Empowering of Enterprise Group in Non Malai Community at Hin Lek Fai Subdistrict, Khu Mueang District, Buriram Province of Thailand to Enhance the Economy of Cannabis Processed Products

Kulganya Srisuk[1], Chalita Charoennet[2], Preecha Panoram[3], Sukchai Sriklang [4]

Abstract

This research aimed to study the potential and capability of business operations, consumer behavior, and to provide a guideline for improving the production capacity of processed cannabis products of the Non Malai Community Enterprise, Hin Lek Fai Subdistrict, Khu Mueang District, Buriram Province. The sample group used in the research included 30 producers, selected by purposive sampling and 77 consumers, determined by the Taro Yamane formula. The research tool was a questionnaire. The statistics used in the research included percentage, mean, standard deviation, T-test, and F-test. The research results showed that the overall opinion on potential and capability was at a moderate level (2.51). The areas needing improvement included product design and quality control. The overall consumer opinion on processed cannabis products was also at a moderate level (2.73), with specific areas for improvement in product design and quality control (3.77). When comparing opinions based on education level, there was a statistically significant difference at the .05 level.

Keywords: *Potential and Capability, Business Operations, Consumer Behavior, Capacity Enhancement, Processed Cannabis Products*

Introduction

Cannabis is classified as a type of medicine in Thailand, which has been used for a long time as a remedy in royal medicine and traditional herbal medicine to treat various symptoms according to the knowledge of traditional Thai medicine. This knowledge is documented in several Thai medical texts, such as the "Phra Osoth Phra Narai" and the "Medical Science for Assistance" manuals used in teaching traditional medicine from the past to the present, covering areas such as medicine, pharmacy, Thai massage, and midwifery. However, in 1979, "cannabis" was regulated under the Narcotic Drugs Act and classified as a Schedule 5 narcotic, similar to kratom and opium plants. As a result, its use in all medicinal formulations was prohibited. Traditional Thai medicine has thus adapted its formulas by incorporating other medicinal substances to compensate for or replace cannabis in the formulations. As a result, the use of cannabis-containing formulations has been absent for over 40 years." (Department of Academic Affairs, Ministry of Education, 2003). However, recent research has shown that cannabis extracts have medical benefits. Many countries around the world have accepted this and have relaxed regulations by allowing the legal use of cannabis for medical purposes or recreational use. In Thailand, opportunities have been opened for cannabis to be studied for medical benefits and used in treatments under the supervision and control of physicians, following the proposed amendments to two laws: the Narcotics Code and the Narcotics Act (No. 7) B.E. 2562 (2019), which were announced in the Government Gazette on February 18, 2019. The key provisions of this Act allow individuals to use cannabis and kratom for medical purposes and research. This Act permits licensed traditional Thai medical practitioners, applied traditional Thai medical practitioners, or folk healers under the law governing traditional Thai medicine to apply for permission to

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[1] Assistant Professor Dr, Buriram Rajabhat University, Email: Kulganya.ss@bru.ac.th.
[2] Lecturer, Associate Professor Dr, Buriram Rajabhat University.
[3] Lecturer, Associate Professor Dr, Buriram Rajabhat University, Email: Preecha.pn@Bru.ac.th.
[4] Lecturer, Buriram Rajabhat University.

collaborate with government agencies or private higher education institutions responsible for medical or pharmaceutical research and education.

After this Act came into effect on February 19, 2019, the use of cannabis oil to alleviate symptoms or treat various diseases became increasingly widespread (Jetsada Phatleopong, 2022). However, processed cannabis products are those derived from cannabis through processing to reduce the amount of THC, the substance responsible for intoxication, and increase the level of CBD, which has medical benefits. These products come in various forms, such as food and beverages infused with cannabis extract, cannabis oil, skin creams, soaps, or dietary supplements. These processed products are gaining more attention in the medical, health, and beauty industries due to their use in alleviating pain, reducing stress, and improving users' quality of life, for example, processed cannabis products in the form of food, such as baked goods or beverages infused with CBD, not only contribute to health but are also developed to meet the demands of consumers interested in relaxation and therapeutic products without the side effects associated with THC (Lucas et al., 2020).

The Non Malai Community Enterprise Group is located in the Hin Lek Fai Subdistrict, Ku Muang District, Buriram Province, Thailand. This community enterprise was established to promote and develop the collaborative working potential of community members. Its main objective is to generate supplementary income and improve the quality of life for group members through the production and processing of agricultural products. One of the products that has gained attention is processed cannabis, which is supported by the government and related agencies in terms of production technology development, as well as product design and quality control. These products are not only sold locally but also aim to expand into regional and national markets. The establishment of this community enterprise not only creates jobs for local residents but also promotes the efficient use of local resources, while supporting sustainable agriculture within the community (Office of Agricultural Economics, 2022).

The primary processed product is soap made from cannabis. The production of cannabis-infused soap may face several issues, which can be categorized into the following main points: 1) Quality Control of Extracts: Ensuring that the extracts are at a safe and legally compliant level. 2) Complex Production Processes: Including high production costs. 3) Legal Regulations: Cannabis is still classified as a controlled plant in many countries, including Thailand. Obtaining permits for the production, marketing, and distribution of cannabis soap must comply with strict laws, such as obtaining licenses from relevant authorities, which may pose challenges for small operators. 4) Sustainability of Raw Materials. 5) High Production Costs. And 6) Marketing and Consumer Behavior. Among these six issues, the researcher was particularly interested in addressing the sixth problem, which pertained to marketing and consumer behavior. Therefore, a study had been conducted to explore solutions to this issue.

Research Objectives

- To study the potential and capabilities of conducting business with processed cannabis products.

- To examine the consumer behavior towards processed cannabis products.

- To study and analyze the guidelines for enhancing the production capabilities of processed cannabis products by the Non Malai Community Enterprise in Hin Lek Fai Subdistrict, Khu Mueang District, Buriram Province.

Related Theories

The concept of production factors is an economic theory that explains the main factors used in the production of goods and services, consisting of land, labor, capital, and entrepreneurship. Each factor plays a crucial role in generating economic output: 1) Land is considered a fundamental production factor. Land refers to natural resources that cannot be created, such as agricultural land, forests, minerals, and oceans, all of which are limited in quantity. Smith, A. (1776) stated that land is the primary factor that determines production and is an unavoidable cost. Marshall, A. (1890) further added that natural resources, such as water or air, are also considered land and are essential production factors. 2) Labor refers to the human energy used in production, including skills, knowledge, and physical effort. Ricardo, D. (1817) emphasized that labor is a crucial factor in production and affects the level of output. Khun Wijit Matra (2004) explained that highly skilled labor can enhance industrial production efficiency. 3) Capital refers to the tools used in production, such as machinery, equipment, or technology, including financial capital. Schumpeter, J. (1934) suggested that capital is not only financial but also includes innovations that make the production process more efficient. Lt. Col. Dr. Chatchai (2018) noted that capital is the key to investment and a tool that increases production efficiency. And 4) Entrepreneurship refers to individuals who organize other resources to create new products, including taking risks and managing resources. Knight, F. (1921) explained that entrepreneurs play a key role in allocating production factors and taking on business risks. Professor Surasak Chandee (2019) stated that entrepreneurship is the most critical factor in managing limited resources to achieve maximum effectiveness.

The concept of production planning and management is the process of defining and controlling all activities related to the production of goods and services to achieve the most efficient outcomes. Production planning must consider resources, time, and customer demands, while production management focuses on ensuring operational efficiency and reducing production costs. These include: 1) Production Planning: This is the process of systematically planning and allocating resources to ensure continuous, efficient, and timely production of goods and services. Slack, N. et al. (2020) explained that production planning involves strategizing to appropriately allocate resources, considering market demands and organizational capacity. Heizer, J. & Render, B. (2017) added that effective production planning must cover production capacity, resources, and production time management. 2) Production Management: This involves managing all production stages, from preparing raw materials, production processes, quality control, to delivering the final product to customers. Chopra, S. (2021) emphasized that production management is crucial for controlling costs and improving product quality, requiring the use of modern management tools to enhance processes. Kannika Siriwattananukul (2020) explained that production management in large factories requires effective management to reduce costs and maximize efficiency. 3) Production Scheduling: Efficient production scheduling helps ensure operations run according to plan. Stevenson, W.J. (2018) stated that production scheduling reduces idle time and ensures that production meets the planned deadlines. Prasert Sarasalin (2019) stressed that production scheduling must be flexible and adaptable to changing circumstances. 4) Quality Control: This is the process of inspecting and evaluating production outcomes to ensure that products or services meet quality standards. Imai, M. (2021) highlighted the use of Kaizen quality control tools for continuous production process improvement. Panat Thasanawalai (2021) stated that quality control in industrial factories is critical for reducing waste and enhancing production efficiency. 5) The Use of Technology in Production Management: Implementing technology in production management helps improve efficiency, reduce errors, and speed up operations. Kumar, S. & Suresh, N. (2022) discussed the use of AI systems and data analytics in production management to increase accuracy and reduce decision-making time. Somchai Sunthornkasem (2018) noted

that using technology to control production processes allows factories to adapt to market changes efficiently.

The use of production technology plays a crucial role in improving efficiency, reducing costs, and modernizing production processes. Many scholars emphasize the importance of utilizing various technologies to enhance production systems in today's era. These include: 1) Automation: This helps reduce human error and increase production speed. Groover, M. P. (2021) stated that automation in production processes reduces labor costs and enhances production accuracy, particularly in industries requiring high precision. 2) AI Technology: AI aids in analyzing production data in detail and assists in decision-making for complex production processes. Russell, S., & Norvig, P. (2020) explained that AI is used to control and monitor real-time production processes to improve operational efficiency. 3) Internet of Things (IoT): IoT enables machines and equipment to connect within the production process for more efficient communication and control. Ashton, K. (2020) discussed the application of IoT in production, which allows data and operations between machines to be interconnected, helping to monitor and control production in real time.

Quality design and control focus on the process of developing and maintaining the quality of local or community products to ensure they possess unique characteristics and are suitable for both local and global markets. Quality design and control are therefore essential steps in adding value to community products, enabling them to compete commercially. These include: 1) Community Product Quality Design: The design of community products must consider cultural uniqueness and the use of local resources in production. Schroeder, R. G., & Goldstein, S. M. (2021) explained that community product quality design should not only meet market demands but also focus on sustainability and the appropriate use of local resources. 2) Quality Control of Community Products: Quality control for community products requires setting standards that match the unique characteristics of the products. Statistical quality control techniques are often used to continuously evaluate quality. Goetsch, D. L., & Davis, S. B. (2020) emphasized the importance of using statistical tools in community product quality control to improve production processes and reduce errors. 3) Quality Certification and Marketing of Community Products: Quality control and certification of community products often involve specific standards, such as OTOP (One Tambon One Product) certification, which enhances product credibility and promotes sales. Juran, J. M., & Godfrey, A. B. (2019) highlighted that in community product quality control, certification that aligns with international standards is essential for increasing product value in the global market.

In the product distribution, there have been significant changes and developments in recent years due to advancements in technology and evolving consumer behaviors. Product distribution can now occur through a variety of channels, including traditional brick-and-mortar stores (offline) and increasingly important online platforms. In summary: 1) Product Distribution through Offline Channels: Offline distribution remains vital for customers who want to physically touch and inspect products before making a purchase decision. Patchara Pongpaiboon (2019) explained that offline sales are still essential for certain types of products, especially those that customers prefer to try before buying, such as clothing and electronics. 1) Product Distribution through Online Channels: Sales through online platforms have rapidly increased due to their convenience and broad customer accessibility. Jirapan Sindudetha (2020) emphasized the importance of using online platforms such as Shopee, Lazada, and Facebook Marketplace for product distribution, particularly for small businesses and communities that can reach a wider audience without needing a physical store. 2) Integration of Offline and Online Channels: The concept of integrating offline and online sales, known as "Online to Offline" (O2O), has become a key strategy in the modern market. Businesses can leverage online channels to attract customers to their physical stores. Nathawut Suphamanee (2021) discussed the use of O2O strategies, which enhance a more convenient shopping experience for

consumers, particularly through mobile applications that track and offer promotions tailored to customer needs.

The theory of consumer perception is a concept that explains how consumers perceive and evaluate products or services before making a purchase decision. Consumer perception can be influenced by external factors such as advertising, promotions, or personal experiences. This theory is often utilized in marketing research to understand consumer behavior in the process of selecting products and services. 1) Selective Perception: Consumers tend to perceive information that aligns with their beliefs or desires while ignoring information that contradicts their beliefs. Schiffman, L. G., & Wisenblit, J. (2019) explain that consumers selectively receive certain information based on their expectations or personal preferences, resulting from a mental filtering process that causes them to notice or hear only the information they want. 2) Perceived Risk: The risks that consumers perceive regarding a product or service can affect their purchase decisions. If consumers view the risk as high, they are often hesitant to buy. Solomon, M. R. (2020) emphasizes the importance of perceived risk in the decision-making process of consumers, particularly financial and social risks that may impact their self-image when purchasing products or services. 2) Unconscious Perception: Although it may not have an immediate direct effect on purchasing behavior, it can create impressions and brand recall. Hoyer, W. D., MacInnis, D. J., & Pieters, R. (2018) state that while unconscious perception may have limited effects, it can stimulate interest and emotional connections with the product.

Research Framework
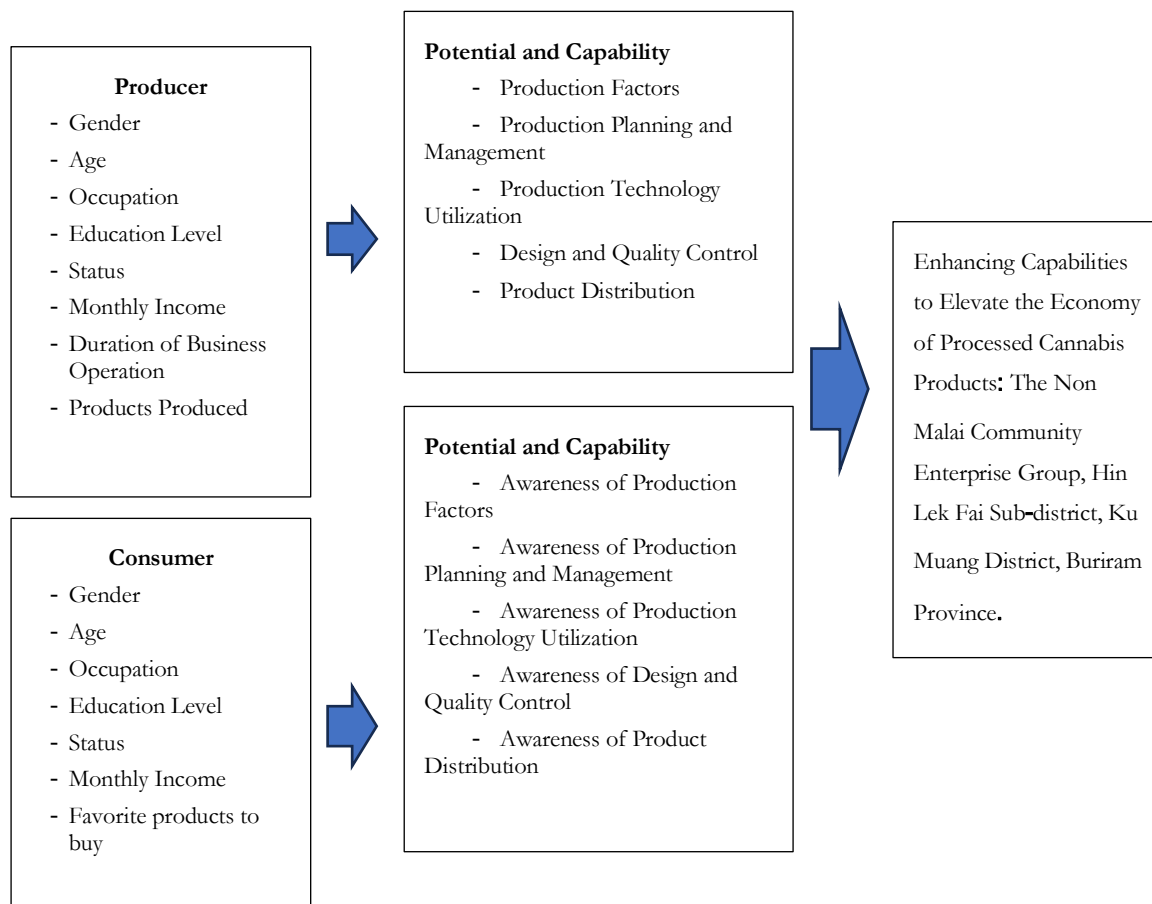
Research Methodology

Research Steps

Hold a meeting of the research working group to discuss the research project by studying relevant concepts, theories, and literature.

Establish a framework for developing and refining the research instruments by defining the scope of the tools and creating a quantitative questionnaire. The questionnaire will be revised according to the research framework and will cover the research scope. Additionally, the developed questionnaire will be reviewed for content validity by three experts, determining the Index of Congruence (IOC) value and making necessary adjustments based on their recommendations.

Test the quantitative questionnaire in another area with a sample size of 30 individuals, who will respond to the questionnaire. Assess the reliability by calculating the Alpha Coefficient (Cronbach's alpha). Then, collect data using the questionnaire in the research area and analyze the responses, evaluating the reliability of the questionnaire, which yielded a reliability coefficient of 0.87, and subsequently analyze the questionnaire results.

Prepare Chapters 1, 2, and 3, along with analyzing Chapters 4 and 5.

Population and Sample

The population is divided by the researcher into two groups: Group 1 consists of 140 entrepreneurs, and Group 2 includes consumers, from which data was collected from January to April, totaling 96 individuals. The sample is defined by the researcher as follows: Group 1 specifically consists of 30 individuals who express a desire to participate in the research project and produce processed products of household items. For Group 2, the researcher employed a calculation method using Taro Yamane's formula with a 95% confidence level and a margin of error of 0.05, resulting in a sample size of 96. The researcher used a total of 77 individuals, calculated using the following formula:

$$n = \frac{N}{1+Ne^2} \quad \text{which yielded the following values} \quad \frac{96}{1+[96x0.05^2]} = 77$$

When **N** is the size of the population,
n is the size of the sample,
e is the margin of error in sampling under a 95% confidence level

Statistics Used for Data Analysis

The analysis of the questionnaire quality, which involves determining the reliability of the questionnaire, uses Reliability.

The analysis of the questionnaire regarding personal information uses percentage values, while the analysis of the 5-point scale questionnaire employs statistical methods, including the mean ($\Box$), standard deviation (σ), T-Test for analyzing the variance of two variables, and F-Test or One Way ANOVA for three variables.

Research Conclusion

In studying and analyzing data related to this research, the researcher summarized the findings according to the objectives as follows:

First Objective : To investigate the potential and capabilities of the Non Malai Community Enterprise Group in Hin Lek Fai Subdistrict, Ku Muang District, Buriram Province. The researcher collected data from a total of 30 entrepreneurs or producers, most of whom were male, aged between 41 and 50 years. They were engaged in agriculture, had educational qualifications below a bachelor's degree, were married and had an income of less than 15,000 baht. Most had been involved in cannabis processing for 1 to 5 years, producing cannabis-based products such as soaps, among others. The research findings indicated that;

Table 5.1 Presented Details Regarding Production Factors

Topics	Mean	S.D	Level	Rank
Factors of production	3.10	0.85	Moderate	2
Production planning and management	2.23	0.77	Low	3
Utilization of production technology	2.05	0.69	Low	4
Product design and quality control	3.25	0.66	Moderate	1
Product distribution	1.92	0.72	Low	5
Total	2.51	0.74	Moderate	-

Overall, the topics were rated at a moderate level (2.51). However, when considering the details, it was found that ranked first was the aspect of product design and quality control (3.25), followed by the aspect of factors of production (3.10), production planning and management (2.23), utilization of production technology (2.05), and product distribution (1.92). Upon further examination of the details, it was found that;

Ranked first was the aspect of product design and quality control, which overall was at a moderate level (3.25). However, when considering each detail, it was found that the highest rated was that producers were able to control production quality without posing a risk to consumer health (4.70), followed by the ability of producers to process cannabis into products, use it in cooking, or make it into medicine in accordance with the law (4.63). The lowest rated aspect was the ability to design a brand that reflected local identity (2.50), followed by the ability to design product packaging (2.33), and to design and decorate stores for product sales (2.07).

Ranked second was the aspect of factors of production, which overall was rated at a moderate level (3.10). However, when considering each detail, it was found that the highest rated was having sufficient land for cannabis cultivation (4.40), followed by having enough labor for production (3.70). Rated at a moderate level was having sufficient raw materials, specifically cannabis, for production (3.00). The lowest ratings were for having the knowledge and ability to be an entrepreneur (2.37) and having sufficient capital for production (2.03).

Ranked third was the aspect of production planning and management, which overall was rated at a low level (2.23). However, when considering each detail, it was found that rated at a moderate level was having knowledge of each stage of production and the ability to control production timelines (2.53). The lowest ratings were for having the ability to reduce production costs (2.27), being able to control inventory while producing according to customer demand (2.13), and having the capability to deliver products to consumers quickly when orders were placed online (2.67).

Ranked fourth was the aspect of utilizing production technology, which overall was rated at a low level (2.05). However, when considering each detail, it was found that rated at a moderate level was the ability to use technology for product promotion (2.70). The lowest ratings were for having computers to store various data related to cultivation (2.07), being able to use technology for product processing (1.90), being able to use computer programs to write brochures for product promotion (1.83), and being able to use digital agricultural technology for planning cannabis cultivation (1.77).

Ranked fifth was the aspect of product distribution, which overall was rated at a moderate level (3.25). However, when considering each detail, it was found that the lowest ratings were for the ability to conduct live sales for product distribution (2.13), followed by the ability to sell products through a website (2.03), the ability to sell products on various platforms such as Facebook, YouTube, or others (2.00), the ability to create content in the form of videos for product promotion (1.77), and the ability to sell products offline or at their own sales locations (1.67).

The Second Objective: To study consumer behavior towards purchasing decisions regarding processed cannabis products. The researcher collected data from a total of 77 consumers, with personal information indicating that the majority were female, under 20 years old, students, and had not completed a bachelor's degree. Most of them were single and had a monthly income of less than 15,000 baht. The products they preferred to purchase the most were personal items, such as soap. According to the research findings, the overall topics of the questions comprised five aspects: awareness of the factors of production, awareness of the production planning and management system, awareness of technology usage, awareness of design and control, and awareness of product distribution. The researcher found the following results:"

Table 5.2 Presented an Overview of Consumer Behavior Regarding the Decision to Purchase Processed Cannabis Products.

Topic	Mean	S.D	Level	Rank
Awareness of Production Factors	3.17	0.91	Moderate	2
Awareness of Production Planning and Management	2.31	0.80	Low	4
Awareness of Production Technology Utilization	2.52	0.69	Moderate	3
Awareness of Design and Quality Control	3.77	0.55	High	1
Awareness of Product Distribution	1.88	0.76	Low	5
Total	2.73	0.74	Moderate	-

Overall, the questions regarding consumer behavior toward the decision to purchase cannabis-derived products were categorized at a moderate level (2.75). However, when considering each detail, it was found that those categorized at a high level included awareness of product design and quality control (3.77). Following this, awareness of production factor conditions was categorized at a moderate level (3.17), while awareness of technology use was rated low (2.52). Awareness of the planning system and production management (2.31) and awareness of product distribution (1.88) were categorized as low, respectively. When considering each detail, the findings were as follows:

The first category pertains to awareness of product design and quality control, which was generally rated at a high level (3.77). However, when examining each detail, it was found that the highest-rated aspect was the knowledge that the producer could design a brand that represents local identity (4.91). This was followed by the knowledge that the producer could control the quality of production without endangering

consumers' health (4.81) and the awareness that the producer could legally process cannabis into household products, cooking ingredients, or medicine (4.69). The aspects rated at a moderate level included the knowledge that the producer could design aesthetically pleasing product packaging (2.43), while those rated low included the knowledge that the producer had designed and decorated the store for product sales (1.99).

The second category pertains to awareness of production factor conditions, which was generally rated at a moderate level (3.17). Upon examining each detail, it was found that the highest‑rated aspect was the knowledge that cannabis was being cultivated for processing (4.48), followed by awareness of the production potential of entrepreneurs in this area (3.61). The aspects rated at a moderate level included knowledge that there was sufficient labor for production (2.75) and that there was enough cannabis for production (2.92). Those rated low included the awareness that the entrepreneur had sufficient costs for production (2.10).

The third category pertains to awareness of technology use, which was generally rated at a moderate level (2.57). Upon examining each detail, it was found that the highest-rated aspect was the knowledge that the producer had detailed information about how to grow cannabis (4.65). The aspects rated at a moderate level included the awareness that the producer used technology to promote the products (2.69), while those rated low included purchasing products because technology was used in processing (1.87). Following this, the awareness of obtaining information from promotional brochures (1.71) and knowing that cannabis was cultivated using digital agriculture planning methods (1.69) were also rated low.

The fourth category pertains to awareness of the planning and production management system, which was generally rated low (2.31). Upon examining each detail, it was found that aspects rated at a moderate level included the knowledge that the producer could produce products as ordered (2.65) and the awareness of a systematic production process (2.42). The aspects rated low included knowledge that the producer must have a sufficient inventory system to meet demand (2.27), followed by awareness that the producer had the ability to reduce costs (2.18) and awareness of the potential for shipping products if there were online sales (2.03).

The fifth category pertains to awareness of product distribution, which was generally rated low (1.88). Upon examining each detail, it was found that aspects rated low included the awareness of products sold through live streaming by the producer (2.01), followed by the knowledge of products through various platforms such as Facebook, YouTube, or others (2.00) and awareness of products on the producer's website (1.99). Additionally, awareness that the producer could sell products offline or at their own sales locations (1.70) and that products were designed using content such as clips for product promotion (1.68) were also rated low.

The results of this research indicated that when the researcher compared the overall data from each aspect regarding consumer opinions towards the production of cannabis-derived products, it was found that

Table 5.3 Displayed the Details of The Comparison of Opinions Regarding the Overall Consumer Behavior Towards Purchasing Cannabis-Derived Products, Using the Gender of The Respondents as the Criterion.

Details of Topic	Sex	N	Mean	S.D	t	F
Awareness of Production Factors	Male	33	3.25	.450	.778	.439
	Female	44	3.16	.490		

Awareness of Production Planning and Management	Male	33	2.15	.453	-1.283	.203
	Female	44	2.28	.432		
Awareness of Production Technology Utilization	Male	33	1.92	.500	-1.624	.111
	Female	44	2.08	.270		
Awareness of Design and Quality Control	Male	33	3.04	.254	-2.545	.013
	Female	44	3.17	.196		
Awareness of Product Distribution	Male	33	1.97	.265	2.270	.026
	Female	44	1.80	.349		

* Statistically significant at .05

When comparing the opinions of respondents regarding the overall consumer behavior towards purchasing cannabis-derived products, using the gender of the respondents as the criterion, it was found that there were no significant differences in opinions in the areas of awareness of production factors, awareness of the planning and management systems, and awareness of technology use, with a statistical significance level of .05. However, two factors showed significant differences: the awareness of product design and quality control, and the awareness of product distribution, both of which had differing opinions at the .05 significance level. And when comparing using the level of education, the following results were found

Table 5.4 Presented Details Regarding the Comparison of Opinions Concerning the Overall Consumer Behavior Towards Purchasing Cannabis Processed Products, Using the Education Level of The Respondents as A Criterion, And Employing ANOVA (LSD) For the Analysis.

Topic	Source of variance	SS	df	MS	F	Sig.
Awareness of Production Factors	Between Groups	1.448	2	.724	3.454	.037
	Within Groups	15.512	74	.210		
	Total	16.960	76			
Awareness of Production Planning and Management	Between Groups	7.632	2	3.816	38.809	.000
	Within Groups	7.276	74	.098		
	Total	14.908	76			
Awareness of Production Technology Utilization	Between Groups	4.090	2	2.045	20.173	.000
	Within Groups	7.502	74	.101		
	Total	11.592	76			
Awareness of Design and Quality Control	Between Groups	.638	2	.319	6.968	.002
	Within Groups	3.390	74	.046		
	Total	4.028	76			
Awareness of Product Distribution	Between Groups	2.190	2	1.095	13.942	.000
	Within Groups	5.813	74	.079		
	Total	8.003	76			

*Statistically significant at .05

Respondents expressed differing opinions across all aspects, including awareness of production factors, understanding of production planning and management systems, recognition of production technology

usage, awareness of product design and quality control, and awareness of product distribution. These differences were statistically significant at the .05 level. When the findings in each aspect, it were tested pairwise, the results were as follows:

Table 5.5 Presented the Details of The Pairwise Tests for Each Aspect of The Overall Topic.

Overall topic	Educational level	Below bachelor's degree	Bachelor's degree	Above bachelor's degree
Awareness of Production Factors	Below bachelor's degree		-.304*	-.249*
	Bachelor's degree			
	Above bachelor's degree			
Awareness of Production Planning and Management	Below bachelor's degree			.719*
	Bachelor's degree			.567*
	Above bachelor's degree			
Awareness of Production Technology Utilization	Below bachelor's degree		.463*	.463*
	Bachelor's degree			
	Above bachelor's degree			
Awareness of Design and Quality Control	Below bachelor's degree		-.183*	-.183*
	Bachelor's degree			
	Above bachelor's degree			
Awareness of Product Distribution	Below bachelor's degree			.390*
	Bachelor's degree			.278*
	Above bachelor's degree			

*Statistically significant at .05

The table revealed the following findings: 1) Respondents with an education level below a bachelor's degree regarding the awareness of production factors expressed lower opinions than those with a bachelor's degree and above. 2) Respondents regarding the awareness of the planning and production management system with an education level below a bachelor's degree expressed higher opinions than those with an education level above a bachelor's degree, while respondents with a bachelor's degree expressed higher opinions than those with an education level above a bachelor's degree. 3) Respondents with an education level below a bachelor's degree regarding the awareness of technology usage expressed higher opinions than those with a bachelor's degree and above. 4) Respondents regarding the awareness of product design and quality control with an education level below a bachelor's degree expressed lower opinions than those with a bachelor's degree and above. 5) Respondents with an education level below a bachelor's degree regarding the awareness of product sales expressed higher opinions than those with an education level above a bachelor's degree, and respondents with a bachelor's degree also expressed higher opinions than those with an education level above a bachelor's degree.

Discussion

In this research, the researcher developed a questionnaire to analyze the enhancement of production capacity for cannabis-based processed products. This is because Thailand has legalized the cultivation of cannabis under conditions prescribed by laws related to the use of cannabis for medical and research purposes. Individuals are allowed to grow cannabis in limited quantities as authorized by relevant authorities, such as the Ministry of Public Health, and must register and obtain official approval from the designated agencies. Regarding the production of cannabis-based goods, cannabis can be used to manufacture various products such as medicine, cosmetics, dietary supplements, or herbal products that are certified by health authorities. Additionally, the use of cannabis for medical purposes, such as relieving pain and treating certain illnesses, is another avenue of production (Ministry of Public Health, 2022). In Hin Lek Fai Subdistrict, cannabis is also cultivated, and most of it is processed into products like soap, which has become widely popular for sale. The researcher also found that;

For the producers, overall findings indicate that the opinions are at a moderate level (2.51). This is due to the fact that many entrepreneurs are new to production, especially in processing cannabis products. The processing knowledge was derived from training programs conducted by university professors and government agencies to encourage production, such as soap products. This has led to increased awareness within the village about production, incorporating the community's identity and creating local brands. Many producers have been manufacturing and selling products for only a few years, which suggests that there are several areas of improvement needed. However, when considering the details of each question, the top-ranked area is product design and quality control (3.25). Although it ranks first, it is still at a moderate level. Notably, within this main topic, the highest-ranked sub-item, which falls in the "most" category, is that producers can control product quality without endangering consumers' health (4.70). This is followed by the producers' ability to process cannabis into household items, food ingredients, or medicine in compliance with legal standards (4.63). These findings reflect that all producers have concerns about the production of cannabis-based products. Before production can begin, there needs to be a thorough study of legal regulations to determine whether it is permissible and how safe it is, given that cannabis is a plant with both risks and benefits. Nutt, D. J. (2019) discussed the benefits of cannabis, noting that cannabis contains cannabinoids, which are beneficial for alleviating pain, such as chronic pain that does not respond to other medications. It also helps control nausea and vomiting in cancer patients undergoing chemotherapy, treats certain types of epilepsy, particularly in children where other medications fail, and may help alleviate depression and stress in some groups of patients. On the other hand, Hall, W. (2015) mentioned the risks of cannabis, noting that it can lead to long-term addiction if used excessively or for extended periods. It may impair memory and learning, especially in adolescents whose brains are still developing. High doses of cannabis can increase the risk of mental disorders such as hallucinations or paranoia and may affect the respiratory system if inhaled over the long term, as it contains harmful chemicals similar to those in tobacco smoke. Therefore, producing cannabis-based products requires a detailed study of legal regulations before proceeding with production, as it could pose risks to both consumers and producers, potentially leading to legal violations. This is consistent with the research of Sanchez, L. M., & Kim, J. H. (2020), who emphasized that producing cannabis products requires a thorough understanding of legal regulations and guidelines, particularly for products intended for medical and industrial use. Their research highlights the importance of legal compliance to mitigate legal risks and challenges in bringing products to market.

The findings regarding consumer behavior toward purchasing cannabis-based processed products reveal that the majority of male and female respondents had no statistically significant difference in opinions at the .05 level. However, consumers with different educational levels exhibited significantly different opinions at the .05 level. Overall, the opinions across all aspects were found to be moderate. This is because

the use of cannabis products is still a relatively new concept, and consumers may have concerns about using such products for consumption. As a result, there is not much demand for cannabis‑based products for consumption, but there is more interest in using them for non‑consumable purposes. In other words, consumers are more inclined to try products for practical use, particularly cannabis‑based soap, which can be tested and has received moderate feedback from consumers. This is because the use of cannabis-infused soap has gained popularity in recent years, aligning with the research of Ali, Z., & Ho, C. W. (2021), who explained that most people use cannabis‑based processed products in the form of soap because cannabis contains beneficial extracts known as CBD (Cannabidiol), which can help reduce inflammation, nourish the skin, and relieve allergic reactions. Their research highlighted the growing trend of cosmetic products containing cannabis, including cannabis‑based soap, which has become increasingly popular in countries where cannabis is legally permitted for medical and health benefits.

Another key finding is that consumers perceive cannabis‑based processed products in terms of product design and quality control at a high level (3.77). However, when examining the details, the highest‑rated factor is that consumers choose to purchase because they know that the producers can design a brand that reflects the local identity (4.91). The next highest is the perception that consumers purchase because they know that producers can control product quality without posing a risk to consumers' health (4.81). Lastly, consumers choose to purchase because they are aware that the producers can legally process cannabis into household items, food ingredients, or medicine (4.69). These three findings demonstrate that consumers are particularly interested in products that incorporate the community's identity into the brand and make the community's uniqueness visible. Moreover, they prefer cannabis‑based products that are produced legally and do not endanger consumers' health, often requiring government certification to influence their purchasing decisions. Producing cannabis-based processed products, especially household items like soap, shows a high potential for benefiting consumers. This aligns with the research of Lee, H. J., & Kim, Y. S. (2022), who conducted research on soap and emphasized the development of cannabis oil‑based soap in South Korea. They found that using cannabis extracts in soap enhances its antibacterial and antioxidant properties, making the skin cleaner and fresher. Similarly, Garcia, M. L., & Rodriguez, J. A. (2022), Spanish researchers, studied legal cannabis‑based soaps and found that these soaps have skin‑rejuvenating properties and help reduce skin problems such as acne and rashes. The researchers recommended cannabis-based soap for individuals with sensitive skin, highlighting its safety for consumers. Furthermore, this is consistent with the study of Yamamoto, K., & Saito, N. (2021) in Japan, where researchers found that cannabis extracts help tighten the skin and reduce wrinkles, making it popular among beauty‑conscious consumers.

The tendency for enhancing the efficiency based on the research findings derived from the highest level of opinions, serves as the primary reason for driving changes that will increase the capacity for producing cannabis‑based processed products. The researcher proposes the following diagram to illustrate this connection:

Figure 5.1 Illustrates the Details for Enhancing the Capacity for Producing Processed Cannabis Products.
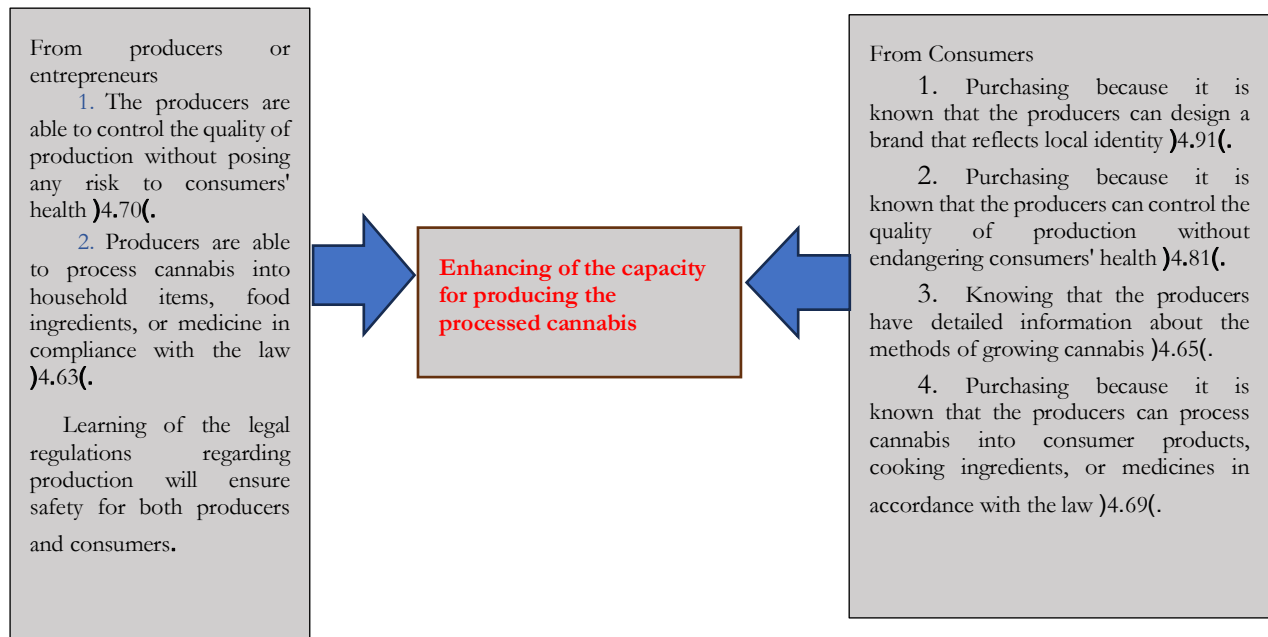
The image shows that producers have concerns about the production of cannabis-derived products, particularly soap. Therefore, if they are to produce these products, they must study the legal regulations and operate within the framework to ensure safety and marketability. Consumers believe that if cannabis-derived products, such as soap, are to be produced, manufacturers must create products that reflect the community's identity and ensure that they are safe for health. Producers need to have detailed information on the methods of growing cannabis and must study the legal regulations for safety before production. All these details will contribute to enhancing the producers' capacity to manufacture cannabis-derived products.

Recommendations

Recommendations for Applying Research Findings

Producers must study the legal regulations and operate within the framework to ensure safety and marketability.

If cannabis-derived products or soap are to be produced, manufacturers should ensure that the products reflect the community's identity and are safe for health.

Producers must have detailed information on the methods of growing cannabis before proceeding with production.

Legal regulations must be studied for safety before production begins.

Suggestions for Future Research

Research should be conducted on other business groups, whether in the area of Ku Muang District, Buriram Province, or other regions, and branding or creating a brand for these groups should be designed.

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