Mapping business models for Sangalang Hapakat Oyster Mushroom Business Group, Tanjung Sangalang Village, Central Kahayan District, Pulang Pisau Regency, Central Kalimantan

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Abstract. This study aims to map business models of the Sangalang Hapakat oyster mushroom business group. The research was conducted in the village of Tanjung Sangalang, Central Kahayan District, Pulang Pisau Regency, Central Kalimantan which is located around the Tanjung Sangalang Village Forest (HD) area. The business group has cultivated oyster mushrooms for a long time and made it the main source of livelihood other than fishing. This research is qualitative research with a case study technique. The analytical method used is the Business Model Canvas (BMC) approach with 9 block elements. The research result showed that the customer segments of the business group are segmented markets. The value propositions given are quality products and various products with affordable prices. Company channels are in the form of direct and indirect sales. The customer relationship developed is in the form of personal assistance. Meanwhile, revenue streams are derived from product sales and revenue from training. Key resources consist of physical assets, group-owned capital, and trained human resources. Key activities include cultivation, packaging, and distribution. The key partnership consists of producers of raw materials such as sawdust producers, plastic shops, and mushroom seed producers. Finally, the cost structure includes several costs for raw material supply, transportation, and production equipment.

1. Introduction
Oyster mushroom is one of the potential food to be developed because it has a unique taste and has health-related benefits[1]. Oyster mushroom is a source of β-glucan which is generally used as a supplement because of its immunosuppressive activity, its potency to prevent and heal cardiovascular disease and to lower cholesterol. Approximately 80-90% of the oyster mushroom cell wall is composed of β-glucan [2].

The development of oyster mushroom businesses in the Province of Central Kalimantan (Kalteng) has started to increase and be well recognized by many people. Oyster mushroom production in Central
Kalimantan in 2018 reached 23,511 quintals, increasing about 93.17% compared to its production in 2017 which only reached 12,171 quintals[3]. However, this increase has not met the needs of oyster mushrooms in markets in the Central Kalimantan region. The demand in the big market in Central Kalimantan can reach 200 kg/day, while the supply to the market only reaches 100 kg/day. The Oyster Mushroom is sold at a price ranging from Rp. 25,000 to Rp. 35,000/kg[1].

One of the business groups that develops oyster mushrooms in Central Kalimantan is the Oyster Mushroom Business Group (KUJT) Sangalang Hapakat, located in Tanjung Sangalang Village, Central Kahayan District, Pulang Pisau Regency. This group has cultivated oyster mushrooms since 2012 and has contributed significantly to the economy of the Tanjung Sangalang village community. The oyster mushroom business run by this group continues to grow, which can be seen from some indicators like the increasing number of its members, the increasing productivity, and the condition in which many former members of the group finally become self-reliant to cultivate mushrooms. To support the continuity and development of the business of KUJT Sangalang Hapakat, it is necessary to understand the business models developed by the business group. The information is important to serve as a consideration for the future development of the business to improve the community livelihood in Tanjung Sangalang Village.

One approach in making business group development is to use the business model approach. (4–9) The business model approach is one of the critical factors for the success of an organization (10). The business model approach must be innovative so that an organization can survive and develop in a very dynamic era (11). Business Model Canvas (BMC) is one of the business model approaches that has succeeded in turning a complex business model into a simple one (12). BMC is a tool to map a business with its nine building blocks which can give the corporate clarity on its key activities, key resources, main partners, customers, values proposition, the way it relates to the customers, the financing structure, and the revenue source of the business. Business model canvas cannot only be used for portraying the current business model but also used for suggesting a new business model plan (13).

This model approach has been often used in research because it can be presented in a visual form in the form of a canvas painting, is easily understood by readers, and allows users to develop innovations to enhance existing business models. The BMC approach used to map the company's business model Yakiguni Maitade Co.Ltd, one of the big companies in Japan that produce mushrooms and processes mushrooms by differentiating their products into healthy food products and processed foods, getting the result that is running its business model, the company never gets tired to develop new technologies, finds consumers and produces the best products. Hard work, discipline, honesty, courtesy, and innovation are typical Japanese characteristics that are applied in the company's business activities. Family relationships and loyalty among workers who are built-in informal activities can make employees stay in one company (14). The same approach is also used to map business models and design strategies for developing CV oyster mushroom agroindustry, XYZ in Madiun City, (15) and also to map the mushroom cultivation business model of BUMDes Pesat Ambulu located in Pontang Village, Ambulu District as well as to design a development strategy (16).

This paper aims to identify and map the business model applied by KUJT Sangalang Hapakat using The Business Model Canvas (BMC) method that is developed by Osterwalder and Yves. Nine elements in BMC will be able to show how the company benefits from the values it has created for customers. The nine basic blocks essentially cover the four key attributes of a business, namely customers, offering, infrastructure, and finance [4,5]. Therefore, the results of this business model mapping will become a reference for similar businesses.

2. Material and methods
2.1. Site and period of the research
This research was conducted in Tanjung Sangalang Village, Central Kahayan District, Pulang Pisau Regency, Central Kalimantan within October-December 2020. The research location was chosen because the oyster mushroom business group in that village has been developing the business since 2012 and it has successfully survived until now.
2.2 Research methods

2.2.1 Research design. This research employs a qualitative method using a case study approach. Qualitative research is defined as a research procedure that produces descriptive data in the form of written or spoken words from respondents including in the form of behavior observed from the phenomena that occur during the research activity. The qualitative research method is based on the philosophy of postpositivism, used to examine the condition of a natural object as opposed to an experiment where the researcher is the key instrument. Qualitative research uses triangulation over the information gathered in the data collection techniques, the data are analyzed using an inductive/qualitative method, while the results of qualitative research emphasize a specific meaning rather than a generalization. The case study is one type of research with a descriptive approach and carried out in intensive and detailed manners focusing on individuals, institutions, or phenomena that occur with a narrow research area or subject.

2.2.2 Data collection. This analysis uses primary and secondary data. Primary data are obtained directly through participant observation methods, researchers directly involved and observe the process of oyster mushroom business activities from production to marketing, in-depth interviews with some key respondents including the head of the Sangalang Hapakat oyster mushroom business group and 5 members of the group and documentation. Meanwhile, secondary data come from other relevant sources, such as literature, books, documents, or previous research studies. The sampling technique was carried out by the purposive sampling method, namely the technique of determining the informant based on the subjective considerations of the researcher.

2.2.3 Data analyses. The data collected either from in-depth of direct observation are analyzed using the Business Model Canvas method, which describes the condition of the business model that has been developed by KUJT Sangalang Hapakat. BMC approach has succeeded in changing the concept of a complex business model into a much simpler model and helps companies recognize what their value proposition is, as well as how to build and run key activities and key resources in creating a value proposition, obtaining revenue streams, as well as in understanding how the products and services can be communicated properly to consumers until they are ready for consumption. BMC is displayed in the form of a canvas, containing 9 (nine) elements: customer segment, value proposition, channel, customer relationship, revenue stream, key resources, key activity, key partnership, and cost structure.

![Business Model Canvas](image)

**Figure 1.** Business Model Canvas.
3. Result and Discussions

3.1 Profile of Sangalang Hapakat Oyster Mushroom business group

The Sangalang Hapakat Oyster Mushroom business group (KUJT Sangalang Hapakat) was established in 2012 with 35 members. It was started from an arisan (regular social gathering) group in which the group performed savings and provide loans for its members. The member finally agreed to develop an oyster mushroom-based business. The development of the oyster mushroom business itself was inspired by one of the oyster mushroom business-related television programs. The group members then decided to buy 100 baglogs and started to develop the business. Baglog is a planting medium or a place used to grow oyster mushroom seeds. At the time of performing the business, the group found that the business was quite promising because it could provide daily income to group members. Given the positive evaluation, the group members continued to further develop mushroom cultivation. Over time, many members decided to do oyster mushroom cultivation independently. It was noted that until the end of 2020 the number of active members of the Sangalang Hapakat KUJT was 19 people while Mrs. Atie. Meanwhile, now 7 new cultivation mushroom groups have been developed in that village.

The location of KUJT Sangalang Hapakat is in Tanjung Sangalang Village, Central Kahayan District, Pulang Pisau Regency, Central Kalimantan. This village is ± 4 km from Bukit Rawi Village, the capital of Central Kahayan District and about 10 km north of Palangkaraya, the capital of Central Kalimantan Province. Central Kahayan sub-district has an area of 626 km² covering 14 villages, one of them is Tanjung Sangalang village. Tanjung Sangalang village is surrounded by a large area of wetlands and water bodies, such as swamps, lakes, and rivers. Lake Lais is a famous lake in this village which is one of the fishing sources in Central Kalimantan. Administratively, the boundaries of Tanjung Sangalang village are the village of Bukit Rawi in the north, the City of Palangkaraya (Kelurahan Pahanudet Seberang) in the south, the Kahayan River in the east and the west.

3.2. Mapping the business model of KUJT Sangalang Hapakat

The explanation of the nine-block elements in the business model currently implemented by KUJT Sangalang Hapakat and their mapping into the business model canvas is presented in Figure 2.

| Key Partnerships | Key activities | Value Proposition | Customer Relationships | Customer Segment |
|------------------|----------------|-------------------|------------------------|------------------|
| - Wood Powder supplier | - Baglog and seed process production | - The survival rate of Baglog that is offered to customers is high and with an affordable price | - Personal assistance | Demographics: Children to parents |
| - Plastic- supplying stores | - The process of growing mushroom seeds | - Healthy food and can be processed into various types of food products | | Geographic: Around Tanjung Sangalang Village and Palangkaraya City |
| - Mushroom Seed Producers | - Sales of seed, baglog, fresh mushroom, and processed mushroom products | - Mushrooms are always fresh | | Psychographics: Customers that need healthy, nutritious, and cheap food products |
| - Regional government | Key Resources | | | Mushroom lovers |
| | - Human resources | | | |
| | - Production Equipment | | | |
| | - Mobile phones | | | |
| | - Capital | | | |
| | - Motorcycle | | | |

Cost Structures
- Cost of purchasing raw materials
- Production equipment costs
- Transportation costs

Revenue Streams
- Revenue from sales
- Income obtained from training

Figure 2. KUJT Sangalang Hapakat Canvas Business Model.
Customer segments
In simple terms, this segmentation division is the process of dividing the existing consumers into manageable and feasible groups based on general characteristics, such as age, gender, loyalty, purchase frequency, and so on in the context of marketing activities. Each of these groups consists of consumers who have the same or almost the same characteristics. Therefore, market segmentation is a marketing strategy that is carried out consciously and intentionally to divide the market into several parts, as a basis for fostering certain parts to become the specifically targeted market [8].

Applying the marketing system, Sangalang Hapakat business group categorizes its customers into 3 general segments, namely based on demographic, geographic, and psychographic aspects [9]. From the demographic category, it consists of 2 segments, namely customers who like processed oyster mushroom products (intermediary of end products) and those who like fresh oyster mushrooms. Those who like processed oyster mushroom products can be further specified into several groups, such as parents and children. There are many types of processed oyster mushroom products provided by KUJT Sangalang Hapakat, including mushroom chips, rissoles, nuggets, and satay, making them popular in different age groups. From the geographical category, the customer segment consists of the consumers living in the area around Tanjung Sangalang Village and Palangkaraya City. Meanwhile, from the psychographic category, the marketing system is focused on the customer segment that adopts a healthy diet by consuming healthy but affordable foods. In addition, it covers the customer segment that is interested to cultivate mushrooms individually or in a group either for business or personal consumption purposes.

Value proposition
Value propositions are a reason that makes consumers switch from one company to another, which contains a combination of the benefits that the company offers to consumers [10]. The value propositions offered by KUJT Sangalang Hapakat are 1) Performance, KUJT Sangalang Hapakat always strives to produce quality baglogs so that they have a high survival rate, 2) Customization, KUJT Sangalang Hapakat provides opportunities for consumers to order products as they personal wish. Consumers can determine the desired packaging size for fresh mushroom products (size kilogram or 1 kilogram), 3) Completion of work, KUJT Sangalang Hapakat applies product differentiation, namely seeds, baglog, fresh mushrooms, and mushroom-based processed products (chips, nugget, rissoles, and satay). 4) Low Risk of impaired mushroom growth, in terms of selling baglog products, the group only sells baglogs that have grown mushrooms, so the risk of mushroom harvest failure for buyers is significantly low.

Channels
This component describes how the company communicates and reaches segmented customers to provide the broad added value of its products. It includes the ways of interacting with customers, including distribution channels, sales channels, marketing, and other forms of communication. Based on the results of in-depth interviews, KUJT Sangalang Hapakat uses several means in distributing its products to convey the added value of their product, including reaching its customers directly by participating in exhibition activities facilitated by the local government, serving buyers at mushroom production houses, and reaching its customers through an indirect channel which is vegetable traders who sell fresh mushrooms every day.

Customer relationship
Customer relationship is built between the company and the customers. Customer relationship is a way for organizations to communicate to retain existing customers as well as get new customers. Customer relationship is an important factor for the sustainability of the organization [11]. KUJT Sangalang Hapakat performs personal assistance, the pattern of relationships obtained from closed and personal interactions between individuals. KUJT Sangalang Hapakat builds relationships with consumers by
doing promotions via Whatsapp and placing banners at the production house. Furthermore, the group offers a 2% deduction for the purchase of more than 1000 baglogs.

**Revenue stream**
The main source of income gained by KUJT Sangalang Hapakat is from sales activities, both sales of baglog, mushroom seeds, fresh mushrooms, and processed mushroom products. The average baglog production in 1 month reaches 3000 baglogs with a net profit of around IDR 10,000,000. The production of fresh oyster mushrooms alone reaches 150-200 kg/month with an income value of around 3-4 million rupiah/month from 1000 baglogs. Meanwhile, the production of oyster mushroom seeds reaches 400 bottles/month where the gross income can reach Rp.8,000,000,-/month. Oyster mushroom processed products are made only by order. The average income of KUJT Sangalang Hapakat members is around Rp. 1,000,000,-/month. In addition, the group gains additional income, when a member participates in mushroom cultivation training as a resources person.

**Key resources**
The main resource of the KUJT Sangalang Hapakat business group is human resources, namely group members. To maximize the performance of its members, each member is provided a job description according to his abilities. Competent human resources are an important factor in the performance of an organization, even more, the role of competent human resources has a greater proportion of company values [12]. Other key resources are the equipment and materials needed to support production processes, both production of baglog and mushroom seeds. Product distribution and communication systems to the customers also become key resources of the Business Group. Mobile phones and motorcycles play a vital role in enhancing the business continuity process because most transactions with the customers are done through a mobile phone application, while motorcycles are used to deliver the product to the customers.

**Key activities**
The main activities of this oyster mushroom business are producing and selling mushroom products. Production activities include growing mushroom seeds, making mushroom baglogs, harvesting fresh mushrooms, processing mushrooms into end products (ready-to-eat products), and packaging. Sales are carried out directly at the mushroom production houses, or by a request from customers who often order products in a specific variant and number.

**Key partnership**
This element describes a business's network of suppliers and their partners. Partnerships are useful for reducing the risk arising in a business process, by optimizing partner channels to widen the scope and market segmentation of a business. The investigation shows that KUJT Sangalang Hapakat has some key partners in running its business, including:

1. **Raw Material Suppliers**
The group develops cooperation with sawn timber producers in Palangkaraya City to ensure the availability of sawdust. The company also partnered with a plastic equipment store in providing baglog media.

2. **Mushroom Seed Producers**
In addition to producing mushroom seeds, to ensure the availability of mushroom seeds as the main raw material for oyster mushroom cultivation, KUJT Sangalang Hapakat collaborates with mushroom seed producers in Palangkaraya City.

3. **Government**
The government’s role is to support the development of the business run by KUJT Sangalang Hapakat. In the context of business development, KUJT Sangalang Hapakat is often involved in business development training activities or product exhibitions. The groups also get financial assistance from the government’s programs, particularly social forestry programs and peatland
restoration programs. These are important to expand the scope and enhance the quality of the KUJT Sangalang Hapakat business.

Cost structure
The costs incurred by KUJT Sangalang Hapakat to run an oyster mushroom business include the cost of buying raw materials, purchasing production equipment, and distributing the products to the customers. The cost of production materials incurred to produce 3000 baglogs is around 5 million rupiah. The cost structure does not include labor wages and marketing costs. The members involved in production processes are unpaid labor, and they only get benefits from the sold products. Meanwhile, actual marketing cost which is communication cost through mobile phones is borne by each member who plays as a personal marketer.

4. Conclusion
A business needs the right strategy, management, and systems that can make it easier for its members to work effectively and by the targets or objectives of a business group. In the business model canvas, KUJT Sangalang Hapakat has a segmented market, offering several value propositions to customers in terms of forming a variety of quality products at affordable prices, conducting direct and indirect sales as their marketing channel, and developing personal assistance to customers. Their revenue stream comes from product sales and revenue from training. Their main resources consist of physical assets, group-owned capital, and trained human resources. The main activities to expand its business include mushroom cultivation, packaging, and distribution. They collaborate with several key partners including sawdust producers, plastic shops, and mushroom seed producers. The cost structure of its business includes the cost of procuring raw materials, transportation, and production equipment.

Business model canvas can help business groups grow their businesses effectively and efficiently by identifying some of the key elements for successful business development. The business model carried out by KUJT Sangalang Hapakat has proven to have provided an alternative additional income for the community through oyster mushroom cultivation. Identification of existing business models becomes the basis for the development of further business models that can be used as a reference or sustainable business pattern for oyster mushroom cultivation.

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**Acknowledgments**

The research was supported by the government budget for the National Economic Recovery Programs financial year of 2020. The authors acknowledge Aditia Noor Robby, Dian Cahyo Buwono, and Edy Suryanto for their assistance during the fieldwork. Our great appreciation goes to the anonymous reviewers who have provided constructive inputs to this paper. We are also grateful to all of those who have contributed to this publication, particularly the late Bapak Hamdani Fauzi, the co-author as well as my supervisor who had never stopped encouraging and helping me to publish this paper. This paper is dedicated entirely to him who passed away on May 28, 2021. May he rest in the side of Allah.