



Research Article

“THE MARKETING VIABILITY OF AN IMPROVE NATIVE RICE CAKE DELICACY PRODUCT IN IFUGAO”

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ABSTRACT

This experimental study is focused in the evaluation of the marketing viability of an improve Ifugao native rice cake delicacy known as “Benakle”. It seeks to evaluate the acceptability of its appearance, smell/aroma, taste, texture and shelf life span using two test. The experiment consists of six treatments using two types of flavors the natural and artificial flavors in the process. Interview, observation and questionnaires were randomly distributed to the evaluators to assess the potentials of the products. Using the mean to evaluate each of the treatments overall acceptability and marketability the study arrived at these findings. The f-test was also used to test the difference of the two test administered. It reveals that there is a high level of acceptability and high level marketing potential of the improved and flavored rice cake delicacy (benakle). However, the “ube” flavor obtains the highest acceptability and marketability rating. It also concludes that there is no significant difference between the two tests administered.

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INTRODUCTION

Population in Ifugao is increasing and the demand of food consumption is increasing. Because of the increase of food consumption, manufacturing firms are making ways to supply and produce goods and services to satisfy and meet the needs of the consumers. They produce alternative food supplements; instant products are almost available in the market at any time, at any place. Consumer behaviors of food products divert because of many factors, some of these factors are technology, environmental changes and cultural diversity. People love new produced products and tends to disregard their own products due to less innovativeness of discovering new processing of food products produced by local producers. In the province of Ifugao, about 69% of the labour force is involved in agriculture. Most of it is the cultivation of the Rice terraces that produce a variety of crop known as the Heirloom rice. Rice produced by the terraced paddies can only feed a regular family for a little over five months. Thus, people should look or venture to other source of living such as industry based production of commercialized products as an alternative in increasing economic status of the family. Because of inflation, commercial goods are increasing that will affect the daily expenses of household in the province.

Some of the farmers have divert their paddies into the cultivation of fruits and vegetables while others are involved in industry of manufacturing and selling of handicrafts, constructions and quarrying. Some of the income generating products of Ifugao comes from the manufacturing of gifts, toys and house ware, inclusive of woodcarving, basketry novelties and fashioned accessories. Other industries are in the manufacturing of furniture's, concrete hollow blocks, blacksmith, and garments. According to the Impact of rice terraces in the Philippines the average daily income from tourism in 2007 accommodation is the highest income generating which generates a daily income amounting to P650, followed by the food and beverages amounting to P482. This data shows that food is one of the daily necessities of tourist and other stakeholders of the province.

The province should develop and finance the production of well improved and package commercialized products to attract potential tourist consumers both local and international. It will be a means of helping and improving the income of each household by engaging in the production of the improvement of products. According to the Ifugao Socio-economic Profile (2003) only 10% investors are engaged in manufacturing and 32% are in trading. It reflects that there is a low involvement of investor in the manufacturing of native products that is not sufficient to meet the demand of the food industry in the market.

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One identified native rice cake delicacy product of Ifugao is the “Benakle” as it was called in the native tuwali language and “Pinang-et” for the eastern Ayangan part of the province. Benakle is a product made up of heirloom rice (tinnawon rice) cooked and wrapped in banana leaves. The products are cooked in flavors in different ways, some of this products are cooked using the different varieties of tinnawon rice (Heirloom rice) However the characteristics of these products varies in the production, taste, package, texture, sizes in the different towns of Ifugao. Thus, to increase the consumption of local products (GNP) especially the proper utilization of agricultural products to sustain the economic status of farmers of ifugao, innovation of new product features and its packaged should be established, and feasibility studies and marketing researches should be undertaken. Thus, this study.

Conceptual Framework of the Study

The figure below shows the relationship of the variable

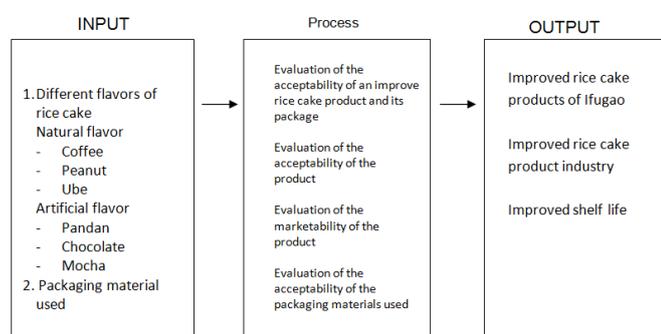


Figure 1. Conceptual model showing the relationship of the variables

Constitutes the different flavors used in the production of rice cake known as “benakle” there are 2 types of flavor used the artificial flavor which constitutes the following powdered flavors such as pandan, chocolate, and mocha. The 2nd type of flavor is the natural flavor which is a natural flavor mixed in the rice cake delicacy such as grind natural coffee which is the Arabica and robusta variety commonly grown in the province. Peanut and ube (*Colocasia esculenta*) is also included in the natural flavor in as much that this are used naturally in the production of rice cake known as “benakle”. The different leaves used as package in the production of rice cake is also included such as banana leaves kallawag leaves and rattan leaves.

The process includes the evaluation of the acceptability of the different flavors used in the production of rice cake in terms of its appearance, taste, aroma, texture and its shelf life. The evaluation of the leaves used is also included in the process. To determine the acceptability and marketability of the improved product the Likert scale will be used to evaluate the most acceptable and marketable product. The overall acceptability of the product will include the overall assessment of its appearance, texture, taste, smell and aroma. The results gathered are envisioned to provide the data and information in the development and improvement of a rice cake delicacy product in Ifugao. Further, after the evaluation of the overall product outputs in terms of the different flavor used and the leaves used to assess its packaging acceptability the researcher will analyze the following process to determine the best treatment that will result to the following output.

An improve rice cake delicacy product in Ifugao that will improve the rice cake delicacy industry in terms of its salability and high return on investment (ROI).

Objectives

The study generally aims to assess the marketing viability of an improve Ifugao native rice cake delicacy (Benakle); its specific objective includes the following:

- To determine and rank the most preferred treatment of the improve flavored native rice cake delicacy in terms of its;
 - Appearance
 - Smell/ aroma
 - Taste
 - Texture
 - Shelf life
- To evaluate the acceptability of the treatments in two test in terms of the following:
 - Appearance
 - Smell/ aroma
 - Taste
 - Texture
 - Shelf life
- To evaluate and test the significant difference of the two test.
- To determine and rank the overall acceptability of an improve and flavored native rice cake delicacy?
- To determine the extent of marketability of the improved rice cake delicacy product?

Significance of the Study

The study would like to determine the extent of acceptability and marketability of an improved sweet potato. This study is therefore deemed significant to the following:

Local Government Units. The study will serve as a basis in the formulation and developing proposals in providing assistance to the household, investors and entrepreneurs of the product. Entrepreneurs/farmers. A more efficient and more innovative features of product will be incorporated to outperform competition thus providing greater opportunities for an increase in the profit of commercializing new product features of the native product of Ifugao. Consumers. The innovation of such product will strengthen the development of more indigenous product improvement that will increase the demand of local based products available in the market at the right time and at the right place. Researcher. He could utilize the knowledge he gained from this study vis-a-vis his being part of the academe in order to help assist his community economically.

MATERIALS AND METHODS

Research Method

It is the objective of this study to evaluate and assess the characteristics and classification of the Benakle products of Ifugao.

Experimental research design is used in this research since its goal is to determine and evaluate an improved product, its package and label. On the other hand, descriptive research was used in this research to analyze the acceptability and marketability of the products. Gay and Sevilla (1998) defined descriptive research as involves the collection of data in order to test a hypothesis or to answer questions concerning the current status of the subject of the study. While, experimental research is an experiment where the researchers manipulates one variable, and control/randomizes the rest of the variables. It has a control group, the subjects have been randomly assigned between the groups, and the researcher only tests one effect at a time. It is also important to know what variable(s) you want to test and measure. It is also described as a collection of research designs which use manipulation and controlled testing to understand causal processes. These methods and designs were used to develop, test and evaluate the acceptability and marketability of an improve benakle product of Ifugaos.

Locale of the Study

The experimentation of an improve benakle products will be at Ifugao State University Lagawe Campus, lagawe, ifugaobecause of the instruments and facilities to be used in the conduct of the experiment. The trial will be administered and tested randomly within the different stakeholders in the locality of Lagawe.

Research Instruments

The data will be gathered by means of a triangulation method of gathering data wherein the researcher administers interview, observation and structured questionnaire patterned from several models and from the intensive reading of the researcher. The Interview and observation is used as an instrument to gather data in order to validate the data gathered from the questionnaires.

Procedure

The process of making an improved Ifugao rice cake delicacy known as "benakle" comprises the following procedures, weighing of the heirloom rice known for its scientific name as *Oryza Sativa* specially the javanica variety, soaking the heirloom rice for 3 to 4 hours, grinding of the soaked heirloom rice, mixing the coconut milk and the ground heirloom rice, piling, cutting and pounding of the different flavors ready to be used as secondary ingredients such as coffee, pandan and, peanut, mixing the flavors to the heirloom rice mixture, mixing the sugar (sucrose) to the heirloom rice mixture that will serve as sweetener to the heirloom rice mixture, wilting and preparing the 1/1 foot banana leaves for wrapping, wrapping the heirloom rice mixture with the wilted/ prepared 1/1 foot banana leaves, steaming the wrapped heirloom rice mixture for 30-60 minutes and, cooling of the steamed heirloom rice.

Data Gathering Procedure

To arrive at a specific and systematic flow of the procedure of gathering data and information the researcher will prepare the products in 6 treatments according to the variety of the product and the process. After the preparation of the products it will be tested and assessed by the respondents for further evaluation of

the overall package product. He will personally conduct together with his research aide the administration of the instrument to ensure speedy and significant return. In terms of language barriers that the respondents will encounter in providing the correct data the researcher would interpret the question in his/her native dialects.

Statistical Treatment

As soon as the adequate data are gathered, the researcher will tabulate, analyze and interpret them. In order for the researcher to give full meaning of the data to be gathered, the following statistical treatments will be used:

In determining the overall acceptability and the assessment of the factors of low marketing viability of the improved benakle product, the four point Likert scale is used in scoring the data. The legend of which is:

Points	Scale	Descriptive Value
4	3.50- 4.00	very acceptable
3	2.50-3.49	Acceptable
2	1.50-2.49	49
1	1.00-1.49	not at all

In the evaluation of the product likability and its marketability in terms of its appearance, aroma, taste, packaging and texture the rating scale is as follows:

6.50 – 7.00 like very much	Very high.
5.50 – 6.49 like moderately	Moderately high level of marketability.
4.50 – 5.49 like slightly	High level
3.50 – 4.49 Neither like nor dislike	Fair.
2.50 – 3.49 dislike slightly	Slightly fair possibility
1.50 – 2.49 dislike moderately	Poor marketability
1.00 – 1.49 dislike very much	No possibility of the product to be marketed.

Weighted Mean and Ranking. This will be used to treat the data evaluation of the products. The formula is as follows:

$$\text{Formula: } W = \frac{\sum fx}{N}$$

Where:

W= Weighted Mean

fx = Weight given to the respondents

N = total number of respondents

RESULTS AND DISCUSSION

The study is intended to analyze and evaluate the acceptability of a flavored rice cake delicacy. In order to verify on the result, producers, entrepreneurs, consumers of the rice cake delicacy known as "benakle" were the respondents and were randomly chosen to evaluate the product using a structured questionnaire, interview and observation.

Appearance: The finding or result of the study based from the respondents' evaluation is revealed on the tables below.

The table reflects that flavored rice cake delicacy is like moderately by the respondents with an overall mean of 6.1983. The procedure was done in 2 trials to test the sustainability of its rating. It further reflects that the rice cake flavored with "pandan" obtained the highest mean sustaining its rating with 6.58 mean followed by the natural flavor rice cake "ube" with a mean of 6.555.

Table 1. Mean evaluation of the respondents on the acceptability of an improved rice cake delicacy known as “benakle” in terms of its appearance

TREATMENTS	Mean			Combined Description
	Trial1	Trial 2	Weighted Mean	
1. Benakle flavored w/ coffee	5.45	6.1	5.7750	Like moderately
2. Benakle flavored w/ peanut	6.15	5.95	6.0500	Like moderately
3. Benakle flavored w/ ube	6.55	6.61	6.555	Like very much
4. Benakle flavored w/ chocolate	6.35	6	6.1750	Like moderately
5. Benakle flavored w/ pandan	6.52	6.64	6.58	Like very much
6. Benakle flavored w/ mocha	6.55	5.8	6.0650	Like moderately
GRAND MEAN			6.1983	Like moderately

Table 2. Mean evaluation of the respondents on the acceptability of an improved rice cake delicacy known as “benakle” in terms of its aroma

TREATMENTS	Mean			Combined Description
	Trial1	Trial 2	Weighted Mean	
1. Benakle flavored w/ coffee	5.8	5.64	5.720	Like moderately
2. Benakle flavored w/ peanut	6.95	5.9	6.4250	Like moderately
3. Benakle flavored w/ ube	6.2	6.15	6.1750	Like moderately
4. Benakle flavored w/ chocolate	5.98	6.15	6.065	Like moderately
5. Benakle flavored w/ pandan	6.85	6.1	6.4750	Like moderately
6. Benakle flavored w/ mocha	6.6	6.35	6.4750	Like moderately
GRAND MEAN			6.218	Like moderately

However, the rice cake flavored with mocha obtains 6.55 during the first test but did not sustain its rating that concluded to a total mean of 6.0650 which is described as moderately liked.

It further concludes that a rice cake delicacy flavored with either natural or artificial flavors has no variation of obtaining high or low ratings in terms of its appearance. Thus, a rice cake delicacy that is acceptable and liked by the respondents in terms of its appearance is the rice cake delicacy that is shinny and oily type regardless of its flavor.

Aroma: The finding or result of the study based from the respondents' evaluation is revealed on the tables below:

The finding shows that the aroma of the flavored rice cake delicacy product is moderately liked with a total mean of 6.218. It means that the product smells good and it also shows that the aroma of the product is one of the factors that affect the respondent's in accepting the product. However, the rice cake flavored with coffee has the lowest average mean rating of 5.72 which means like moderately.

The coffee flavor has a strong coffee aroma that can be disliked by the respondents especially the finished and cooked product. It further reflects that the peanut and pandan flavor obtains the highest mean with 6.95 and 6.85 respectively which is interpreted as very much liked during the first test however the mean fluctuates during the second test. One of the reasons why the rating of the two flavors fluctuates in terms of its rating is because the flavor content is reduced to moderate the bad and strong aroma of the other treatments thus, this actions affects the overall rating of all the treatments. It is further concluded that the aroma of peanut and pandan is highly acceptable in the production of rice cake delicacy products.

Taste. The finding or result of the study based from the respondents' evaluation is revealed on the tables below:

In evaluating the acceptability of the flavored rice cake delicacy in terms of its taste the following data were revealed. It reflects that all the treatments obtain a higher rating during the second test than the first test.

Table 3. Mean evaluation of the respondents on the acceptability of an improve rice cake delicacy known as “benakle” in terms of its taste

TREATMENTS	Mean			Combined Description
	Trial1	Trial 2	Weighted Mean	
1. Benakle flavored w/ coffee	5.85	5.88	5.865	Like moderately
2. Benakle flavored w/ peanut	6.43	6.64	6.535	Like very much
3. Benakle flavored w/ ube	6.55	6.81	6.680	Like very much
4. Benakle flavored w/ chocolate	6.4	6.45	6.4250	Like moderately
5. Benakle flavored w/ pandan	6.41	6.55	6.4800	Like moderately
6. Benakle flavored w/ mocha	6.45	6.52	6.485	Like moderately
GRAND MEAN			6.4141	Like moderately

Table 4. Mean evaluation of the respondents on the acceptability of an improved rice cake known as in terms of its texture

TREATMENTS	Mean			Combined Description
	Trial1	Trial 2	Weighted Mean	
1. Benakle flavored w/ coffee	6.25	6.55	6.4000	Like moderately
2. Benakle flavored w/ peanut	6.25	6.3	6.2750	Like moderately
3. Benakle flavored w/ ube	6.75	6.20	6.475	Like moderately
4. Benakle flavored w/ pandan	6.75	6.1	6.4250	Like moderately
5. Benakle flavored w/ chocolate	6.45	6.15	6.3000	Like moderately
6. Benakle flavored w/ mocha	6.35	6.45	6.400	Like moderately
GRAND MEAN			6.3792	Like moderately

Table 5. The overall acceptability of an improved rice cake known as “benakle”

TREATMENTS	Mean		Combined	
	Trial 1	Trial 2	Weighted Mean	Description
1. Benakle flavored w/ coffee	2.16	2.48	2.32	Least acceptable
2. Benakle flavored w/ peanut	2.56	2.87	2.71	Moderately
3. Benakle flavored w/ ube	3.79	3.58	3.68	Very acceptable
4. Benakle flavored w/ pandan	3.58	3.46	3.52	Very acceptable
5. Benakle flavored w/ chocolate	2.96	3.23	3.09	Moderately
6. Benakle flavored w/ mocha	3.19	3.34	3.27	Moderately
GRAND MEAN			3.10	Moderately

Table 6. The evaluation of the perceived marketability of an improved rice cake known as “benakle”

TREATMENTS	Mean		Combined	
	Trial 1	Trial 2	Weighted Mean	Description
1. Benakle flavored w/ coffee	2.35	3.15	2.75	Moderately high
2. Benakle flavored w/ peanut	2.89	3.02	2.95	Moderately high
3. Benakle flavored w/ ube	3.55	3.76	3.66	Very high
4. Benakle flavored w/ pandan	3.16	3.69	3.43	Moderately high
5. Benakle flavored w/ chocolate	2.85	3.36	3.11	Moderately high
6. Benakle flavored w/ ube	3.13	3.43	3.28	Moderately high
GRAND MEAN			3.20	Moderately high

It further reflects that the rice cake flavored with ube obtains the highest rating with an average mean of 6.680 in terms of its tastes acceptability followed by the peanut flavor with an average mean of 6.53. It also reveals that the pandan flavor and mocha obtains the same rating with a mean of 6.48. However, the coffee flavor obtains the lowest mean with 5.865 because of its strong coffee and sour taste that is being disliked by other evaluators/respondents. Overall, the computed overall average mean of the flavored rice cake delicacy is 6.4141 interpreted as moderately like.

It further concludes that regardless of its flavor whether natural or artificial flavors are highly acceptable as flavors of rice cake delicacy in terms of taste. However, it is important to distinguish between taste and flavor. Not every evaluator perceives the taste of a product in the same way. There is considerable genetic variation among individuals in its sensitivity to basic tastes. Tasting abilities may also vary within the individual, depending on a number of outside influences. Other factors influencing taste include the color of the food, the time of day it is eaten, and the age, gender, and the degree to which the evaluator is hungry

Texture: The finding or result of the study based from the respondents' evaluation is revealed on the tables below:

Texture is one of the very important characteristics in evaluating food delicacies. To many people, it is even more important than taste. It is also one of the most important attributes used by consumers to assess food quality. The components and ingredients within the food delicacy plus the processes they go through determine its texture.

The rice cake delicacy obtains an overall average mean with 6.3792 which like moderately in terms of texture. The data reflects that all the treatments from the two different flavors obtain like moderately rating. However, the “ube” and “pandan” flavor obtains the highest mean during the first test with 6.75 as like very much. On the other hand, during the second test almost all the treatments mean drops by and decline except for coffee and mocha.

This means that when there is a moderate content of coffee and mocha flavor use as an ingredient there is a high possibility of acceptability. It further concludes that each of the treatments flavor whether natural or artificial can be acceptable if it is mixed and properly processed in a different way considering the net content of each of the flavor. Based from the respondent's assessment on the overall acceptability of the flavored rice cake delicacy the data reveals that the overall acceptability of the flavored rice cake delicacy known as “benakle” is 3.10 with a moderately acceptable description. It further reflects that the “ube” flavor obtains the highest average mean with 3.68 followed by the “pandan” flavor with 3.52 interpreted as very much acceptable.

However, the data reveals that coffee flavor obtains the lowest acceptability rate due to its strong taste and smell. It further concludes that most of the flavors of the rice cake delicacy were very much acceptable in terms of the evaluation of the overall acceptability rate of its taste, texture, aroma and appearance. The table shows that there is a moderately high marketing potential of each the different flavors of rice cake using two types of flavors with an overall average mean of 3.20. It shows that “ube” flavor obtains the high marketability potentials with an average mean of 3.66 with a very high marketability description.

Thus, offering it to the market will lead to high return on investment followed by the “pandan” flavor with 3.43 as moderately marketable. However, it is also revealed that the coffee flavor has the lowest marketability rating with a mean of 2.75 as moderately marketable thus this flavor can be discouraging as a flavor used in the production of rice cake delicacy to avoid low return on investment. It further concludes that flavored rice cake delicacy product has a high potentials of marketability that will encourage more entrepreneurs to innovate more flavors that can be added as a marketing tool to strengthen and sustain the rice cake delicacy industry of Ifugao that would lead to improve the economic life styles and status of the entrepreneurs of the rice cake delicacy products known as “benakle”.

Table 7. The significant difference of the two trials

Pan Cake Character	Computed F	Significance Level
Appearance	0.328	0.879
Aroma	2.264	0.174
Taste	0.184	0.958
Texture	0.153	0.971
Acceptability	3.643	0.071
Marketability	0.451	0.800

Based from the computed F-value, all the treatments showed no significant difference in terms of appearance, aroma, taste and texture. The computed level of significance in all the characteristics is greater than 0.05 indicating no significant difference in all the treatments or the produced products based from the respondent's evaluation. It further concludes that the two treatments being undertaken has no significant difference and each trials have obtained almost the same status.

Summary, Conclusion and Recommendation

This chapter provides the conclusive statements and appropriate recommendations made by the researcher which is purely based from the findings of the study.

Summary findings and conclusion

- The rice cake delicacy flavored with either natural or artificial flavors has no difference of obtaining high or low ratings in terms of its appearance. Thus, a rice cake delicacy that is acceptable and liked by the respondents in terms of its appearance is the rice cake delicacy that is shinny and oily type regardless of its appearance.
- The aroma of "peanut" and "pandan" flavor is highly acceptable in the production of rice cake delicacy products. However, the coffee flavor has a strong aroma that is being disliked by the respondents.
- It concludes that regardless of its flavor whether natural or artificial flavors of the rice cake delicacy products are highly acceptable as flavors of rice cake delicacy in terms of its taste. However, the "ube" and "pandan" flavor obtains the highest acceptability rating.
- It reflects that all the treatments from the two different flavors obtain like moderately rating. However, the "ube" and "pandan" flavor obtains the highest acceptability rating in terms of its texture.
- It further concludes that the rice cake flavored with the different natural and artificial flavors can last only for two days in order to maintain its natural appearance taste texture and aroma without any further additives that will prolong its shelf life.
- Most of the flavors of the rice cake delicacy were very much acceptable in terms of the evaluation of the overall acceptability rate of its taste, texture, aroma and appearance. However, the "ube" flavor obtains the highest acceptability rating as flavor in the production of rice cake.

- It concludes that the improved and flavored rice cake delicacy product has high potentials of marketability that will lead to improve, the economic life styles and status of the entrepreneurs of the rice cake delicacy products known as "benakle". The flavored rice cake delicacy shows that it is also a tool to sustain and develop the native rice cake delicacy industry of the province.
- It is also the finding of the study that concludes that the two treatments being undertaken has no significant difference and each trials have obtained almost the same ratings of acceptability during the two tests.

Recommendation

In the light of the findings arrived the recommendations are as follows:

- A well designed packaging material and label should be developed in order to sustain high marketing potentials especially for displays intrading center's (pasalubong centers) for rice cake products.
- A well design marketing strategy seminars and workshops on how to market, sustain and develop the "benakle" product should be implemented to all the producers and entrepreneurs of rice cake delicacy products that will allow entrepreneurs to obtain high return on investment (ROI).
- An in debt feasibility study or marketing research should be done and be incorporated to identify the marketing needs, wants and demand of consumers in line with the product.
- A well-equipped facility room used in the production of the improved and flavored rice cake delicacy known as "benakle" should be given as main concern.
- The researcher recommends that a more in debt experiment will be done to improve and enhance more flavors that is much acceptable including technological and technical enhancement that can produce quality rice cake product and production process.

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