



Community Service Activities: Discover the Unique Selling Proposition of Fermented Cassava from Different Packaging

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ABSTRAK

Desa Waru memiliki prospek bisnis fermentasi singkong yang sangat baik sebagai produk industri rumah tangga. Masalah yang dihadapi produsen saat ini adalah umur simpan produk yang terbatas, tidak adanya proposisi penjualan yang unik, dan kurangnya identitas merek. Kegiatan pengabdian masyarakat ini bertujuan untuk 1) mengedukasi pentingnya kemasan yang baik dan 2) memberikan pelatihan pembuatan dan pengemasan singkong fermentasi dengan berbagai bentuk bahan. Dilaksanakan pada bulan Maret 2022, di Desa Waru, Kecamatan Parung, dengan menggunakan dua metode, yaitu metode seminar dan demonstrasi. Jenis dan pendekatan penelitian yang digunakan adalah analisis deskriptif dengan pendekatan kualitatif. Teknik pengumpulan data diperoleh dari observasi, wawancara, dan dokumentasi. Teknik yang digunakan untuk mengukur indeks profitabilitas dan persepsi mitra adalah rasio R/C dan skala Likert. Rasio R/C adalah 1,37, sedangkan simulasi menunjukkan bahwa produsen dapat meningkatkan keuntungan hingga 375% dan 416% dengan mengemas ulang produk dengan ember bambu dan kotak plastik. Studi ini menyimpulkan bahwa produksi singkong fermentasi menguntungkan dan mitra mengetahui proposisi penjualan produk yang unik.

ABSTRACT

Waru Village has excellent business prospects for Fermented Cassava as a home industry product. The existing problems encountered by the producer were limited product shelf life, the absence of a unique selling proposition, and the lack of brand identity. This community service activity aimed to educate the importance of good packaging and provide training on the production and packaging of Fermented Cassava with various forms of material. It was conducted in March 2022, in Waru Village, Parung Sub-district, using two methods, i.e seminar and demonstration method. The type and research approach used was descriptive analysis with a qualitative approach. Data collection techniques were obtained from observation, interviews, and documentation. The technique applied to measure the profitability index and partners' perceptions was the R/C ratio and Likert scale. The R/C ratio is 1,37, while the simulation demonstrated that producers could increase profits by up to 375% and 416% by repackaging the product with bamboo buckets and plastic boxes. This study concludes that the production of Fermented Cassava is profitable and partners are aware of the product's unique selling propositions.

1. INTRODUCTION

Waru Jaya Village is one of the villages in the Parung Sub-district of the Bogor Regency. It has a total area of 291 hectares and is bordered by Cidokom Village to the North, Parung Village to the South, Warujaya Village, Parung, and Pemagarsari to the West Side. This village is dominated by young individuals (ages 20 to 55) who are highly productive. Most of the population holds a high school education, followed by junior high school and primary school graduates, and a minor number of bachelor's and master's degree holders. People in this village are either self-employed or private employees, and most women are housewives. Agricultural products such as rice and secondary crops, are primarily for food consumption in this village. The predominant crop grown is cassava (82%), followed by sweet potatoes and peanuts. The cassava crop is popular amongst smallholder farmers due to its inherent ability to gain high yields under sub-optimal and marginal conditions where other staple crops may fail (Iragaba et al., 2021; Prathap & C.C., 2020). Cassava is the raw material of Fermented Cassava that is popular as a traditional food in most developing

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countries (Isa et al., 2021; Surono, 2016). Fermentation is a technique to improve functional and nutritional compounds, reduce toxigenic contents, and increase shelf-life (Adeyemo & Okoruwa, 2018; Annunziata et al., 2020; Lestari et al., 2019). Fermented Cassava is produced on a small scale usually in the home industry and local market, particularly in the traditional market covering Parung village (Djukic-Vuković et al., 2021; Muhialdin et al., 2022).

Even though the business has been operated for a lengthy period, it lacks brand identity and has poor management performance. Generally, Fermented Cassava is not packaged well. This product is directly placed in the aluminum box that is set on the motorbike. Packaging and labeling are required for the product's identity and value addition. Similar packaging across producers tends to mislead consumers into believing that the same product has been sold with the same flavor (Suhardadi, 2019). Products without packaging are less appealing since they provide no added value (Imiru, 2017; Vasileiadis et al., 2019). A product's packaging is an essential instrument that serves as an appeal to attract consumers and those who wish to purchase the product. Packaging entails designing and packaging activities intended to protect the product (Kotler & Armstrong, 2008; Zani & Ismail, 2019). Since packaging is undergoing a shift or change in purpose, the presence of product packaging should be a means of communication or marketing that can increase sales. Initially, packaging served merely to protect a product; presently, packaging serves as an instrument to identify the product's brand. Waru village has the potential not only to produce Fermented Cassava but also for market networking. Adding value improves a company's business, whether that is providing better quality products and services, and/or being prepared for a unique selling proposition. In addition to preserving product quality, attractive packaging will improve its selling price (Imiru, 2017; Pandey & Firoz, 2018; Vasileiadis et al., 2019), allowing the product to generate additional revenue for the enterprises or the community.

A group of teachers and students from the Faculty of Agriculture at the University of Muhammadiyah Jakarta oversaw this sign and took the initiative to help the community. The objectives are 1) to provide basic knowledge of food packaging; thus, producers will be able to increase the added value and become more economically empowered; and 2) to conduct training on the production and packaging of Fermented Cassava with various forms of material such as plastic box, plastic, and bamboo bucket, including to design and provide the label of Fermented Cassava, to producers and housewife customers in Waru village, Bogor regency – Indonesia.

2. METHOD

The training participants comprised 20 housewives and producers of Fermented Cassava in Waru Village. This community service activity was undertaken in March 2022 at Islam Hadharah ECED, Kenanga St. 01 Neighborhood Unit, 04 Community Unit, Waru Village, Parung Sub-district, Bogor Regency. This activity employs two methods: 1) the presentation method, which serves to convey basic information regarding benefits, functions, materials, packaging procedures, costs, and potential revenue, and 2) the demonstration method, by showing how to make and pack the Fermented Cassava proficiently, including the application of labels. This training was conducted to raise the added value of their products and to serve direct experiences with proper packaging.

Preparation phase including pre-survey, the survey begins with planning and selecting. The selection of partners was based on their experience and ability. Then continue with establishment of an activity plan, after that conducting a discussion between the team and participants was conducted to convey technical implementation and training instruments. The discussion also involved the distribution of resources by the two parties. Participants were passionate about joining and contributing their personnel and providing a place for the program. On the other hand, the team provided containers, consumption, and equipment for activity execution. And the last is preparation of training tools and materials. Stoves, steam pots, basins, rags, forks, spoons, knives, plates, filters, and tissues were the tools used in the training. Materials for training include cassava, yeast, water, plastic bags, cardboard, and plastic box.

In implementation stage there is demonstration of making Fermented Cassava, an instructor instructed the practice of making Fermented Cassava step by step. Participants were educated about the significance of preserving product appearance, durability, and hygiene for a specified time to attract consumers. The plastic box and bamboo bucket were distributed to participants to be studied and observed, especially on how the packages successfully made the product look more attractive. This activity included a discussion session, along with a question-and-answer session. The subsequent step was evaluation and monitoring. This was to monitor if participants continue product making and sales. The Likert scale was employed to measure the partners' perceptions towards approval level of the uniqueness of Fermented Cassava from different packaging. A revenue analysis was conducted to overview the potential and profitability of Fermented Cassava production in Waru village.

3. RESULTS AND DISCUSSION

Result

Production Process of Fermented Cassava

The production of Fermented Cassava in Waru Village was performed with minimal effort. The daily production of this product is up to 300 kg. Local farmers provide the raw materials for cassava, except for the yeast which is imported from Sukabumi. A Fermented Cassava producer has one to three laborers that assist in the production process. The product is marketed in and around the district and its environs. Marketing is also conducted in traditional markets through regular delivery.

The producer utilizes an empty warehouse as a fermentation storehouse before distributing it using two-wheeled vehicles. In the Community Services activities, one producer was invited as an instructor to practice the making of Fermented Cassava. [Figure 1](#) shows the Fermented Cassava and product transporter.



Figure 1. The Fermented Cassava (1) and Product Transporter (2)

Socialization Programs

The socialization program encompasses the definition, function, and classification of packaging and the relationship between food ingredients and packaging ([Figure 2](#)). According to historical sources, packing existed since ancient times when human civilization peaked. This is because commercial items were exchanged among countries like Egypt, Mesopotamia, China, and India. Humans have practiced packaging since 4000 BCE, whereas storage predates packaging. There are generally three packaging styles: natural, traditional, and contemporary. All measures to extend the product life cycle can be classified as packaging. The act of storage comes before packaging. Preserving agricultural products arose when stationary farming techniques replaced nomadic farming techniques. The longevity of food has necessitated a heightened awareness of the importance of packaging.

Various factors, such as the frequency of use, the packaging structure, the material's rigidity, the level of environmental hazard, the degree of preparation for use, and the nature of its edible features, can be used to classify packaging. Environmental packaging should be considered both in terms of the packaging materials used and how they are produced, as well as operations and packaging waste. The ISO 14000 environmental criteria have a direct relationship with packaging.

There are special procedures for fermented food products where the producers should maintain the life of bacteria and yeast. It was reported a decline in microbial content due to the effect of the temperature, 37 °C being the most detrimental condition, while -20 and 4 °C seemed to be better than other parameters. The study concluded that fermented food products should be stored at -20 and 4 °C was the most convenient condition. The documentation of dissemination for the packaging of Fermented Cassava is shown in [Figure 2](#).



Figure 2. Dissemination for the Packaging of Fermented Cassava

Revenue Potential

In addition to providing outreach, this activity determined the potential profit of Fermented Cassava in Waru village. The objective of a revenue analysis is to compare costs and revenues. Producers obtain different prices depending on how the product is sold. Products are sold directly by passing on from door-to-door or placed in the market. Products sold by the market channel are valued higher in quantity and price levels than the ones sold directly. The revenue analysis is demonstrated in Table 1.

Table 1. Revenue Analysis of Fermented Cassava

No.	Description	Unit	Size	Price (IDR/unit)	Total (IDR)
Revenue					
1	Product sold (market channel)	200	Kg	7.500	1.500.000
2	Product sold (door-to-door)	100	Kg	5.500	550.000
Total Revenue		300	Kg		2.050.000
Cost					
a. Variable Costs					
1	Cassava	400	Kg	2.000	800.000
2	Yeast	1	Once	6.250	6.250
3	Firewood	1	Pack	20.000	20.000
4	Newspapers	1	Pack	5.000	5.000
5	Crackles/plastic	1	Buah	15.000	15.000
6	Transport/petrol	1	Day	400.000	400.000
Total Variable Costs					1.246.250
b Fixed Costs					
1	Electricity (water)	1	Day	12.500	12.500
2	Male workers	2	Man-units	70.000	140.000
3	Female workers	4	Woman-units	20.000	80.000
4	Instrument depreciation				16.805
Total Fixed Costs					249.305
Total Cost (IDR)					1.495.555
Total Revenue (IDR)					554.445
BEP unit (kg)					185
R/C ratio					1,37

Operating revenue is the deviation between total revenues and operating expenses. The calculation in Table 1 reveals that the Fermented Cassava business earns a profit of IDR 554.445 for every production cycle. The biggest expense was used for raw materials as much as IDR 800.000. On the other hand, the least cost expended was IDR 5.000, which was the cost of purchasing newspaper packaging.

The BEP value for Fermented Cassava is 185 kg. This indicates that farmers must produce as much as 185 kg of this product per day to reach the break-even point (no loss or profit). The R/C ratio of the Fermented Cassava business is 1,37. This indicates that every rupiah (IDR) invested in this business will generate revenue of as much as 1,37 rupiah.

The team also educated producers on the importance of packaging in leveraging their profitability. The analysis was conducted by simulating the effect on expenses and profitability of selling products under two packaging, i.e., the bamboo bucket and plastic box. Figure 3 depicts the profit potential for producers resulting from a change in packaging.

Base on Figure 3, the usage of plastic box packaging resulted in a 2,3-fold gain in revenue and a 1,4-fold gain in costs which was typically lower. The usage of bamboo bucket packaging resulted in a 2,2-fold rise in revenue and a 1,35-fold slight increase in expenses. In the simulation, the profits would raise from 100% to 375% and 416% for each packaging. The simulation assumes that product sales remain stable, however, the customer's willingness to pay for packaging modifications may be partially accepted or rejected.

The community service activities have been completed successfully and received positive responses from partners. An evaluation was performed using a questionnaire to determine the acceptance of the innovation of changes in Fermented Cassava packaging. Partner acceptance of modification in Fermented Cassava packaging was measured using 5 parameters, including willingness to pay more for new packaging of Fermented Cassava (i1), packaging enhances the appeal of the product (i2), the packaging is essential to preserve product cleanliness (i3), labeling is essential to expose product's uniqueness (i4), and labeling helps consumers to distinguish the product (i5). Figure 4 illustrates those parameters.

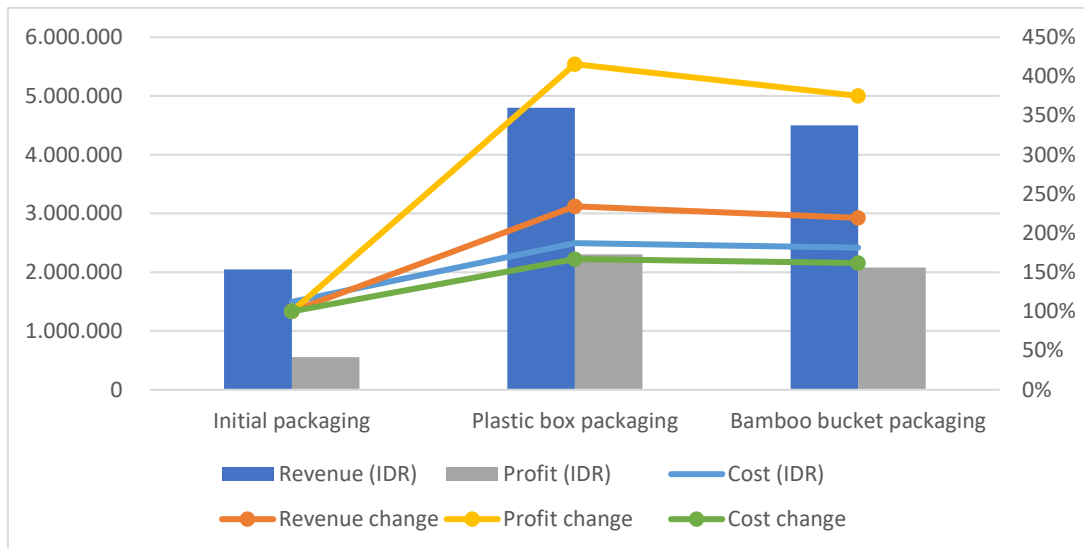


Figure 3. Graph of the Correlation Between Packaging Changes and Increase Profits

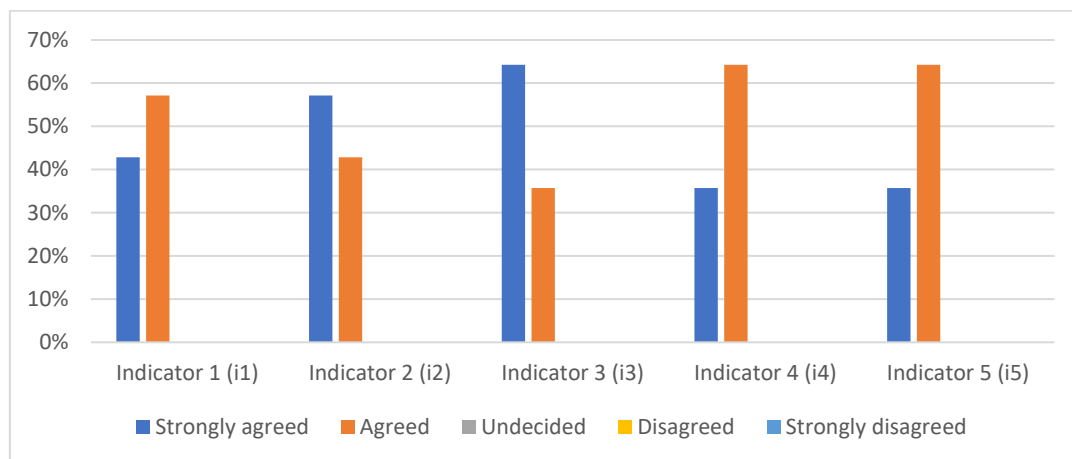


Figure 4. Chart of Partners' Perceptions of Community Service Programs

Figure 4 demonstrates that most responses of the respondents on the first indicator included as high as 8 respondents or 57,14% of the total number of respondents, who agreed with the assertion that consumers are willing to pay more for both bamboo buckets and plastic boxes packaging of Fermented Cassava. Meanwhile, those who strongly agreed were 6 respondents at 42,86%; on the other hand, none responded with undecided, disagreed, or strongly disagreed. On the second indicator, as high as 8 respondents strongly agreed, or 57,14% of those who responded strongly agreed. as indicated by the data. Meanwhile, 6 respondents agreed (42.86%) with that statement; on the other hand, none responded with undecided, disagreed, or strongly disagreed.

The number of respondents who strongly agreed with the third indicator was as high as 9, or 64,28% of the total respondents. This illustrates that respondents understand that packaging is vital to protect the cleanliness of Fermented Cassava products. Meanwhile, 5 persons (35.72%) agreed with that statement; on the other hand, none responded with undecided, disagreed, or strongly disagreed. Many respondents as much as 64.28% of the total respondents agreed that labeling and packaging are the essences of what makes the product or service better than competitors. Thus, the research indicates that numerous respondents support labeling in packaging. This data shows those who strongly agreed were 5 people or 35.72%; none responded with negative answers like undecided, disagreed, or strongly disagreed.

Most partners (64.28%) agreed with the assertions in the fifth indication. Labeling is substantial as it helps to grab the attention of a customer and differentiate homogeneous goods. The questionnaires resulted that there were 5 respondents (35.72%) who strongly agreed, while no respondents answered negatively with undecided, disagreed, or strongly disagreed.

Discussion

Unique Selling Proposition (USP) is one feature or perceived benefit of products that creates a meaningful way to set the product apart from competitors and encourage people to buy them (Niu & Wang, 2016; Pascall et al., 2022; Rao et al., 2019). USP is one of the key tools of marketing that is associated with brand perceptions. Empirical evidence shows that USP entices more favorable brand perceptions and greatly brings out the business from competition (Bakri et al., 2021; Cabello-Olmo et al., 2020). The principle is that a product can be the same, but uniqueness will make a difference. In particular, the USP could be obtained from the product's packaging (Imiru, 2017; Lestari et al., 2019).

Previous study state that product packaging has a significant effect on consumer purchase intentions (Khan et al., 2018). They defined USP packaging material as the strongest influence on consumer purchase intentions followed by packaging color, font style, packaging design, and printed information. A similar study added that the design of the wrapper and packaging innovation is also important factors from the consumer's perspective (Degu et al., 2021; Pandey & Firoz, 2018).

Packaging is extremely associated with sales. It creates an intense feeling of possession, satisfies the vision, and persuades the customer's mind (Suhardadi, 2019; Vasileiadis et al., 2019). In this activity, the packaging that was raised as a measurable material was the plastic box and bamboo bucket. The plastic box is made from PVC (*Polyvinylchloride*). PVC is characterized by ease of processing and blending, high-tensile strength, and free from radical polymerization. It does not affect the taste and look of packaged food and prevents it from contamination with bacteria or fungi during manufacture, distribution, and display (Dybka-Stępień et al., 2021; Imiru, 2017). Using plastic as packaging material often deals with concerns in pollution and health problems. On the other hand, bamboo bucket provides non-fossil-fuel-based and recyclable which have the potential for plastic replacement and are emissions-intensive (Aprilisya et al., 2017; Krisyanti et al., 2020). However, producers will consider which alternatives can be the best packaging to increase their profits.

Fermented Cassava business earns a profit which was the cost of purchasing newspaper packaging. This aligns with the study that reporting that generally Fermented Cassava gains a revenue-cost ratio of as much as 1,53 and 1,59 concluding this business to be profitable (Praptiwi et al., 2015; Setianingrum et al., 2021). This indicates that every rupiah (IDR) invested in this business. These results are in line with a similar study mentioned that the cost of raw materials becomes the biggest cost in production, while other components are spent in a very small proportion (Setianingrum et al., 2021). Supporting prior studies, this study suggests that producers should broaden their marketing network to attract other segments (Pascall et al., 2022).

It has been observed that packaging is the most important and powerful factor, which influences consumers' perspectives (Pandey & Firoz, 2018; Vasileiadis et al., 2019). Packaging increases the appeal of the product and increase consumers' purchasing willingness (Imiru, 2017; Pandey & Firoz, 2018). As stated by other researchers, the basic function of packaging is to keep the product clean and protects foods/beverages against microorganisms (Degu et al., 2021). Other researchers also suggest producers change the existing design to special unique designs which help to position the product (Vasileiadis et al., 2019). Labeling and packaging are two things that be combined by marketers to encourage potential buyers to purchase the product (Burhanudin, 2018; Suhardadi, 2019).

The study was followed up by conducting community service learning activities, which were well accomplished. The indicator of the effectiveness of the activity was an enhancement in comprehension of the significance of Fermented Cassava packaging; thus, producers could leverage the added value of their products and become more economically empowered (Prathap & C.C., 2020; Ratna Sumunar & Estiasih, 2015). The questionnaire indicated that the community was enthusiastic and mindful of the importance of packaging on perishable products and how the packaging creates its uniqueness. All questionnaires signified positive feedback either mentioned agreed or strongly agreed, implying that participants were willing to pay for an additional price for the value-added packaging.

The result also indicated that partners agreed that labeling and packaging create unique selling propositions that help them stand out from competitors. The findings summarize that the Fermented Cassava business conducted by producers in Waru Village was more profitable by utilizing a bamboo bucket and plastic box. The results emphasize a policy implication concerning the decision to add value to the packaging of Fermented Cassava in Waru village.

4. CONCLUSIONS

Base on the result estimates of average profitability by changing packaging are not sufficient to account for the impact of the decision to repackage the Fermented Cassava. Therefore, the cost component has been graphed as the impact on the selection process where producers could compare the cost and the

revenue. Producers are recommended to utilize bamboo buckets and plastic boxes for packaging. Decomposing the revenue-cost analysis, we found that repackaging products with bamboo buckets and plastic boxes are more beneficial than selling them without proper packaging. The findings conclude that value addition in Fermented Cassava packaging leads to an increase in unique selling value that enhances their business.

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