

PLANT-BASED NEW FOOD PRODUCT DEVELOPMENT: From Conception to Implementation of “Banana Blossom Jerky”

Tiffany Aileen, Gareth Currie
Program Manajemen Perhotelan, Program Studi Manajemen, Universitas Kristen Petra
Jl. Siwalankerto 121-131, Surabaya
E-mail: tiffanyaileen97@gmail.com, gareth.currie@imi-luzern.com

Abstrak: Penelitian ini bertujuan untuk mengukuhkan, meneliti, dan mengevaluasi pengembangan “*Banana Blossom Jerky*” melalui model *New Product Development (NPD)*. Penelitian sekunder mengenai target pasar lebih dahulu dilakukan untuk membantu pengembangan dan konseptualisasi produk. Penelitian utama dilakukan dengan metode kombinasi dan dianalisis dengan triangulasi data. Tujuh Milenial dari berbagai kota di Indonesia dan dua ahli *NPD* dipilih sebagai sampel oleh penulis melalui *purposive sampling*. Konsep makanan *plant-based* ini diterima oleh generasi Millennial Indonesia yang terbukti tertarik pada makanan sehat.

Kata Kunci: Jantung Pisang, Makanan *Plant-based*, Milenial, *New Product Development*.

Abstract: *This research aimed to justify, research, and evaluate the development of “Banana Blossom Jerky” through New Product Development (NPD) model. Secondary research pertains target market was first conducted to assist the development and conceptualization of the product. The primary research was conducted through mixed method and analyzed with data triangulation. Seven Millennials from different cities in Indonesia and two experts in NPD were chosen as the samples by the author through purposive sampling. The concept of this plant-based food is found to be filling the market gap for Indonesian Millennials that proven to be interested in healthy foods.*

Keywords: *Banana Blossom, Plant-based Food, Millennials, New Product Development.*

INTRODUCTION

In order to withstand the advancing food industry, we have to keep developing new products. As Fuller (2011, p.20) stated, there are two main reasons to develop new products. First, some products need to be replaced or rebranded. Second, successful new products contribute enormously to a company's continuing profit picture. The number of new products increasing dramatically every year and the same goes with the importance to understand the process of NPD especially for entrepreneurs to keep pace with the competitors and the changing marketplace.

Ottum and Moore (1997) estimated 46% of resources that the companies allocate to the project launching of new product end up either fail to hold position in market place or never make it to the market. Kazmi, *et al.* (2016) stated that in-depth understanding about the customers' need and demand is important and from there companies can propose something which is currently missing from the range of available products in the market.

According to FAIRR (2018), 'clean label' products that are ethically sourced, sustainable, and healthy, appear to have a significant increase in popularity to the customers all around the world nowadays. Mintel (2018) also stated in one of its report, *Insights into Southeast Asia* that 'customers are getting on board with the need to change for the sake of environment and health'. Both statements indicate that there is a relatively strong growth in the plant-based food market as now the customers' preferences gravitated towards "clean labels". Numerous industry commentators such as Rabobank, Forbes, Mintel, Innova Market Insights and MarketWatch named alternative proteins and flexitarian diets as the trend in food industry in 2017 and 2018 (FAIRR, 2018).

South East Asia region is poised to register the highest CAGR (Compound Annual Growth Rate) of 6.3% during the 2017-2025 period (Persistence Market Research, 2017), which makes South East Asia a potential marketplace of plant-based food that offers increased business opportunities. In 2017, 24% of Indonesian consumers planned to follow a plant-based diet (Mintel, 2018). The author believes that the number will rise in the future and plant-based food in Indonesia will be a huge and promising business concept.

As for the specification of the target market, Millennials/Generation Y the author has chosen as the potential customers. According to Hamilton (2018), 'Since 2015, Millennials are among the largest group of consumers, according to the U.S. Census Bureau. They are the generation with the most control of food trends and marketing, since they are making the most purchases among all generations'. To be specific, based on the data presented by Natural Marketing Institute (n.d., cited in Forgive, 2018) 54% of millennials consumers consider environmental factors before making a purchase. The data indicates that sustainability has become an important aspect for Millennials and the paradigm of sustainable food system is significantly expanding globally, including Indonesia.

Considering that many people, not only vegetarians but also meat-eaters, shift their diet to plant-based foods, the author wants to take this opportunity and create a new product that is healthy, practical, and affordable using banana blossom as the main ingredient. The author wants to bring the understated banana blossom, a nutritious yet unpopular ingredient, to light by processing it into plant-based jerky. The idea is to make a ready-to-go snack that is convenient and health conscious. It will be sold with appealing packaging to attract the Indonesian millennials.

LITERATURE REVIEW

New Food Product Development (NFPD)

Introducing new products in line with market demand and managing NPD process within the company have become major challenges in every industry, especially the food industry. Notably 25% of new products never make it to be launched and 45% fail to hold a strong position in the market (Crawford, 1987; Cooper, 2001, cited in Bhuiyan, 2011). According to Earle, *et al.* (2001), the NFPD has to be able to conform the point of view of customers and company as sometimes they have different perceptions of food products presented in the market.

Fuller (2011, p.60) stated that the NFPD can be divided by several phases though there is no exact agreement among the authors so far in term of arrangements, sequences or names of the phases. Furthermore, he explained that all development from idea generation up to product launch must be screened throughout the project as process to minimize the uncertainty of product success rate when the new product is launched to the desirable market. A new product always went through some stages in which it evolved from initial product concept and idea to the evaluated, developed, tested and launched on the market (Booz, Allen and Hamilton, 1982).

As for this project, literature review of NPD as well as NFPD models was done and a new model that would fit to be implemented within the certain time frame and budgetary limit was proposed.

The first one to be reviewed is the Stage-Gate model, which is proven to be effective to help famous companies to decrease product failures. Approximately 75-80% leading companies in United States implement this model to derive their new products to the market worldwide (Jaruzelki, et al., 2005, cited in Kazmi, 2016). Cooper (1990) defined stage-gate model as a sort of blueprint that has both a conceptual and operational aspects to improve the effectiveness and efficiency of new product process from idea to launch. The model consists of a series of stages and gates. The stages represent actions taken in NPD process while the gates are the quality control checkpoints where the actions will be assessed with certain criteria in which the company will decide either to continue with the project or some changes should be applied.

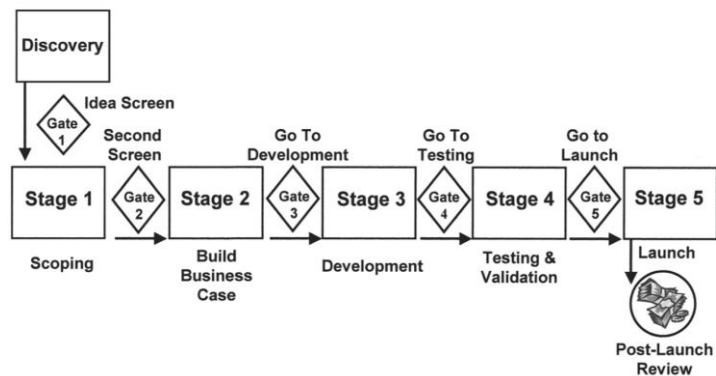


Figure 1. Stage-Gate Model (Cooper, 2009)

The next one to be reviewed is Fuller's NFPD process. This differs from Cooper's Stage-gate model, this model begins with identifying company objectives in which identification of way and means to achieve this is conducted in the first stage and the objectives precedes everything else throughout the project (Fuller, 2011, p.62). Following

next is the identification of what the market needs then idea for the new product concept is generated based on what the market is perceived to demand. After the ideas are collected, Fuller (2011, p.62) identified three parallel screening criteria namely feasibility study associated with time frame and skill available, research whether the idea is compatible with the needs of potential customers, then the last one is whether the projected financial aspect for this project is favorable to meet the company's objectives. Then the development stage begins, in which the prototypes of the product are made and tested through taste panel studies, if the prototype is accepted then the project will move on to the production stage. Then the production samples will undergo consumer trial, the positive and negative feedbacks are collected from several eligible potential customers. The next step which is test market is optional, some companies omit this phase do the launching right away. Last but not least, Fuller (2011, p.64) stated that whether the launch was disastrous or successful, both must be evaluated and the causes of it should be learnt as a guidance to the next project.

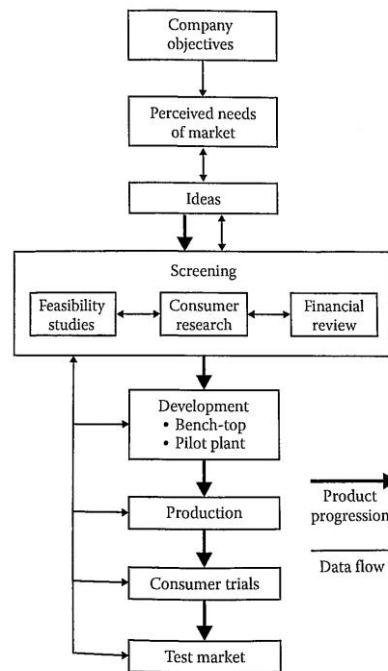


Figure 2. Fuller Model (Fuller, 2011)

Derived from the two models above, a framework that is suitable for the scope of this project was then proposed. The proposed model is simple and only focuses on pre-commercial stages.



Figure 3. The Proposed Model

First step is to make objectives of the project. This is important because according to Fuller (2011, p.62) clear objectives will be used as the core that define the track of the

project. Earle and Earle (2001) further pinpoint that through the general directions provide by the objectives will help to make the project more focused. Moving on, the second stage is called idea generation and screening. The author describes it as ideation activities in which creativity takes place to lead the conception of new product that will be offered to the customers. Kahn (2011, p.11) stated that at this phase people tend to dig as many concepts as possible and then review those ideas through the idea screening to eventually determine the most suitable option that should be developed further. There are some processes that can be used to help the idea generation process, one of them is Voice of Customers (VOC) method (Edgett and Cooper, 2008). Edgett and Cooper (2008) conducted research and found that identifying market trend is helpful to boost the idea generation. To identify the market trend for this project, the author has conducted a secondary research to find what the market exactly needs, how they view the current product lines, what are their problems and concerns so that a valuable and customer-oriented new product can be created. This stage is adopted from Cooper (1990) and Fuller (2011) NPD model, in which it is explained that after idea generation comes the idea screening and should be based on whether the new product concept can be accepted by the aimed market as well as whether the time frame, skill, and budget for this project is suitable.

Next one is development stage. In this stage, the author will conduct several trials and make adjustment to the standard recipe as well as production process with the feedbacks from some potential customers through internal and informal testing. The focus will be developing the value and features that are favorable for the customers and their needs. Just like the development stages in Fuller (2011) and Cooper (1990) model, in this stage the author will make several prototypes and assess them. The outcome expected from this stage are product and process that can be well-defined by customers, the characteristic and competitive advantages of the product must be clearly shown (Earle and Earle, 2001).

After having the final prototype of product, the author entered the tasting and validating stage. It is a very crucial part of NPD process. To be exact, avoiding this stage very often result in a failed product launch (Soni and Cohen, 2000). One of the way to conduct this research is through focus group that will be attended by potential targeted customers. Some deficiencies that the product may have that is left unnoticed when development stage occurred will be taken care of before the launching of the product. Here the author will do further assessment whether the new product is acceptable for launching or some changes need to be applied before launching through focus group discussion and questionnaires. Some determinants that need to be assessed to match the preferences of target market beside sensory evaluation (appearance, texture, taste, smell) namely design of packaging, size of packaging, and price (Earle and Earle, 2001, p. 214, p.219). The worst case if the targeted market think that the new product is not acceptable to be launched, the author then has to propose action plan for the continuation of the product.

In order to improve the product to be feasible enough for the aimed marketplace, the author made the last stage of this project to get recommendations for further improvements. Because of the limited time frame and budget as well as the proposed launching place is far in Indonesia, the author will only proceed up to this stage (not until commercialization). As product commercialization needs to be effective in launching the optimum product and efficient in controlling costs and time (Earle and Earle, 2001), proper preparation should be made meticulously beforehand. Thorough evaluation of this

project will be made and the author will reflect on what went wrong and what went right. Thus, the recommendations will be obtained and used for the continuation of this project later on in Indonesia.

Market Trend and Target Market

The author conducts the secondary research of market trends prior to determining the new product idea since it can help to identify customers and their needs (customers profiling) and obtain data of their buying habits (Fuller, 2011, p.69). Taking to account that customer have a strong catalyst in company’s product development, input from customers should be turned into the base of innovation project in which will lead to successful NPD.

Plant-based foods have established their place in public’s eyes, thus, acceptance is already present in the meantime (Fuller, 2011, p.95). It has been a major trend all around the world in all generations for these past few years, even for the meat-eaters. A report by ACOSTA (2018) informs that 71% percent of consumers who buy plant-based food are meat-eaters, and most of the customers are millennials. Thus, the market for plant-based food is not only limited to vegetarian millennials. Furthermore, the research expose that 81% millennials feel that protein content is extremely influential when making grocery store purchases and the author takes these information into account when the idea of new product is generated.

According to research by Nielsen (2015), Indonesia is a country with 60% of the customers earn less than US\$5,000 a year and the people demand for ‘affordable indulgence’ product that is also convenience, healthy and time-saving at the same time. The author see that the variety of affordable healthy food is rather limited in Indonesia and take this as an opportunity to come up with an ideal product, which is an affordable, healthy, environmental-friendly and time-saving food, for the aimed market.

The Product

As a tropical country, Indonesia has a lot varieties of crops that are mainly distributed for local consumption as well as export to International market. One of the biggest production volume crops in Indonesia is banana. Banana is commercially known for its fruits, but in some Asian countries such as Malaysia, Sri Lanka, Philippines, and Indonesia, a part of banana called banana flower is also consumed as vegetables (Liyanage, *et al.*, 2016). Several researches regarding banana blossom have been conducted and the result indicate that banana blossom is full of nutritional value. It contains high quality protein, high dietary fiber and minerals such as magnesium, iron and copper (Sheng, 2010). In addition, Singh (2017) even stated that banana blossom has a lot of potential to be called superfood due to its excellent nutritional content.

Table 1. Nutritional Facts of Banana Blossom per 100g (Singh, 2017)

Calories - 51 Kcal	Phosphorus - 73.3 mg
Protein - 1.6 g	Iron - 56.4 mg
Fat - 0.6 g	Copper - 13 mg
Carbohydrates - 9.9 g	Potassium - 553.3 mg
Fibre - 57 g	Magnesium - 48.7 mg
Calcium - 56 mg	Vitamin E - 1.07 mg

Singh (2017) further mentioned that beside having high quality protein, fiber,

minerals, and vitamins, banana blossom is proven to have great therapeutic value (namely lowers menstrual bleeding, facilitates lactation, helps in overcoming diabetes, anemia and ulcer, reduces anxiety, helpful in weight loss and good for gastrointestinal health). Besides, it is also said that many studies have suggested that antioxidant rich dietary fiber from banana can help to bring positive effect on cardiovascular disease risk factor (Linayage, 2016). Despite being a superfood, banana blossom is still underrated in many countries and menu developed from banana blossom is limited due to lack of knowledge of its preparation (Salvador, 2012). Because of that, banana blossom is often merely seen as waste from banana tree and sold for low price in many countries including Indonesia. The utilization of this super food in food industry can be seen as opportunity to enrich the variety of plant-based food that will provide additional benefit in minimizing banana waste especially in Indonesia, where the varieties of affordable plant-based food are rather limited compared to Europe. The author then proposes banana blossom jerky as new product in form of snack that appeals to market demand of plant-based food. The value within the new product will be focused on its health benefits, environmental-friendly, low cost, as well as using local source of ingredients that will stimulate local economy.

METHODOLOGY

Concurrent mixed-method through focus group discussion and questionnaire was adopted for this project. Qualitative and quantitative data collection were conducted separately within a single phase then eventually, the result was assessed from both standpoints (Saunders, *et al.*, 2016, p.170). The author believes that by utilizing both approaches in tandem, more elaborate analysis can be created as richer data can be obtained with this method (ibid. 2016). Triangulation method was implemented after data collection process in order to boost its validity (Saunders, *et al.*, 2016, p.207). Triangulation method, in which two independent data sources are collected with different methods being used and compared to one another, admitted as an effective way in reducing bias, measurement error and uncover contradictions (Bibby, 1981; Fielding, 2012; Johnson, *et al.*, 2007).

SAMPLING

A sample is defined as ‘a sub-set of a larger grouping, a population’ that can be ‘a legitimate basis for drawing inferences about the population from which they are drawn’ (Riley, *et al.*, 2000, p.75). The technique used in this research is purposeful sampling in which the samples were not chosen randomly. It is less costly, time-saving and usually used for particularly small samples (Saunders, *et al.*, 2016, p.301). By using purposeful sampling, it is required to identify the target population that is related or experienced in the topic (Palinkas, *et al.*, 2013). The author applied quota sampling as one of purposeful sampling form where the proportion of sample varieties is specified beforehand (Riley, *et al.*, p.85). From total of nine participants, seven among them represent the target market and the other two are knowledgeable individuals added to escalate the significance of findings. The seven millennials who came from different cities in Indonesia were chosen to represent the target customer as they have keen knowledge about aimed marketplace to give the author comprehensive insight of market perception regarding Banana Blossom Jerky. The two experts were added because they perceive more knowledge and can provide proficient recommendations in a more professional view.

PRIMARY RESEARCH FINDINGS

Demographics

From total of nine participants, five were female and the rest four participants were male. This demographic indicates that the selection process was done carefully so that a fair tasting process could take place amongst differing individuals. Based on deliberate examination of the focus group result, the overall feedbacks for the product given by participants were generally positive. Although the participants were all non-vegan, the thing that attracted them the most was the healthy aspect of banana blossom jerky. Following that, time-saving came second, sustainable came third, and the last one was the taste. The result from focus group discussion also correlated favorably with that. This substantiates the report made by ACOSTA (2018) and Nielsen (2015) presented in literature review about how millennials meat-eaters tend to buy healthy plant based foods that are convenience at the same time. Thus, the concept of the product is proven to be eligible to the aimed marketplace.

Sensory Evaluation

In response to questions regarding the flavor of banana blossom jerky, there were mixed result varying from average, good, to very good with the percentage of 30%. Although the responses vary, the flavor of product still acceptable as almost half (44.4%) of participants chose it as the most favorite aspect of the product (Figure 4). Recommendations regarding flavor from both discussion and questionnaire were mostly in accordance, some participants pinpointed about the reduction of garlic and suggested to add another variety of flavors, preferably sweet and spicy

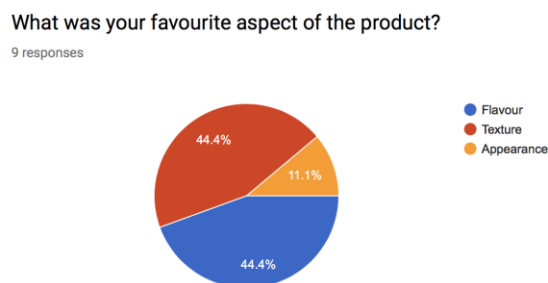


Figure 4. Favourite Aspect of the product

Following flavor, the texture of the jerky was also assessed. Despite the suggestion to remove the fibers, two-third of the participants rated the texture as pleasant and this aspect was chosen as the most favorite aspect of the product alongside flavor with 44.4% respectively (Figure 4). The thickness of jerky was said to be suitable in the discussion. The third one assessed was appearance. It was rated attractive by 44.4% of participants, very attractive by 22.2%, average by 22.2% and only 1 participant rated the appearance as very unattractive. Despite the fact that it was rated rather positively, it was chosen as the least favorite aspect of the product by half of the participants. Further recommendation regarding the appearance was pointed toward suggestion to add glaze so that the jerky would be more appealing to the target market. Some participants also mentioned that instead of square shape, rectangular/stripe would be more favored.

Packaging, Portion Size and Price

Referring to opinion stated by Earle and Earle (2001, p.214), packaging, portion size, and price should be taken to account beside the sensory evaluation. Packaging can be considered tool to differentiate our brand from competitors, as well as the trigger that influence purchase decision of customers (Wells, *et al.* 2007). Therefore, knowing the preferences of customers regarding packaging is needed. The result shows that 77.8% of participants prefer the packaging with zip. To boost the sustainable aspect of this product, the author will use eco-friendly packaging that is biodegradable. Packaging will be designed attractively along with nutritional value of the product will be also attached later on. As there were several suggestions to change the brand name, the author proposed a new brand name which is “Meat-Out: Vegan Jerky” alongside the design of the brand.

Portion size and price are correlated significantly, because price implies the value for money of a product in which portion size is associated (Sagala, *et al.*, 2014). As for the portion size of one package, half of the participants chose 250g as the most appropriate size whereas 25g (55.6%) was the most preferred individual size. Nearly all participants (88.9%) willing to pay Rp 15,000 – Rp 22,500 (CHF 1 – CHF 1.5) per 25g, so the range for one portion will be Rp 150,000 – Rp 225,000 (CHF 10 – CHF 15). The price range is considered quite high in Indonesia, especially for snack category. This finding substantiates previous finding by Nielsen (2015) about millennials that willing to pay extra money for sustainable healthy foods.

Overall Impression of Product

Although one of participant deemed that the overall impression was poor, the majority of participants (44.4%) considered the product as satisfactory and 33.3% of them even rated banana blossom jerky as very satisfactory. The concept of this product was praised as the product deemed to meet the healthy food demand of Indonesian millennials and on top of that, the product was made from banana blossom which is still uncommon ingredients to be produced as snacks up until now. Despite the fact that there were some critics regarding flavor, texture and appearance of the product, almost half of participants still will highly recommend this product to friend or colleague to try by giving 10 out of 10 score. Uniqueness and acceptability of this product was proved as from five responses, two of the stated they never tried something like this and the other three compared this product to Bee Cheng Hiang, a well-known brand in Asia which sells beef jerky and pork jerky. It is an honor to be compared with Bee Cheng Hiang, as it is classified as one of high class snacks with rather high price in Indonesia. Furthermore, 40% of participants even thought that banana blossom jerky is better in term of taste and 40% thought the quality is about the same. These responses exceeded the author’s expectations.

Please rank the following in terms of what attracts you most in this product! (1= most attractive, 4= least attractive)

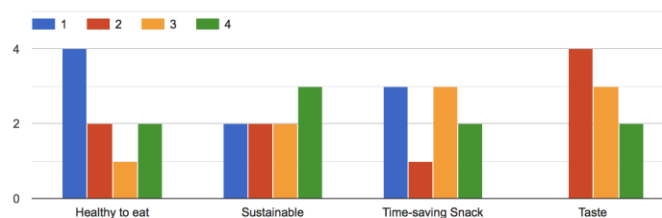


Figure 5. Attractive Aspects to Customers

Interestingly, the taste of product which was evaluated positively is not what attracts the customers the most to buy this product, but the fact that they can find healthy aspect through this product. This emphasizes that the millennials take health aspects to consideration when they buy food products.

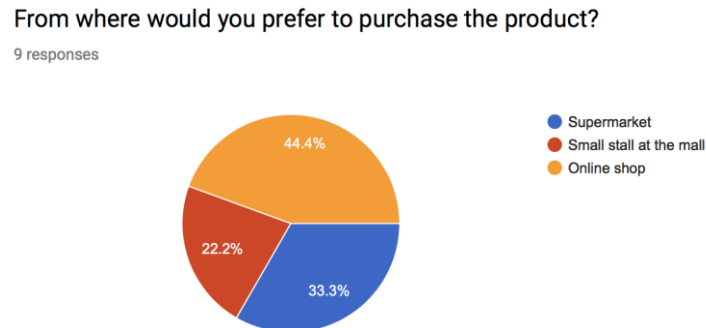


Figure 6. Preferable Purchase Location

As for the purchase location, the responses vary but the majority of participants tend to get the product from online shop. However, in the future, it is possible for author to expand to supermarket or stand at the mall if the business is running well.

Feedback Responses and Product Adjustments

In response to feedbacks received through the primary research, the updated standard recipe has been made by the author with several changes pinpointed the most by participants. First, the author reduces the garlic and boil it instead of stir-fry. It is intended to remove the strong flavor of garlic and to prevent the bitterness caused by overcooking the garlic. Following that, the fibers from banana blossom will be carefully removed before processed as it makes the texture unpleasant. Then, in order to improve the appearance without removing the healthy aspect of the product, honey glaze will be added. The author also would like to try sun drying technique in Indonesia, which is known to be one of the oldest methods of preserving food (Nam, et al., 2016). Although it is time-consuming, the nutrients inside the ingredients will remain unchanged throughout the drying process (Heinz and Hautzinger, 2007, cited in Nam, *et al.*, 2016).

REVIEW ON NFPD PROCESS

Concept Development

The conception of product was already conducted in the idea generation and screening stage, which is the second stage in the proposed NPD model for this project. Banana blossom jerky which is a plant-based food was found to be suitable to the initial research regarding market trend conducted in literature review. The proposed concept was presumed suitable and feasible for the aimed marketplace. Whereas in fact, the author encountered a lot of challenges regarding production and standardization of the product in the midst of development stage, making the process proved to be more challenging than expected. Two major constraints that were encountered regarding the product were about drying methods to find the right texture and balancing the flavor. The adjustments made in standard recipes in order to meet the desired product quality indicate that the development stage in NFPD gone through 'trial and error' process. Despite having things planned theoretically beforehand, some challenges still interfering along the way. The

author had to go through learning process with the evaluation and reflection throughout the project and made amends for the weaknesses found as things did not always go as planned.

Challenges in Development Stage

The biggest challenges beside going through trial and error to find the proper standard recipe were about the material flow and communication issues among individuals regarding inventory. Before purchasing materials, suppliers should be assessed (Ojugo, 2010, p.55). The author did some survey in Luzern regarding supplier of banana blossom and checked its availability. It was said to be available most of the time but could not guarantee that it would be available every day. Because of the limited resources, waste and inefficiency were tried to be eliminated with the help of research on how to prepare banana blossom correctly. However, in the future such constrain will not be encountered in Indonesia as the banana blossom is always available in tropical countries.

Beside material flow, there was communication problem among the people who used the shared kitchen with the author at the first trial. Although the author asked for permission and informed people to keep the hotbox and dehydrator on, sometimes they turned it off accidentally. The jerky put inside the hotbox was even thrown away. Thus, it made the author could not really estimate the time needed for drying the jerky at the first trial. In order to prevent such things to happen at the second and third trial as well as for the focus group, the author checked the jerky regularly (every one or two hours) and put a clear label with “do not throw” sign

SECONDARY RESEARCH REVIEW

NFPD Theory

The proposed model for NFPD used in this project is simple and suitable for the scope of this project. However, if this product will be commercialized in the future, new model should be proposed as the current one focus on pre-commercialization only. Creativity, innovation and entrepreneurship was discussed and proved to play crucial role in the success of NPD process especially the idea generation process. Nevertheless, in author’s opinion, creativity should be accompanied by in depth research of customer preferences and demand. Individual creativity takes part when what customers desired has been identified. There were quite a lot information regarding Asia, but not for Indonesian millennials specifically. Pre-market survey should have been done to dig more about the aimed marketplace. Research on consumer culture theory could also be added to strengthen the literature review as it could help to provided broader knowledge of consumer psychology. It could have assisted in designing primary research methods, thereby providing detailed and strategic information on Indonesian millennials.

Regarding the proposed model, the author suggests that the development and trial process should be cyclic. Those should be conducted more than one time so that the product could be reviewed meticulously to ensure that it is market-ready.

Methodology

There are some limitations faced in throughout this project namely time and budgetary limit. NPD process commonly conducted minimum one year or over (Bhatt and Ved, 2013) while the author had only five months to complete this project. Developing new product within short time frame definitely pressured the author. Time

management played a big part in this project and the author tried to improve that every day while doing this project. Moreover, the time constrain and budgetary limit made a larger scale of market research or taste testing unfavorable to be conducted. Hence, the product is not currently market ready in author's opinion.

Regarding secondary research conducted, the information available about Indonesian millennials were limited. If only online pre-survey was conducted, the author would have made more sophisticated analysis comparing the information got from market and the primary data collected as well as necessary information of Indonesian millennials.

The primary research conducted to add more weigh to the secondary data found also had some limitations. First, focus group was conducted only once and with limited choice of samples. Vegan Indonesian millennials should have been included in the focus group alongside the non-vegan as they can broaden the recommendation regarding products and enabled the author to make more concrete and reliable analysis. Had there been more time, one more focus group involving chefs and food experts might give more profound findings and recommendations especially regarding sensory attributes of the product would have been conducted. Another flaw was with the questionnaire, that could not facilitate the participants to express their feelings and opinions in detail as not many open-ended questions included. Despite that, the focus group was done systematically well and the participants were active to voice their opinions. The findings from focus group compensate the gap of findings in the questionnaires.

The author personally believes although the product still needs to go through some adjustments and test to be commercialized, the aim and the general objectives of this project have been met. This project challenged the author in many ways, yet gave the author a lot of lesson to be learned especially in doing research and reviewing the data obtained critically. This learning journey was considered impactful milestone on the author as it helped the author to challenge creative limits. Looking back to when it all started, the outcome of this product was uncertain. However, reviewing feedbacks and findings exceed the author's expectation because the concept was positively accepted by the target customers. On top of that, it can be a great business opportunity for author as the target market willing to pay good sum of money for this product. Realizing that Banana Blossom Jerky can actually be commercialized in Indonesia strengthened the author's assurance in developing the product henceforth.

CONCLUSION

To sum up, the development of Banana Blossom Jerky which was being rebrand to "Meat-Out: Vegan Jerky" was deemed success as the outcome met the initial product concept. Critical literature review pertains to NPD theory resulted in a model used to assist the development of the new product from conception to actualization. The secondary research was backed up by primary research conducted through mixed-methods to identify the acceptability and marketability of the product. Realistic and reliable results were obtained from choosing the sampling participants that could escalated the findings in this study. Feedbacks gathered from primary research exposed some deficiencies of the product that led the author to do some minor amendments to the standard recipe. In hope, it can optimize the product to be market-ready and have competitive advantage. Evaluation and reflection of the whole process enable the author to have a valuable vision into how to conduct successful NFPD process henceforth.

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