thailand

Puanguam, K.<sup>1</sup>, Neankratok, S.<sup>1</sup>, Prachai, S.<sup>1</sup>, Jongmuanwai, B.<sup>1</sup> and, Jedaman, P.<sup>2</sup>

<sup>1</sup>Lecturer, Rajabhat Nakhonratchasima University, Thailand

<sup>2</sup>Associate Professor, Dr., Special Lecturer, Rajabhat Mahasarakham University, Thailand

**Abstract:-** community economic activities are production activities, community buying and consumption activities for laying foundation to sustainable development. This article aims for developing geographic information database systems to operation applicative of efficiency community business entrepreneurs in Nakhonratchasima Province, Thailand. A “Key” geographic information database systems of four factors including the geographic information, products development, innovative features, and creating knowledge for innovative users. The CFA showed that the factors to consistent with empirical data in statistical significance at level of .01.

**Keywords:-** Geographic information database systems, operation applicative, efficiency community business entrepreneurs.

## I. INTRODUCTION

“Small and Micro Community Enterprise: SMCE” is the word used after the Thai government has given importance to the sufficiency economy in parallel with the mainstream economy, because the mainstream economy creates a disparity between people's income and causing many different social problems. The community enterprises are small and micro enterprises into creative community capital management for self-sufficiency and sufficiency of families and communities. capital here is not just about money but also resources, products, knowledge, wisdom, cultural capital and social capital to achieve efficiency and sustainability, mainly for the community of the owner of that enterprise. [1] It can be said that community enterprises are community affairs in relation to the production of goods, the provision of services, and other operations by a group of persons with ties, have a common way of life and gather to do business regardless of the form of juristic person and not being a juristic person for create income and for self-reliance of families, communities and between communities. The development of community enterprises is a promotion of community economy, which is the basis of sufficiency economy development for allowing members to be promoted in local knowledge and wisdom, monetization, helping each other. This can be said that community enterprise as the goal is to survive, not to be rich, but in order to survive and focus on sufficiency by

mainly using community funds. [2] Including capital which is a resource of knowledge, wisdom, people, labor, social and cultural capital, emphasizing cooperation and supporting. Geographic information systems (GIS) is a work processes for regarding spatial data using a computer systems of geographic database into data storage and analysis, including displaying spatial data can be utilized in many dimensions. [3] Nowadays, must to acceptant that the benefit from information technology is great because to makes it convenient, both for work, communication, and make more accurate decisions. By various kinds of information will be arranged in a form that has interrelated relationships. Therefore, the geographic information system that can link the location of the geographic map, and display layers of information in community products from the determination of data and information related to spatial positions.

### ➤ Studying a Background

A studying the context of having information systems for use in community business operations in Nakhonratchasima Province, Thailand don't yet have an information system that helps in data storage, and facilitate the business to be able to do business to increase revenue, include the marketing public relations channels. This study have two main objectives for developing geographic information database systems to operation applicative of efficiency community business entrepreneurs, and to confirmatory factor analysis associated with geographic information database systems to operation applicative of efficiency community business entrepreneurs in Nakhonratchasima Province, Thailand.

## II. LITERATURE REVIEW

### ➤ Geographic Information Systems

Geographic information systems (GIS) was to worked by entering geographic information (e.g., images maps, satellite images, numbers, letters, and distances) to analyzed through computer programs Which the results are often highly accurate, can be applied in many ways. Is a tool used to analyze spatial data by various information in the study area will be arranged in a form that has interrelated relationships, which will depend on the type and details of that information for the best results. The main function of the geographic information system consists of

importing data by dividing imports into 2 types which are importing vector data and importing raster data. [3] Which have different methods by digitizing techniques from paper maps to digital data. The raster data import section data can be imported using the image scanner, the refinement of the data must be adjusted to the same level and use different map coordinate systems. [4] The developing geographic information database systems to operation applicative of efficiency community business entrepreneurs were reducing duplication and conflicts of information, by keeping systematically for convenient for use in editing for users, and data retrieval is a collaboration between spatial data descriptive data and will result in changes in spatial data as well.

➤ *Community Enterprises : Community Businesses*

The community enterprises are community affairs in relation to the production of goods, the provision of services, and other operations by a group of persons with ties, have a common way of life and gather to do business regardless of the form of juristic person and not being a juristic person for create income and for self-reliance of families, communities and between communities. [5] The community businesses are economic activities of communities including production activities, expanding the production activities, community buying and consumption activities. [6] which the community business can be strong, requires cooperation and participation of people in the community to develop the business group to grow and progress. By the steps of operations of community business groups that will lead to success are;

- **Searching a market needs;** by having to know the demand for products and services of the markets, and the advantage of production or competition. The communities that have different resource advantages, that is the realization of “What” are resources will be used to produce?
- **Choosing the right production method;** must to know that those “who” will start production ? and “who” are involved in the production?, therefore should have someone has the ability to start producing, giving advice on production and brainstorming to be able to rely on those involved in production.
- **The target group;** by having to know “who” the product should be sold ?, and “how” customers can buy products?
- **Determining the right format;** by the form of community business include, 1) informal groups there is no registration under any legal framework, having independence in the operation, but cannot do legal transactions on behalf of the group, 2) formal groups is a group that is registered under the law, whether in the form of a cooperative or company limited, the disadvantage of forming a group is that the administration is more complicated, for the benefit of being able to raise funds quickly.

Therefore, community businesses are one way to increase revenue, the lives and quality of life of people in the community to have higher incomes. In doing community business, it should focus on strengthening the community, and promoting the self-reliant community economy, use local knowledge and raw materials in the community. This is the operation applicative of efficiency community business entrepreneurs.

### III. RESEARCH METHODOLOGY

#### A. Research Design

In the research of data methods are mixed methods research and participation action learning by barnstorming. The qualitative research for developing geographic information database systems to operation applicative of efficiency community business entrepreneurs by structure interview questionnaire on the instrument including the geographic information, products development, innovative features, and creating knowledge for innovative users with participants of key informants to analyzed the factors of geographic information database systems to operation applicative. The quantitative research to survey by semi-structure questionnaire with the samples to confirmatory factor analysis associated with geographic information database systems to operation applicative of efficiency community business entrepreneurs in the research design.

#### B. Research Participants

The research participants in the areas of this study on community businesses was Huai Thalaeng District, Nakhonratchasima Province, Thailand. The key informants to brainstorming and interview of the experts, community leaders and community business entrepreneurs were 15 persons, they all were purposive sampling. The samples to survey by questionnaire include community leaders and community business entrepreneurs were 400 persons. They all were multistage random sampling.

#### C. Research Collections

The data collection of the qualitative to involved synthesizing documentary and to interview with key informants for creating and developing geographic information database systems by interview questionnaire as the experts, community leaders and community business entrepreneurs. Quantitative to survey by questionnaire to study of a level and to confirmatory factor analysis include community leaders and community business entrepreneurs to the data.

#### D. Data Analysis

The data analysis for the qualitative data was analyzed by using three main stages, i.e., data reduction, data organization, data interpretation to conclusion. The quantitative data was analyzed by descriptive statistical analysis including mean, standard deviation. Also, the Confirmatory Factor Analysis (CFA) was conducted to analyze the factors associated with factors of geographic information database systems to operation applicative of efficiency community business entrepreneurs.

**IV. RESEARCH FINDINGS**

The study revealed that geographic information database systems to operation applicative of efficiency community business entrepreneurs in Nakhonratchasima Province, Thailand of the finding and discussion were followed:

- Geographic information database systems at a “Key” of four factors including the geographic information, products development, innovative features, and creating knowledge for innovative users to shown on figure 1.



Fig 1:- factors of geographic information database systems were the geographic information, products development, innovative features, and creating knowledge for innovative users.

- **Geographic Information;** determining the business characteristics of community business entrepreneurs, basic information for entrepreneurs, the nature of business operations and community areas, detailed product information and store product information, competitor information, products cost, shipping, business income, designing and developing functions for using database systems, tracking and planning to provide information that can be utilized for community business entrepreneurs (e.g., detailed product information, operator details, location of each business type).
- **Creating Knowledge for Innovative Users;** the contents that has been utilized and linked with other entrepreneurs, ways to promoted and developed together, the creation of knowledge that is beneficial both economically and socially, lead to the search for information in various forms quickly, effective use, promoting and supporting the use of technology and devices that support the developed innovation, the methods of obtaining useful information must be supported by modern knowledge and technology(e.g., using smartphone devices, using websites).
- **Innovative Features;** dividing data by product groups and products, processed / food products, woven fabric, clothing products, artificial flower, content related to the product, promoting community business entrepreneurs to collect data that can be grouped into products.
- **Products Development;** the development of products, which meets the needs of the market, branding, slogans to indicate a particular identity, storage in the form of database development in order to extract information, detailed analysis in various fields, raising and promoting community identities, greater progress.
- The confirmatory factor analysis associated with geographic information database systems to operation applicative of efficiency community business entrepreneurs at a “Key” of four factors including the geographic information, products development, innovative features, and creating knowledge for innovative users were followed:

- Level to geographic information database systems to operation applicative of efficiency community business entrepreneurs at a “Key” of four factors including the

geographic information, products development, innovative features, and creating knowledge for innovative users to shown on table 1.

Factors	Mean	S.D.
1. Geographic Information	4.40	0.60
2. Creating Knowledge for Innovative Users	4.32	0.68
3. Innovative Features	4.25	0.75
4. Products Development	4.19	0.82
<b>Total</b>	<b>4.29</b>	<b>0.71</b>

Table 1:- mean and standard deviation of A level to geographic information database systems at a “Key” of four factors (n=400)

A level to geographic information database systems to operation applicative of efficiency community business entrepreneurs at a “Key” of four factors including the geographic information, products development, innovative features, and creating knowledge for innovative users of high levels (Mean=4.29, S.D.= 0.71). When considering each component separately, the composition with the highest mean of geographic information (Mean=4.40, S.D.= 0.60), the second of creating knowledge for innovative users (Mean=4.32, S.D.= 0.68), and innovative features (Mean=4.25, S.D.= 0.75). Respective.

- The variable factors geographic information database systems to operation applicative of efficiency community business entrepreneurs at a “Key” of four factors including the geographic information, products development, innovative features, and creating knowledge for innovative users to shown on figure 2, 3, 4, 5.

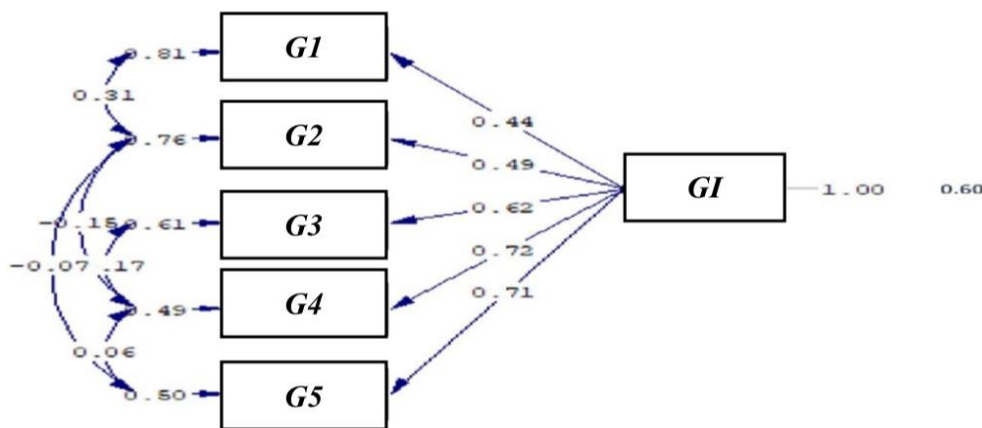


Fig 2:- Geographic Information. CFA, . Note. $X^2 = 0.01$ ,  $df = 1$ ,  $p$  value = .60, and RMSEA = .000.

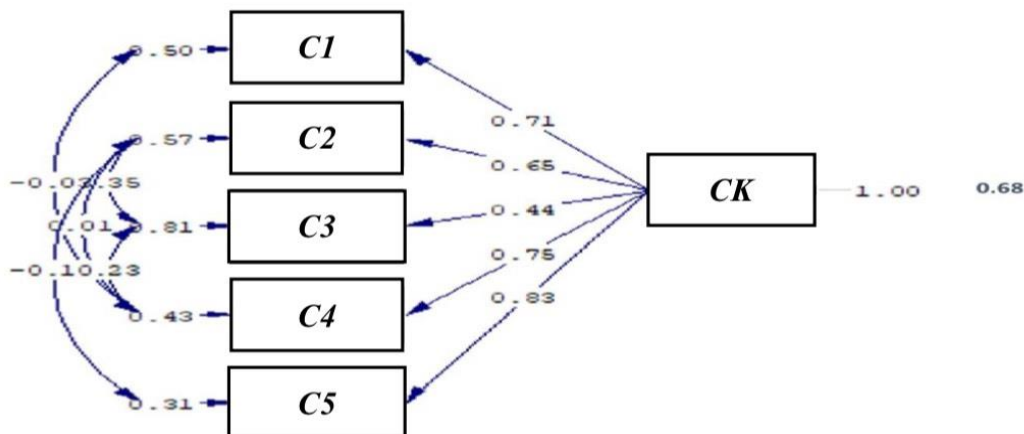


Fig 3:- Creating Knowledge for Innovative Users. CFA, . Note. $X^2 = 0.01$ ,  $df = 1$ ,  $p$  value = .68, and RMSEA = .000.



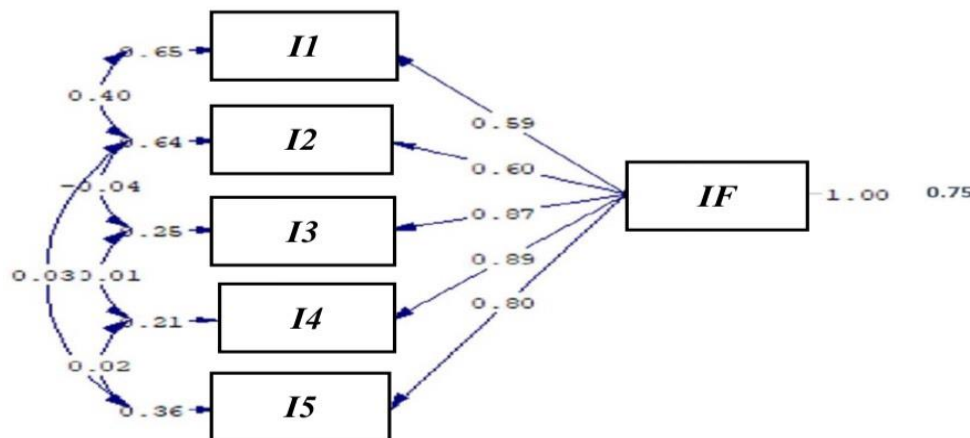


Fig 4:- Innovative Features. CFA, . Note. $X^2 = 0.01$ ,  $df = 1$ ,  $p$  value = .75, and RMSEA = .000.

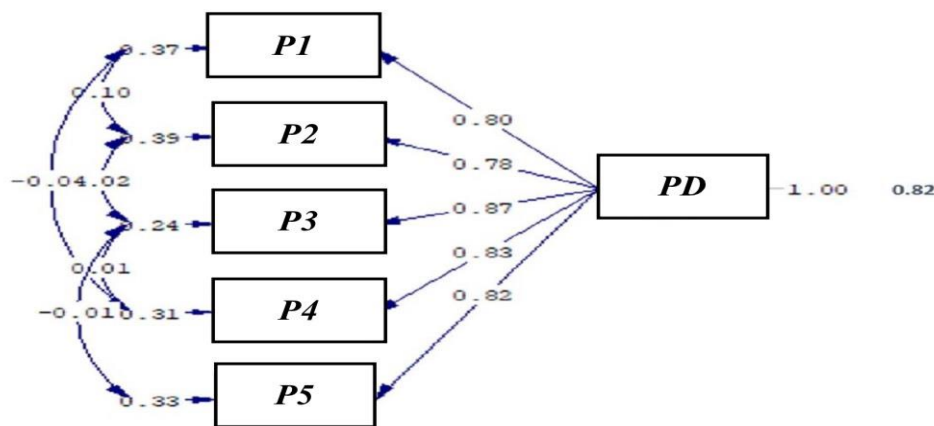


Fig 5:- Products Development. CFA, . Note. $X^2 = 0.01$ ,  $df = 1$ ,  $p$  value = .85, and RMSEA = .000.

The variable factors geographic information database systems to operation applicative of efficiency community business entrepreneurs at a “Key” of four factors including the geographic information, products development, innovative features, and creating knowledge for innovative users to consistent with empirical data in statistical significance at level of .01.

### V. DISCUSSION

The geographic information database systems at a “Key” of four factors including the geographic information, products development, innovative features, and creating knowledge for innovative users. And a level to geographic information database systems to operation applicative of efficiency community business entrepreneurs at a “Key” of four factors of high levels. CFA showed that the factors to consistent with empirical data in statistical significance at level of .01, because the system to present appropriate products. Tarik Turk, Olgun Kitapci and I. Taylan Dortyol [3] to developed a research on the usage of geographical Information systems (GIS) in the marketing decision making process in a case study for determining supermarket locations. To designed to help market managers use it to analyze and make decisions about consumer market segments. A key points that are used to develop the Geographic Information System are marketing analysis process, products from consumer behavior. Which

links to relevant information Which operators can add, delete, edit information and search in their own stores. product details operators can add product details by themselves. By adding information that can be text, images, video clips of the shop. Pornsak Vanarat and Thera Rutirod [6] to said that most community enterprises are still experiencing production problems, for product advertisements, where members are product advisers and via social media, because a individual sales are the most concise communication tools to able to communicate directly one-on-one with efficiency to potential customers, the product advertising section via social media. It is a popular method nowadays because it is spread easily and quickly, has a low cost and can reach the target group anytime, anywhere. And can be used with all types of products and services. Anurak Atitkavin [7] the business readiness and commercial registration to should be developing the products of the group to receive the product certification mark. Products with standards have received various standard marks because it helps to raise the value of the product to be of quality that can be marketed more easily. also giving customers the confidence to decide to buy products of the group. And the marketing promotion with public relations through various media. the geographic information database systems to operation applicative of efficiency community business entrepreneurs have to database is designed according to various factors that have been analyzed to create knowledge for users of innovation,

the developed database system has complete components in line with actual usage needs, there is a system to help facilitate the storage of product information of community entrepreneurs.

## VI. CONCLUSION

Geographic information database systems at a “Key” of four factors including; 1) geographic information for determining the business characteristics of community business entrepreneurs, basic information for entrepreneurs, the nature of business operations and community areas, detailed product information and store product information, products cost, shipping, business income, tracking and planning to provide information that can be utilized for community business entrepreneurs, 2) creating knowledge for innovative users to the contents that has been utilized and linked with other entrepreneurs, ways to promoted and developed together, the creation of knowledge that is beneficial both economically and socially, 3) innovative features for dividing data by product groups and products, processed / food products, woven fabric, clothing products, artificial flower, content related to the product, promoting community business entrepreneurs to collect data that can be grouped into products, and 4) products development to the development of products, which meets the needs of the market, branding, slogans to indicate a particular identity, storage in the form of database development in order to extract information, detailed analysis in various fields, raising and promoting community identities, greater progress. The variable factors at a “Key” of four factors including the geographic information, products development, innovative features, and creating knowledge for innovative users to consistent with empirical data in statistical significance at level of .01.

## REFERENCES

- [1]. Community Development Department. 2015. Manufacturer's operation manual and new OTOP operators. Bangkok, Thailand: Office.
- [2]. Kunyamon Inhang. 2011. Community enterprise management. Phitsanulok: Phitsanulok University, Thailand.
- [3]. Tarik Turk, Olgun Kitapci and I. Taylan Dortyol. 2014. The Usage of Geographical Information Systems (GIS) in the Marketing Decision Making Process: A Case Study for Determining Supermarket Locations. *Procardia-Social and Behavioral Sciences*. 148(2014). pp. 227-235.
- [4]. Plunkett, R. W., Attner, F. R., & Allen, S. G. 2002. *Management: meeting and exceeding customer expectations* (7<sup>th</sup> ed.). Cincinnati, OH: South-Western.
- [5]. Kanida Kaisanti and Rasamon Kumdee. 2016. Guidelines for potential development of the Sukavadee community enterprise group. 7<sup>th</sup> national and international academic conferences. 7(6), pp. 554-566.
- [6]. Pornsak Vanarat and Thera Rutirod. 2010. A planning for the development of rice mill community enterprise. *Local Administration Journals*, 2(4), pp. 1-8.
- [7]. Anurak Atitkavin. 2017. participatory OTOP product management Integrate into 4 to 5 stars. *Journal of Management, Faculty of Management Science, Rajabhat Lampang University, Thailand*, 7(2), pp. 26-37.