Model Development of Food Types Various and Cakes Based on Local and Ecopreneurship

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Abstract: This research and development is in the form of experiments in laboratory and field, designed four years. Aims to develop Model of Various Kinds of Food/Cake Based on Local and Ecopreneurship, one of Entrepreneurship’s Leading Business Field topics a, b, c, e, j in UNM. The first year, was implemented Models Prototype Development of various types of food/cake in the laboratory. The second year, application of prototype model, development of training model for home industry, entrepreneurship teaching materials, training using prototype model of laboratory product. The third year, training development and fostering of home industry. The fourth year, evaluation meta of the results of research as comprehensively. The subjects of the research are chosen purposively five students from different regions will develop 10 kinds model of food/cake based on local and ecopreneurship. The 10 models of different food/cake are developed from local ingredients of fruits, tubers, vegetables that are abundant in season and environmentally destructive, processed into productive and marketable for people's livelihoods. Students become agents of product developers, reformers, home industry developers in the region. Data were collected with organoleptic test by panelist, document analysis, observation, questionnaire, interview, FGD, and analyzed by descriptive and qualitative. The result is 10 kinds of prototype product model that will be trained in the community for home industry and as entrepreneurial learning materials for students. The results of the research are evaluated to serve as the basis for further research design.

1. Introduction

The study entitled "Development and Models Application of types Various Food/Cake Based on Local and Ecopreneurship is a Superior Research Scheme of Higher Education Universities (PDUPT) classified as research and development (R & D) in the form of experiments in the laboratory and in the field, designed to be implemented for four years (2018-2021). The first year is the development of models, instruments, and textbooks, the second year of modeling on entrepreneurship learning courses and community empowerment training, the third year of application of the model in the development and development of home industry, and the fourth year ends with a comprehensive evaluation meta of model development and application of various models of food/cake based on local and ecopreneurship, learning and training, entrepreneurship development, home industry development, with result from laboratory tests to field research. This draft was developed from the second research strategic plan of Universitas Negeri Makassar (UNM), which is Research of Excellence in Entrepreneurship Field. These topics will be held for four years. Therefore, before conducting this research, it is necessary to test first. Why is it important? Because the eminent topic is the target of the research strategic plan of Superior UNM and has been adapted to the
Edition XI Social Research and Community Service Manual [1], which is also in line with the task of entrepreneurship course. Through this Primary Research of Higher Education (PDUPT), the writer intends to examine in particular and deeply the various models of food/cake based on local and environmental, which will be used as training materials of community empowerment, developing entrepreneurship, fostering home industry. The main objective of this research is to produce new models, theories, methods, or policies that can be used for the development of leading scholarship of entrepreneurship at UNM. This study is in accordance with the clusters of Family Welfare Education (PKK) science therefore need to involve PKK students who will be the agent of product developers and the continued application of research results to the community in the region of origin to become productive entrepreneurs based home industry. If can solve the problem of unemployment because the community does not have the science and technology and skills to manage the abundant food in their environment as a source of income to meet their life needs.

Local food is all ingredients that can be consumed originating from the local area while ecopreneurship is a combination of two words, namely ecological (ecological) and entrepreneurship (entrepreneurship). According to Schaltegger, Ecopreneurship is an entrepreneurial concept that is not only profit-oriented but cares about environmental aspects, or entrepreneurial activities involving individual and group entrepreneurial initiatives and skills to achieve business success with environmental innovation.[2]. Why do local materials and ecopreneurship need to be developed? Because Indonesia has a variety of eco-friendly business potentials which at times are very abundant but not yet developed maximally due to ignorance, such as fruits, tubers, vegetables, and other crops. The concept of ecopreneurship is one way that can improve the gap between economic and environmental interests that need to be given a touch of technology. Local materials that exist around the environment requires a touch of technology for maximum benefits and can be developed into an entrepreneurial land of various local foods based home industry. The problem is (1) how to develop models of various types of food and cake based on local and ecopreneurship for home industry, (2) how to improve product quality including better taste, color, texture, aroma, endurance, shape and formula, marketable and feasible for home industry, (3) how the prototype of product model is the most favored panelist so it is worthy to be used as training material of society. The main objective of this research is to get prototype model of food/cake based on local and ecopreneurship so that the product quality of taste, color, texture, aroma, shape, and label and packaging is preferably able to increase the selling value of the home industry to increase the productivity of community and students.

Popularizing the model development of various types food/cake local-based and ecopreneurship to cultivate environmentally-based on local food for the home industry can increase community productivity. Many of the local agricultural products that are abundant in the area have not been utilized because of the ignorance of the community to cultivate it, thus damaging the environment. This is what requires skilled hands with a touch of technology to be a useful and high-value product to increase productivity, and create new jobs. Therefore, PDUPT is considered very urgent to be implemented as an alternative problem solving caused by unproductive society as well as studying knowledge and entrepreneurship learning method according to the Superior RIP of UNM with topic: Model development of various types of food/cake based on local and ecopreneurship. Through a touch of technology, students are innovative and creative, able to develop local food products while looking at the ecosystem.

Theoretical review: Some experts have explained that ecopreneurship is very important to develop because it provides a huge advantage. Tito Pradhita explains that ecopreneurship is an entrepreneurial concept that is not only profit-oriented but also concerned with environmental aspects. There are three concepts of ecopreneurship, namely: Eco-Innovation, Eco-Opportunities, and Eco-Commitment [3]. Further explains that: The role of a key subset of sustainability entrepreneurs, ecopreneurs, defined here as those entrepreneurs who combine environmental awareness with their business activities in a drive to shift the basis of economic development towards a more environmentally friendly basis [4]. In reality, ecologically driven entrepreneurship has sustainability as a key element to motivate its basic approach’. Certainly ‘ecopreneurship is... distinguished from other forms of corporate environmental
development by the company’s vivid commitment to environmental progress and its strong desire for business growth [2]. According to Schaltegger, the term “ecopreneurship” is a combination of two words, “ecological” ("eco") and "entrepreneurship" [2]. Ecopreneurship can thus be roughly defined as “entrepreneurship through an environmental lens. Ecopreneurship is characterised by some fundamental aspects of entrepreneurial activities that are oriented less towards management systems or technical procedures and focused more on the personal initiative and skills of the entrepreneurial person or team to realise market success with environmental, innovations and oriented entrepreneurship [5,6] Entrepreneurial thinking starts first with individuals, as environmental preferences are personal concerns. Ecopreneurs show personal mastery and consider their professional life as a creative act [7]. At a very basic level, an ecopreneur is a person or entity which provides environmentally friendly services, goods, and technology such as recycling, green construction, or organic food [8]. The term “ecopreneur” is derived from two terms which are “entrepreneur” and “ecology.” An entrepreneur who undertakes innovations, finance and business in an effort to transform innovations into economic goods and who accepts the risks associated with them [8]. The word ecopreneur is a portmanteau of “ecological” and “entrepreneur.” An ecopreneur is an individual who is focused on ecologically-friendly issues and causes, attempting to do business in a way which benefits the environment. In fact, an ecopreneur is anyone who ranks environment more than or equally to profits as his most effective criteria as a business owner [9]. The main aim of an ecopreneur is to build a firm which is more sustainable and environmentally friendly. Sustainability is the balance of three spheres which are Economic, Social and Environmental.

“An entrepreneur whose business efforts are not only driven by profit, but also by a concern for the environment” [10]. The terms such as “Sustainecopreneur”, “environmental Entrepreneur” and “eco capitalist” are synonymous with ecopreneur. Ecopreneurs can utilize green issues as a competitive advantage for their enterprises on the basis of the four principles known as Natural Step principles. These principles Harper are: 1. Energy and Resource Use Efficiency and Maximization: 2. Ecosystem Services, 3. Natural step principles, 4. Eco-efficiency and eco-effectiveness [11]. For exploiting opportunities, companies can not only make profits but can also protect the environment, make it sustainable for the new generations [12]. The driving forces behind ecopreneurship are as follows: 1. Global population growth, 2. Increasing life expectancy: 3. Climate change, 4. Resource scarcity, 5. Lack of equity in the world. Ekwatari et al. said that green innovation in Bali Spa product manufacturers has a direct and significant impact on new product success. There are two dominant indicators that reflect new product success namely the new product is generated in accordance with environmental preservation and protection rules and the new product fulfills the requirements of stakeholder (consumer) [13].

Organoleptic Test: All foodstuffs studied in the laboratory, the data collected by organoleptic tests by trained panelists and consumer panelists to get the most preferred model and deserve to be developed into home industry. These materials are very abundant in time and wasted if not given a touch of technology. Laboratory data collection using organoleptic tests by panelists. According to Soekarto, organoleptic testing is a test based on the sensing process [14]. Organoleptic testing is a test method using the human senses as a primary tool for measuring the acceptability of the product, and has an important role in the application of quality. Organoleptic testing can give an indication of decay, deterioration of quality and damage of the product. In assessing the nature of the food that determines whether or not a product is accepted is its induration. The senses used in assessing the sensory properties of a product are: the visions associated with color, the sense of touch associated with the structure, the sense of smell, the smell can also be used as an indicator of the occurrence of damage of the product, the sense of taste in taste sensitivity. Therefore, there are four main components to be assessed, namely taste, color, texture and aroma. These four components will be assessed for hedonic assessment and hedonic quality. The purpose of organoleptic testing is related to product development and market expansion, quality control of raw materials, products and commodities; product improvement; comparing their own products with competitors' products; evaluation of the use of materials, formulations, and new equipment. Riwand and Stone further
explained that organoleptic are testing of foodstuffs based on likes and willingness to use a product [15,16]. Organoleptic test, sensory test, sensory test itself is a way of testing by using the human senses as the main tool for measuring the acceptability of the product. Organoleptic testing has an important role in the application of quality. Organoleptic testing may provide an indication of decay, deterioration of quality and other damage from a product called hedonic quality assessment. According to Adam, in organoleptic judgments panelists are required to make an assessment [17]. There are seven commonly used panels: (1) individual tasters, (2) small expert panel, (3) Trained panels, (4) untrained panels), (5) Panel is somewhat trained, (6) Consumer panel, (7) Children panel. Just choose where the most appropriate needs. Specifically this study used trained panelists and consumer panelists, all amounted to 20 people.

2. Research Methods

This research is a Scheme of Primary Research of Higher Education (PDUPT), in the form of development so that entering on Research and Development research type (R & D) aim to develop and apply development result of model various types of food/cake based on local and environment. The initial phase of the research is developing models variety types of food/cake based on local and ecopreneurship. Therefore, preliminary research begins with experimental trials to obtain prototype models of various foods based on local and ecopreneurship. The research model used to develop of various models of food and cake based on local is the Joke Model was developed of the Kirpatrick Model and General Model of Plomp [18,19,20]. Joke model has seven components: initial findings, development design, realization and model/prototype formation, test, validation and revision, implementation and application of model, evaluation, product dissemination. This type of research is quasi experiment. This research at PKK Laboratory for two months. The tool used is customized type of laboratory products and tools available are in the laboratory.

The material used in accordance with the food model and the cake to be produced is the local food of tubers, fruits, and vegetables namely jamblang fruit, watermelon fruit, yellow pumpkin (cucurbita moschata), cassava. These materials are everywhere and abundant in the season and the benefits are very large, because the nutritional content is high. Especially jamblang, utilizing not known of the public in Makassar so it is wasted so garbage in season.

The research design is tailored to the food/cake model to be made. The model of food/cake based on local and ecopreneurship be made are watermelon poding, watermelon juice, jamblang poding with milk topping or not, jamblang jelly or jam, jamlang sheet jelly, Goku cassava noodles, cassava tasteless bread, brownis steamed cassava, yellow pumpkin Kasippi, yellow pumpkin Pizza. There are 10 models. Involved five PKK students in the experimental process. Product data collection with organoleptic test using trained panelist and consumer as much as 20 people for hedonic rating scale and hedonic quality on flavor, color, texture and aroma of products and models. The study population was all local foodstuffs in South Sulawesi but the samples were taken purposively i.e local foods with environmental attention so that the local foodstuffs were tested by producing 10 models of food and cake based on local and ecopreneurship into prototype models of tubers, fruits, vegetables, which are abundant in time and often wasted away if not processed into a marketable food. The sampling was taken by purposive are five PKK students from different locations/districts. The unit of analysis is 10 models of various foods produced from tubers, fruits, and vegetables that are abundant in the seasons around the environment starting from preliminary findings. This is the design of the development, realized the model/ prototype, tested validated and revised, implementation and application of the model, evaluation of the results, and product dissemination. One of the product of model prototype dissemination is through seminars and published in international journals.

Research Procedure: Starting from the pre-survey for preliminary findings on materials, theoretical and prescription studies, the design of model development, the realization and the model/prototype formation, takes place two months in the laboratory. The first month of the first trial was carried out one piece of material every week, and the second month was carried out a second test of each kind of material for each week to improve the quality and quality of the model. The population of local food is
infinite but only selected food/cake which model has never existed and has not been published in Makassar and internet but have prospect of development and good potency to be produced. The test is done after the laboratory test by organoleptic test by panelist, then validated. Further revised and tested again to get the prototype of the desired model. The goal is to produce a variety product models of food/cake based on local and environment. Technique of collecting data by organoleptic test, panelist using checklist, observation, interview, document analysis, FGD and study model development. Data were processed and analyzed using descriptive analysis [21,22]. Qualitative data were analyzed by qualitative analysis [23]. The research team is fully engaged in all experimental activities. Outcome Indicator is models prototype of food various products based on local and environmental.

3. Result and Discussion
The results of the models development of various types of food/cake based on local and ecopreneurship of fruits, tubers, vegetables, there are 10 models. The 10 models of food/cake based on local and ecopreneurship are: (1) Watermelon Poding, (2) Watermelon juice, (3) Jamblang Poding, (4) Jamblang Palit Sele, (5) Sheet Jamblang Sele, (6) Yellow Pumpkin Kasippi, (7) Yellow Pumpkin Pizza, (8) Brownish Steamed Cassava, (9) Cassava Testeless Bread, (10) Cassava Goku Mie. The models are in Figure 1, 2, 3, 4, 5 and 6 as follows:

Figure 1. Watermelon Poding and Juice

Figure 2. Jamblang Poding and Jamblang Palit Sele

Figure 3. Sheet Jamblang Sele and Yellow Pumpkin Kasippi

Figure 4. Yellow Pumpkin Pizza and Brownish Steamed Cassava
Table 1. Summary of Assessment Result of Hedonic and Hedonic Quality With Scale 1-5

| Product Model          | Flavor | Color | Texture | Aroma |
|------------------------|--------|-------|---------|-------|
|                        | H      | HQ    | H       | HQ    | H     | HQ    |
| 1. Watermelon Poding   | 86%    | 88%   | 94%     | 96%   | 90%   | 94%   | 92%   | 91%   |
|                        | S      | B     | SS      | SB    | S     | B     | S     | B     |
| 2. Watermelon juice    | 91%    | 90%   | 98%     | 98%   | 96%   | 96%   | 94%   | 94%   |
|                        | SS     | SB    | SS      | SB    | SS    | SB    | SS    | SB    |
| 3. Jamblang Poding     | 93%    | 92%   | 96%     | 95%   | 95%   | 94%   | 94%   | 95%   |
|                        | SS     | SB    | SS      | SB    | SS    | SB    | SS    | SB    |
| 4. Jamblang Palit Selei| 96%    | 97%   | 98%     | 98%   | 98%   | 98%   | 98%   | 98%   |
|                        | SS     | SB    | SS      | SB    | SS    | SB    | SS    | SB    |
| 5. Sheet Jamblang Selei| 91%    | 93%   | 98%     | 98%   | 98%   | 98%   | 95%   | 96%   |
|                        | S      | B     | SS      | SB    | SS    | SB    | S     | B     |
| 6. Yellow Pumpkin Kasippi| 92%    | 95%   | 95%     | 95%   | 98%   | 97%   | 94%   | 95%   |
|                        | SS     | SB    | B       | B     | SS    | SB    | S     | B     |
| 7. Yellow Pumpkin Pizza| 94%    | 93%   | 96%     | 97%   | 97%   | 97%   | 95%   | 95%   |
|                        | SS     | SS    | SS      | SS    | SS    | SB    | SS    | SB    |
| 8. Brownis Steamed Cassava| 85%    | 83%   | 90%     | 90%   | 91%   | 90%   | 89%   | 90%   |
|                        | S      | B     | SS      | SB    | S     | B     | S     | B     |
| 9. Cassava Testless Bread| 88%    | 86%   | 86%     | 85%   | 88%   | 86%   | 85%   | 86%   |
|                        | S      | B     | S       | B     | S     | B     | S     | B     |
| 10. Cassava Goku Noodles| 97%   | 98%   | 97%     | 98%   | 96%   | 96%   | 96%   | 97%   |
|                        | SS     | SS    | SS      | SS    | SS    | SS    | SS    | SS    |

Source: Result of Analysis of Organoleptic Test Data From Panelists (2017)

3.1 Organoleptic test for hedonic assessment and hedonic quality

- Description: Hedonic Assessment (H) with scale 1-5.
  1 = Very Unlike (STS), 2 = Don’t Likes (TS), 3 = Somewhat Likes (AS), 4 = Likes (S), 5 = Very Likes (SS).
- Hedonic Quality Assessment (HQ) with scale 1-5.
1 = Very Not Good (STB), 2 = Not Good (TB), 3 = Somewhat Good (AB), 4 = Good (B), 5 = Very Good (SB).

Based on the results of data analysis, all products according to prototype model have been very favored by panelists and considered good quality for further product to be loaded in entrepreneurship textbook material and community training materials based on home industry.

4. Conclusion

According to the results of the survey in the community, food/cakes based on local and ecopreneurship of tubers, fruits, vegetables are numerous and are present in all regions of Indonesia. The benefits are enormous and the nutritional content is high but often abundant in the season and is wasted away as a result of misunderstanding due to ignorance of the community to process it into a productive material of economic value as a source of income society. The fruit of jamlang benefits are very broad but not yet known by the people of Makassar so it is still wasted so waste. The tree is very much grown in Makassar. Therefore it needs to be investigated so that people are motivated to use it. So is the cassava that is engineered into brownie steamed, noodles and tasteless or fresh bread that can be eaten with a jamblang or jelly. Noodles are made from cassava so that the community is not dependent on the flour that is still imported. Watermelons are abundant in season seeks no other alternative products are poding and watermelon juice. Pumpkin has been engineered and made Pizza and Kasippi. The author has conducted a test to make 10 prototype models of products from fruit, tubers, vegetables ie watermelon, jamblang, pumpkin, cassava. All of them are very favored by the panelists and their quality is considered good and the prospects of development are good, national scale and worthy of being subjected to entrepreneurship courses in PKK and training materials for community empowerment for the development of home industry. Students are involved to be developers, reformers and innovation agents for the community to utilizing the local food that exists in their environment as a source of productive income. The results have been achieved are 10 kinds of prototype models of various food/cake based on locally and ecopreneurship.

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