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Developing Pandan-Woven-Products' Production System of Farmer Housewife Group Community Enterprise, Yala Province, Thailand

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Abstract

The production system helps operators to see the overall operation in production. This present work aims to 1) study the production system for pandan-woven products, and 2) enhance this production system of a farmer housewives group community enterprise in Yala province, Thailand. The techniques used to collect the data were group interviews, focus group discussions, and participation development operations with 5 members of the enterprise. Content analysis was used to analyze the data. The results revealed that the pandan-woven-products' production system of this group is composed of 1) input which includes human resources, physical resources, and financial resources, 2) the production process is divided into 2 steps including preparing the pandan threads and weaving, and 3) output which is the woven pandan product. The enhancement of this production system followed the guidelines that aim to solve problems in the production system, such as reducing production time, production cost reduction, and product quality control to meet standards. This development solved the problems and made the production system more efficient.

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*Keywords: Production system, Pandan products, Community enterprise, Thailand*

Introduction

A community enterprise is a community business producing products, services, and others. It is operated by a group of persons who have a mutual connection and ways of life. They gather into a group to do such business for income and self-reliance of family, community, and between communities (Parinyasutinun, 2017; Buratti, Albanese, & Sillig, 2022). These small enterprises are crucial for enhancing the welfare of the communities and the country's development (Worogati & Suseno, 2022; Plirdpring & Ruangrajitpakorn, 2022). It can be said that a community enterprise is a tool of community capital management by the community and is genuinely for the community (Parinyasutinun, 2017). Hence, community enterprise is one of the essential targeted groups for development according to the current National Economic and Social Development Plan of Thailand to develop the economy at the roots for strength by promoting entrepreneurship to produce the products effectively and do the marketing efficiently (Office of the National Economic and Social Development Board, 2016). However, developing community enterprises in Thailand still have to be supported and enhanced continuously to achieve self-reliant sustainability, especially production and marketing. For production, it should cover systematic development, such as management of production resources, production process, style, and quality of products (Panyamak, Srikeaw, & Kloypan, 2016). Production is a crucial function for the business to bring the resources together as input factor in order to go through the production process. This process consists of various activities aimed towards making the end product or creating servicing tasks that can respond to the consumers' needs. Therefore, if the business has a high quality production system starting from input, process, and output, it can enhance the entrepreneurs' confidence that their products or services reach quality and absolutely satisfy the consumers (Pimki, 2015). Based on the performance of various community enterprises, although they get support from the government sectors, there are still production problems (Cavite, Kerdsriserm, & Suwanmaneepong, 2021). For example, the community enterprise of the farmer housewives group producing the pandan-woven bags was developed until the group could get the certification mark of community products. However, when the research team analyzed the primary information, the group was still encountering various production issues: production factors, production power, production cost, purchasing order, storage of inventories, quickness of production, and delivery to the customers (Yaosrima, 2021). For these reasons, it is necessary to improve the production system of the farmer housewives group community enterprise in Yala Province, to enhance the production of pandan-woven bags by the group to reach more effectiveness. Furthermore, it can maintain the quality of the products to meet the standard and satisfy the customers. It can generate secure work and income for the group, including strengthening the community's economy.

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### Objectives of the Study

The current study aimed to 1) study the existing production system of the pandan-woven-products of a farmer housewives group community enterprise in Yala province, and 2) improve this production system of this farmer housewives group community enterprise in Yala province.

## LITERATURE REVIEW

### Production system

The production system is any technique employed in industry to produce goods and services from a variety of resources. The framework of this system is composed of input, process, and output. It can be said that systems analysis frequently employs the input-process-output (IPO) model. The production may be influenced directly or indirectly by antecedent elements which are included as inputs. Processes are procedures and actions that mediate the relationship between the production's input variables and its results. The results of the production activities are known as outputs. This most frequently refers to tangible output as goods or what was created, accomplished, or made. Therefore, entrepreneurs must manage inputs, processes, and outputs in the production system of their business. Managing inputs means making sure that the correct resources such as people, tools, materials, etc. are available at the right time and in the right number to meet the needs of the business. Managing processes is defined as being in charge of a series of linked actions or steps that employ resources to accomplish a goal or end. Managing outputs means providing the necessary goods or services to satisfy consumers' needs (Russell & Taylor, 2011).

## RESEARCH MODEL

The research model of the study is shown in Figure 1.

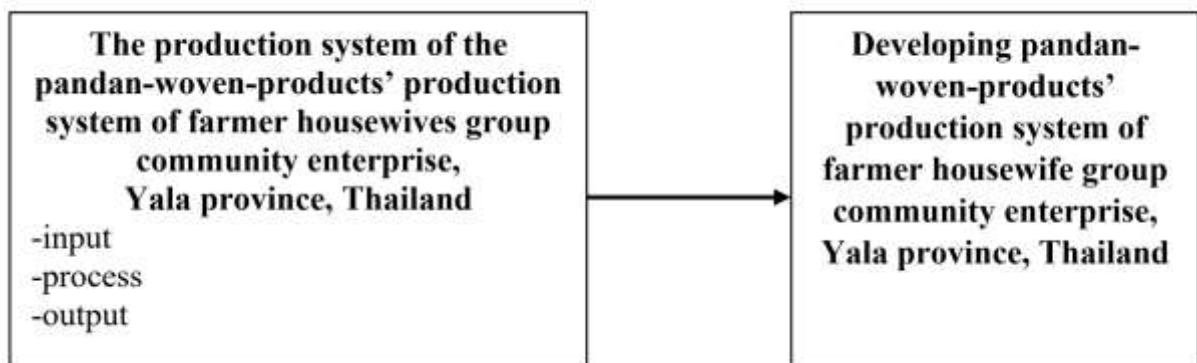


Figure 1: Research Model

## DATA ANALYSIS

The collected data from the interviews and observation records were used for content analysis.

### The components of the production system

1. Input: the production of pandan-woven bags has to use the following input:
  - 1.1 Human resources: group members who participated in the production continuously, a total of five persons.
  - 1.2 Physical resources: (1) office building, (2) raw material, i.e., pandan leaves, (3) materials, i.e., garcinia, dyed colors, big knife, sewing tendon, boxes of the blade to cut the pandan, scissors, boiling pot, pan, and stove, and (4) machine, i.e., sewing machine and industrial sewing machine.
  - 1.3 Financial resources: the early costs used in the business started from the members' capital. When business had the profits, the money was for the members as their saving deposit, and the rest were the circulating funds for operation.
2. Process: the production of pandan-woven bags had two main procedures as follows:
  - 2.1 Preparing the pandan leaves for weaving.
  - 2.2 Weaving the leaves and putting them together with other materials to get the bags as required.
3. Output: the pandan-woven bags. This output is shown in Figure 2.



Figure 2: The Pandan-Woven Bags

*Production system improvement of pandan-woven bags*

Based on the interview results, four crucial problems were found in the production system. Therefore, the research team and group members set the ways to solve these problems and enhance the efficiency of the system by following the determined guidelines as shown in table 1.

Table 1.

*Production System Development of Pandan-Woven Bags*

<b>Problems</b>	<b>Guidelines of problem-solving</b>	<b>Development results</b>
1. Production time was too long to produce the bags to meet the orders	<ol style="list-style-type: none"> <li>1. Divide the duties of each task clearly, and allocate the compensation for each duty.</li> <li>2. Employ the folks in the areas to cut and prepare the pandan leaves.</li> <li>3. Transfer knowledge of color dying to all of the members to be capable of dying because there was only one person who can do it.</li> <li>4. Provide the distribution sources of ready-made leather for making bag corners instead of cutting each piece by hand.</li> </ol>	<ol style="list-style-type: none"> <li>1. The members had the motivation to work on each operational duty.</li> <li>2. When other folks were employed to cut and prepare the pandan, it reduced the members' time by two days.</li> <li>3. All members were capable of dying panda leaves.</li> <li>4. The member used ready-made leather for making bag corners, which was ordered from an online channel that made the bags look more beautiful. Moreover, it reduced the production time by 30 minutes and reduced the production cost by 4 baht for each bag produced.</li> </ol>

<b>Problems</b>	<b>Guidelines of problem-solving</b>	<b>Development results</b>
2. High production cost: materials; dyed colors, leather, and lining, ordered from the shops in the province that had a higher price.	Find the information from other purchasing sources and do the purchasing order.	Purchase the production materials from other sources using an online channel. The quality is the same but at a better price. It could reduce the time of buying in the province by three hours and reduce the expense of travel by 100 baht per travel, including reducing the cost of materials for production at the average of 9 baht per bag produced.
3. Color dyeing of pandan leaves could not meet the standard	1. Purchase the equipment to measure the quantity of water and color; measure the spoon and jug with the meter. 2. Make samples of woven pandan leaves at every level color tone and then record the dyeing formula.	The colors of the bags are concordant with the colors needed and customers' requirements, from having the sample of woven pandan left in every level color tone. Customers can choose colors before they order, this increases their satisfaction.
4. Standard of bags was not stable as a whole	Organize the standard criteria to investigate the product quality by holding the standardized criteria of the community products	All of the bags met the standard before delivering to the customers. It helps enhance the satisfaction and reliability of the products to the customers.

#### DISCUSSION

The production system of the pandan-woven products of the farmer housewives group community enterprise in Yala Province, is like the production of products in general. It consists of input, process, and output. Input factors consist of human resources, physical resources, and financial resources. Process comprises the procedure of preparing the pandan leaves for weaving and the procedure of weaving, while output consists of the pandan-woven bags. Various resources included in the input are necessary to let the production process go smoothly leading to the productivity, and high quality of the pandan-woven bags. It can be said that the components are related and they work together to meet the set goals, which is the business having the products to present for the customers to buy (Baimai, 2017). It is concordant with a study, which reported that the improvement of production factors, production process, and products are the factors of business success (Limsiriwong, 2014). Moreover, the study revealed that the group had problems with production time, production cost, and product standards. Hence, improving the system solved the cause of problems by transferring the knowledge within the group, delegating the duties and allocating the compensation depending on each different duty, employing external employees to help in the work, improving the production standard, and finding new suppliers to get cheaper production factors to reduce costs. After improving the system, the production system of the group became more efficient in terms of production time, production cost, and quality of products to meet stable standards. This shows that problem-solving in the production system helps increase productivity. The group can manage the resources effectively and produce the pandan-woven bags with high quality meeting the standard and customers' needs, including delivering the products to the customers on time. It is concordant with the study of production management, which reported that the crucial factor which has to adjust is that of humans. Therefore, managing human resources should give knowledge regarding duties and roles, and work divisions (Chusri, 2017). Furthermore, the research on increasing the effectiveness of product production indicated that changing the operation method, organizing the standard of performance, and external employment help reduce the cost and time and increase productivity (Tawinwongsuriya, Rakkan, Sakulthai, & Plongma, 2015). A business with qualitative purchasing and materials seeking for suitable prices and good suppliers can increase the quality and reduce the cost of input factors affecting profitability (Ambekar, Deshmukh, & Hudnurkar, 2021). Besides, if all members work together as a team and emphasize the production plan, production factors provision, storage, and product delivery, it will strengthen the performance of the community enterprise (Prasertwattanakul & Ongkunaruk, 2016). It is concordant with the report that production management has a direct positive effect on the performance result of the business (Sriviboon, 2021).

#### CONCLUSION

The production system of the pandan-woven bags of the farmer housewives group community enterprise in Yala Province had problems with production time, production cost, and products standard. By managing the knowledge within the group, dividing duties, and allocating the compensation, employing external employees, improving the

production standards, and seeking new suppliers, the group reduced the production time by two days, and lowered the production cost by around 13 baht for every bag produced. Moreover, the group was able to maintain the quality of the products as a determined standard. However, the group has to adhere to the improved production system continuously, to get better performance results.

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