



# The Study of Satisfaction with Cannabutter Products among Cannabis Entrepreneurs in Chiang Mai Province

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## ABSTRACT

This study explores satisfaction levels with cannabutter products among cannabis entrepreneurs in Chiang Mai Province, Thailand, in light of the growing cannabis-infused food market. The research utilized a qualitative methodology, focusing on the development, sampling, and evaluation of cannabutter in four flavors: original, salted, sweet, and honey. Thirty participants with cannabis-related business experience were surveyed using a structured questionnaire assessing satisfaction across visual appearance, texture, aroma, and taste, employing a 5-point Likert scale. Results indicate that the salted variant consistently outperformed other flavors in consumer preference across all dimensions, with moderate overall satisfaction levels recorded (Mean: 3.29, SD: 0.12). The primary consumption motivations were health-related, and accompanying foods included salads and bread. The findings highlight potential for targeted product optimization, with the salted cannabutter variant showing strong market potential. This study offers valuable insights for advancing the development of cannabis-infused culinary products within Thailand's evolving regulatory landscape.

Keywords: Satisfaction, Cannabutter, Cannabis Entrepreneurs

## 1. Introduction

Cannabis (*Cannabis* spp.) has been utilized by humans for centuries in various forms, from fiber production to medicinal and recreational purposes. (Chandra et al., 2017) Recent developments in Thailand's cannabis regulations have created new opportunities in the food industry, particularly for cannabis-infused products. According to The Global Cannabis Report (2023), the global cannabis market is projected to reach \$103.9 billion, with medical cannabis accounting for 60% and recreational use making up the remaining 40%.

Cannabis contains numerous beneficial compounds, including THC (tetrahydrocannabinol) and at least 84 other cannabinoids such as CBD (cannabidiol), CBN (cannabinol), THCV (tetrahydrocannabivarin), and CBG (cannabigerol). These compounds have various therapeutic applications, including pain management, anti-nausea effects, appetite stimulation, and potential anti-cancer properties. (Jin et al., 2020) However, cannabis use can also have adverse effects such as short-term memory loss, dry mouth, impaired motor skills, red eyes, and anxiety.

One emerging product in Thailand's cannabis market is 'edible cannabis'. Cannabutter (cannabis-infused butter) is one of the well known edible cannabis worldwide. As butter is a common ingredient in daily food preparation, cannabutter presents a convenient and familiar way to incorporate cannabis into various food products. Despite the growing interest in cannabis-infused foods among both small and large entrepreneurs in Thailand, there are still relatively few products available in the market, and the concept of using a formerly illegal substance as a health food ingredient is novel to Thai society.

This study aims to examine satisfaction levels with cannabutter products among cannabis entrepreneurs in Chiang Mai province, Thailand. The research focuses on three main aspects: external appearance (color, shape, texture), sensory attributes (taste, smell), and psychoactive effects. The findings will contribute to the development of cannabis-infused food products to meet consumer preferences in this growing market.

## 2. Material and Method

This qualitative research study investigated consumer satisfaction with cannabis butter products among cannabis entrepreneurs in Chiang Mai province, Thailand. The methodology encompassed product development, sampling, and data collection procedures.

### 2.1 Cannabis Butter (Cannabutter) Production

The production method was adapted from Lawrence (2015). To comply with the Ministry of Public Health regulations regarding THC content in cannabis extracts, CBD full spectrum oil (100 mg concentration, Greenbird, Thailand) was used instead of ground cannabis flowers. Four different flavors were developed: original, salted, sweet, and honey (Table 1).

**Table 1:** Original Cannabis Butter Production Material, Equipment and Procedure

Materials:	<ol style="list-style-type: none"> <li>1. Unsalted butter (100g, 1 cup)</li> <li>2. CBD full spectrum oil (Greenbird, Thailand)</li> <li>3. Flavor – None<sup>1</sup></li> </ol>
Equipment:	<ol style="list-style-type: none"> <li>1. Double boiler or saucepan</li> <li>2. Wooden spoon</li> <li>3. Cheesecloth or fine mesh strainer</li> </ol>
Procedure:	<ol style="list-style-type: none"> <li>1. Melt butter in a double boiler or saucepan over low heat</li> <li>2. Add CBD oil at a 1:10 ratio (10 ml CBD oil)</li> <li>3. Simmer the butter-CBD mixture on very low heat for 2-3 hours, stirring frequently to prevent scorching</li> <li>4. Remove from heat and allow to cool slightly</li> <li>5. Place a funnel lined with cheesecloth or fine mesh strainer over a glass bowl</li> <li>6. Pour the hot cannabis butter mixture through the strainer, allowing liquid to drain from solids</li> <li>7. Once cooled, portion the cannabis butter into 30 sets of 10ml containers and refrigerate for later use in the experiment</li> </ol>

Note: <sup>1</sup> Add 5 grams of Himalayan Salt, 5 grams of Plain sugar and 5 grams of Natural honey for Salted, Sweet and Honey flavor respectively

### 2.2 Population and Sampling

The study population consisted of consumers with cannabis knowledge and understanding, specifically targeting cannabis business establishments in Chiang Mai province, Thailand.

### 2.3 Research Instrument Development

A questionnaire was developed to survey satisfaction and consumption behavior regarding cannabis butter products among cannabis entrepreneurs in Chiang Mai. The questionnaire consisted of three sections:

1. Personal Information
2. Cannabis Butter Product Satisfaction

**Table 2:** 5 points Likert rating scale meaning (Joshi et al., 2015)

Point	Meaning
5	Highest satisfaction
4	High satisfaction
3	Moderate satisfaction
2	Low satisfaction

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1	Lowest satisfaction
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### 3. Suggestions and Comments

#### **2.4 Pre-data collection testing**

Before collecting data from the target group, a test was conducted with experienced cannabis users and Cannabis Science Graduate students at Payap University. The pre-data collection test aimed to test the procedures and the readiness of the questionnaire (Wilkinson, 1998) to see if the procedures and questionnaires allowed the target group to express diverse opinions and to allow the research participants to propose issues that the researcher might not have thought of before. It also tested whether the cannabis butter used in the data collection was safe and of good quality for consumption.

#### **2.5 Data Collection**

The study aimed to collect data from 30 participants over a one-month period from August 20 to September 20, 2024.

#### **2.6 Data Analysis**

The data analysis process included

1. Verification of questionnaire completeness and accuracy
2. Data entry and processing using SPSS (Statistical Package for Social Sciences) for Windows Version 11
3. Statistical analysis appropriate to each questionnaire section

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## **3. Results**

### **3.1 Demographic Characteristics**

The study sample (n=30) comprised predominantly male participants (66.7%), with an overwhelming majority aged 20-30 years (90%). Educational attainment was high, with 80% holding bachelor's degrees and 10% possessing postgraduate qualifications. Monthly income was predominantly low, with 76.7% earning below 20,000 baht. Most participants (70%) had 1-2 years of experience in cannabis-related businesses.

### **3.2 Consumption Behavior**

Cannabis butter product awareness was substantial, with 83.3% of participants familiar with the product. Consumption frequency was low, with 90% consuming less than once per week. Consumption patterns revealed salad (43.3%) and bread (40%) as primary accompanying foods. Health considerations (83.3%) emerged as the primary motivation for consumption.

### **3.3 Product Satisfaction Analysis**

Satisfaction was assessed across multiple dimensions using a 5-point rating scale. Overall product satisfaction remained consistently moderate (Mean: 3.29, SD: 0.12), with notable variations across flavor profiles.

#### **3.3.1 Color Characteristics**

- Overall mean satisfaction: 3.44 (SD: 0.08)
- Highest satisfaction: Salty variant (Mean: 3.73)
- Lowest satisfaction: Original variant (Mean: 3.16)

#### **3.3.2 Texture Evaluation**

- Overall mean satisfaction: 3.53 (SD: 0.12)
- Highest satisfaction: Salty variant (Mean: 3.96)
- Lowest satisfaction: Sweet and Honey variants (Mean: 3.36)

#### **3.3.3 Aroma Assessment**

- Overall mean satisfaction: 3.27 (SD: 0.17)
- Highest satisfaction: Salty variant (Mean: 3.83)

- Lowest satisfaction: Honey variant (Mean: 2.93)

#### 3.3.4 Taste Profile

- Overall mean satisfaction: 3.18 (SD: 0.08)

- Highest satisfaction: Salty variant (Mean: 3.60)

- Lowest satisfaction: Original and Sweet variants (Mean: 2.96)

### 3.4 Comprehensive Satisfaction Insights

Across all evaluated parameters, the salty flavor variant consistently demonstrated superior consumer preferences. While overall satisfaction remained moderate, distinct variations were observed between different flavor profiles.

The statistically significant preference for the salty variant suggests potential market opportunities for targeted product development and flavor optimization in cannabis-infused butter products.

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## 4. Conclusion

This study provides valuable insights into consumer satisfaction with cannabutter products, specifically targeting cannabis entrepreneurs in Chiang Mai province, Thailand. The findings reveal moderate overall satisfaction, with the salty flavor variant consistently outperforming other flavors across various parameters, including color, texture, aroma, and taste. These results highlight the potential for further product development and flavor customization to enhance market appeal.

The demographic analysis of participants—predominantly young, educated entrepreneurs with limited cannabis business experience—underscores the importance of aligning product offerings with the preferences of this emerging market segment. Furthermore, the study's emphasis on health considerations as a primary motivation for consumption points to opportunities for positioning cannabutter products as both a culinary and functional health innovation.

In conclusion, the research lays a foundation for developing cannabis-infused food products that align with consumer preferences and regulatory requirements. By addressing the nuanced preferences observed in this study, cannabutter manufacturers and entrepreneurs can better capitalize on the growing cannabis-infused food market in Thailand and beyond.

### Acknowledgements

The research design followed appropriate ethical guidelines and regulatory requirements for cannabis-related research in Thailand.

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