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Vol. 3 No. 01 (2023)

Andalasian International Journal of Social and Entrepreneurial Development (AIJSED)

ISSN: 2808-6732 (Online)

Available at: http://aijsed.lppm.unand.ac.id/index.php/aijsed

DOI: https://doi.org/10.25077/aijsed.3.01.26-31.2023

Article

Analysis of the Readiness Level of Research Result of Gambier Sector Products Innovation in Andalas University

Prima Fithri[1]*, Fandy Triawan[2], Rahima Andiny[1]

[1]Department of Industrial Engineering, Universitas Andalas, Padang, Indonesia
[2]Research and Development Agency of West Sumatra Province, Padang, Indonesia

Article Information

Received : 2023-01-11
Revised : 2023-02-01
Accepted : 2023-03-25
Published: 2023-04-23

Keywords

Keyword: product innovation, Gambier, teaching industry, Katsinov meter, readiness

*Corresponding Author

primafithri@eng.unand.ac.id

Abstract

One of the universities that is intensified to conduct research in producing innovative products is Andalas University (UNAND). Andalas University has 83 innovative products, including Gambier products from processing in the Teaching Industry Gambier UNAND. These processed Gambier products have not all been successfully commercialized. The obstacle usually experienced is that inventors need help knowing how to commercialize the product and whether the product has innovated. This study aims to determine the level of innovation readiness of three products in the Gambier sector that have never been studied before. Data collection was carried out through interviews with each product inventor and filling out questionnaires on the Katsinov Meter measuring instrument. Analysis of the measurement results was carried out using a fishbone diagram. Based on measurements, Fitopure (+)- Catechin and Unca Tea products are at Katsinov level 4 and level 2, respectively. Meanwhile, the scrub of Gambier products did not pass any Katsinov level. Some of the causes are that there is no business model concept, the Company has yet to conduct market research, it has not finished identifying market expansion needs, and it has not finished assessing technological and financial risks. Suggestions that can be given are that the Company needs to form a business model concept, conduct market research, expand the market, and assess technological and financial risks.

INTRODUCTION

The increasingly fierce business competition has many consequences for the Company's competition (Setiyono & Sutrimah, 2016). This requires each Company to do various things to maintain its products in the market. The success of a company is influenced by the Company's ability to obtain and use knowledge and implement it into a new product (Rajapathirana & Hui, 2016). Therefore, every Company must increase its research to innovate and increase the short product life cycle in fierce business competition (Ouariti & Zeroual, 2017).

In addition to companies, universities are encouraged to conduct research that produces innovative products by involving many parties, such as lecturers, students, and industry players. Minister of Research and Technology Bambang Brodjonegoro said that to see the importance of research for the creation of unique and innovative products and business development in the future; universities need to carry out approaches and learn about the business world and industry. He added that innovation based on solid research can produce highly competitive products. This certainly

makes the product more accessible for the industry to see. Based on interviews conducted with Ms. Prima Fithri, the secretary of Science Techno Park UNAND, also said the importance of universities in innovating products is because the more innovative products produced by universities indicate that these universities have good innovation performance.

Law Number 18 of 2002 concerning the National System for Research, Development, and Application of Science and Technology defines innovation as a research, development, or engineering activity to increase the practical application of new scientific values and contexts or new methods for practicing existing science and technology into products or production processes. Meanwhile, according to Wijaya et al. (2019), innovation can be defined as all new things in the form of ideas, ideas, practices, or goods that are consciously accepted for adoption by an institution, group, or individual. So, it can be concluded that innovation is a research, development, or engineering activity aimed at developing new ideas, ideas, and scientific contexts that are accepted and adopted by an agency or new ways to practice existing science and technology into products or production processes.

Every innovation actor needs to understand the stages of innovation to obtain mature product innovation results. According to Wijaya et al. (2019), the innovation stages in the organization consist of five stages. The first stage needs recognition. Every innovation actor must know the needs and problems faced by the community. Observations can be made directly or through some in-depth previous research. The need for a fulfilled product or service can provide satisfaction to a person's body and mind. The second stage of innovation is basic research and applicative research. Primary research is carried out to explain a scientific phenomenon; on the other hand, applicative research is carried out to provide solutions to practical problems found in society. Innovators can find various new ideas and ideas that can be applied to meet consumer needs and solve problems experienced by consumers.

After researching, the next step is development. The development process is carried out to continue the new inspiration obtained previously. The development of innovation requires knowledge transfer or technology transfer activities, taking into account inspiration, knowledge, and technology from many internal and external sources. This is carried out so that an innovation can significantly impact society. The next stage is commercialization, where a product or service is developed, distributed, and commercialized to users. In this stage, an innovation first interacts with users through socialization activities or marketing of innovative products. The last stage in innovation is diffusion and adoption. This stage determines whether a product or service innovation design can be accepted or even rejected by the community. If the community accepts an innovation, it will be adopted by the community and then diffused to a broader community.

One of the universities that directs its lecturers to produce innovative products is Andalas University. There are 83 innovative products from UNAND's research, divided into several focus areas, as shown in Figure 1.

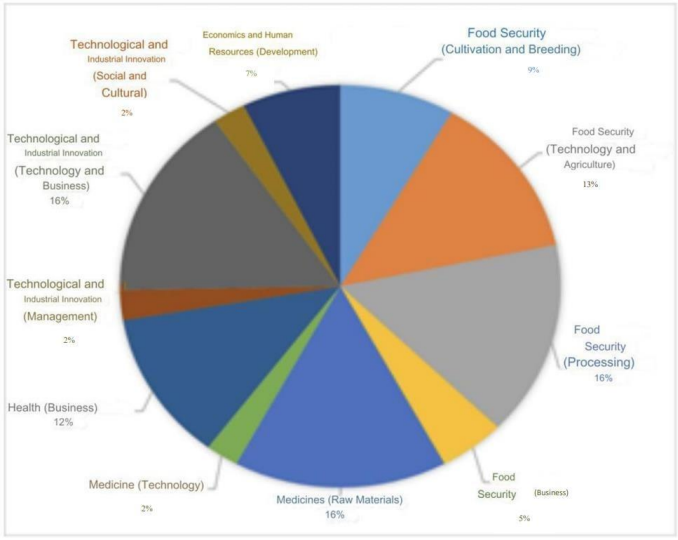

Figure 1. Innovation Products of UNAND Research Results

Of the 83 products, one is Gambier products, which result from processing in the Teaching Industry Gambier. It is a unit that manages explicitly processed Gambier products. The unit focuses on developing and transferring production technology for raw materials and downstream products from Gambier. The output offered by this unit is to increase the added value and usefulness of Gambier from upstream to downstream for the people of West Sumatra in particular and Indonesia in general (Profile of Teaching Industry Gambier Unand, 2020).

Gambier plants have much potential that can be utilized in the long term, especially the large number of Gambier plants found in West Sumatra, especially in Limapuluh Kota and Pesisir Selatan Regencies, which are specific superior commodities and the primary source of income for farmers in the area (Hosen, 2017). The export demand for Gambier products by India, Pakistan, Singapore, Bangladesh, Taiwan, Japan, Germany, and many other countries further supports the potential that can be developed from Gambier plants. Thus, communities around Limapuluh Kota and Pesisir Selatan districts can be empowered to increase the value of Gambier exports.

The catechin compound in Gambier plants also has the potential to be a natural antioxidant and antibacterial. The benefits of natural antioxidants in everyday life include being used as a seasoning for various types of food and drinks, refreshing the body, and preventing degenerative diseases such as cancer or killing microbes (Firdausni et al., 2020). The benefits of Gambier plants will be more pronounced if the plant is successfully processed into various products such as beauty products, medicines, and health drinks.

Gambier processed products have an excellent opportunity to be commercialized because the Teaching Industry of Gambier UNAND is technologically advanced in the production of raw materials and downstream Gambier products but has not been widely realized into an industry to increase the added value of Gambier materials for the people of Indonesia. Based on interviews conducted with Mrs. Prima Fithri, who has always been the secretary of Science Techno Park UNAND, this happens to one of them. Because inventors need help knowing how to commercialize the product and whether the product has been innovated or not. Therefore, the way that can be done is to measure the level of product innovation readiness.

In 2018, the Ministry of Research, Technology and Higher Education launched a measuring tool to measure the readiness or maturity of innovation carried out by a company, project, or activity program called the Katsinov Meter (Level of Innovation Readiness Meter). This measuring tool consists of 6 levels of readiness levels with seven aspects of assessment: technology, market, organization, partnership, risk, manufacturing, and investment. Through the Katsinov Meter Manual (2018), it is explained the importance of measuring the level of innovation readiness because,

through this measurement, inventors can find out the picture of the development of innovations that are being carried out, help in implementing innovations over a more efficient life cycle, help estimate increasingly fierce market competition, and estimate innovation activities or a faster technology life cycle.

Research on measuring the level of innovation readiness using the Katsinov Meter measurement tool has been carried out previously by Andriko (2019), who examined innovative research products in the Gambier and Mangosteen sectors. Bhaskara (2019), who examined innovative research products in the food, feed, fertilizer, medicine, and health sectors, information technology (IT) and creative industries, and about surfactants (Setiawan et al., 2018). The results of the research vary; there are several products that have reached Katsinov level 6, and there are several products that are still at Katsinov level 1. Meanwhile, the products to be studied in this study are Unca Tea, Gambier Scrub, and Fitopure (+)- Catechin. The three products have never been studied before, so it has yet to be discovered to what extent the level of innovation readiness of these products. As mentioned earlier, every Company needs to measure the level of innovation readiness of its products because innovation is an important activity that increases the short product life cycle in fierce business competition.

Therefore, the researcher conducted an Analysis of the Level of Readiness of Gambier Product Innovation Research Results of Andalas University study. With the Katsinov-Meter measuring instrument and the assessment indicators in the measuring instrument, it is hoped that this research can help to see the extent to which the level of innovation readiness of Gambier products that have succeeded in commercializing to be able to gain an advantage over competitors and the extent to which the level of innovation readiness of Gambier products that have not been commercialized to be commercialized.

RESEARCH METHODS

The method used in this research is the Katsinov method. This method was chosen because it can be used as a benchmark for innovation; through this method, target market measurements and future market potential can be made. Meanwhile, the measurement is carried out using the Katsinov Meter measuring instrument, which can determine whether an invention can be called an innovation product. Data collection used in this research is done through observation, questionnaires, and interviews with each product inventor. Data processing is done by filling in the questionnaire column on the Microsoft Excel-based Katsinov Meter measuring instrument based on the actual conditions of each product. Then, the output is obtained as a spider web-shaped graph. Analysis is carried out on the results of the assessment of the level of innovation readiness of each product using a fishbone diagram. From the results of the fishbone diagram, the proper proposal design is then carried out and implemented for the Company in the future.

RESEARCH RESULTS

The products studied were Unca Tea, Gambier Scrub, and Fitopure (+)- Catechin. The three products were chosen because they had never been studied before. Previous research related to Katsinov, studied by Andriko (2019), discussed the Analysis of the Level of Innovation Readiness in Innovative Research Products in the Gambier and Mangosteen Sectors. The research objects with Gambier-based materials used in the study were Gambier masks, Gambier tea, purified Gambier, Katevit, Gartekin, tanner Gambier flour, and election ink. The data required in this study is the condition of each invention product assessed from the indicators on the Katsinov Meter measuring instrument.

Data collection was carried out by interviewing the inventor of each product. The first interview was conducted with Prof. Dr. Amri Bakhtiar, MS, Apt, the owner of the Scrub's Gambier product. The second interview was conducted with Mrs. Cesar Welya Refdi, S.TP, M.Si, as the Head of STP Unand's Technology Implementation Center for Unca Tea and Fitopure (+)- Catechin products owned by Prof. Dr. Deddi Prima Putra, Apt. Interviews were not conducted with product inventors

because the parties concerned could only be met briefly.

The readiness level of Fitopure (+)- Catechin product innovation is at Katsinov level 4 (Chasm). This is because the percentage of assessment indicators met at Katsinov level 5 is only 79.17%, so it cannot proceed to the next level of assessment. The fishbone diagram for Fitopure (+)- Catechin product analysis can be seen in Figure 2.

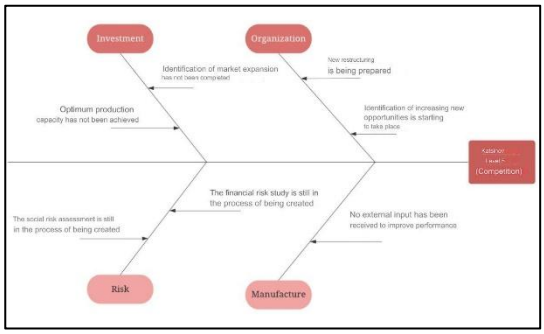

Figure 2. Fishbone Diagram of Fitopure (+)- Catechin Products

The level of readiness of Unca Tea product innovation is stated to be at Katsinov level 2 (Component). This is because the percentage of assessment indicators met at Katsinov level 3 is only 79.05%, so it cannot proceed to the next level of assessment. The fishbone diagram of Unca Tea products can be seen in Figure 3.

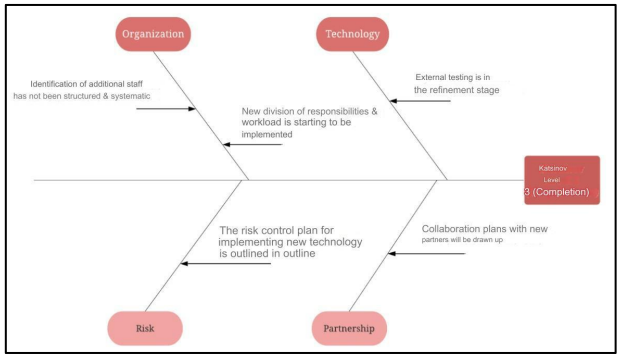

Figure 3. Unca Tea Product Fishbone Diagram

The Gambier scrub product did not pass any level of Katsinov. This is because the percentage of assessment indicators met at Katsinov level 1 is only 40.00%, so it cannot proceed to the next level of assessment. The fishbone diagram of the scrub of Gambier product can be seen in Figure 4.

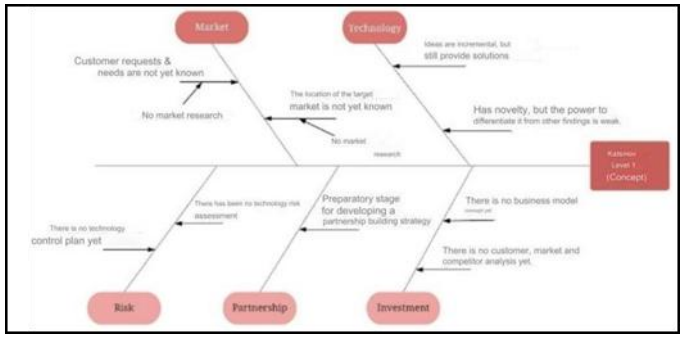

Figure 4 Fishbone Diagram of Gambier Scrub Product

CONCLUSION

Based on the research results, several conclusions can be drawn. First, the product innovation readiness level of Fitopure (+)-Catechin is at level 4 (Chasm), indicating the acceptance of products in the market according to customer needs. Second, the level of innovation readiness of Unca Tea products is at level 2 (Component), indicating the innovation development stage with product prototypes and intellectual property registration. Meanwhile, the scrub of Gambier product did not pass each level because it only reached 41.82% at Katsinov level 1, indicating that the fundamental scientific principles of innovation still need to be fully met.

Proposals for Fitopure (+)-Catechin products include identifying new opportunities and market expansion. For the Unca Tea product, the Company is advised to form a division of responsibilities and workload, develop a cooperation plan with partners, and design risk control for technology applications. As for the Gambier Scrub product, the Company should conduct product research and development, market research, competitor analysis, find the right business location, design a business model concept, and conduct a technology risk assessment.

Recommendations for future research include providing proposals and designing implementation strategies for the Company going forward, which can include concrete steps to improve product innovation readiness and fulfill the fundamental scientific principles of innovation.

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