



FORMULATION AND ACCEPTABILITY OF NUTRI-BUN TO MITIGATE NUTRIENT DEFICIENCIES OF CHILDREN IN SAN ROQUE ELEMENTARY SCHOOL

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ABSTRACT

Human body needs nutrition to had a healthy progress of the body system. Nutrition helps us to maintain the balance vitamins needed of our body. Nowadays children had some difficulty in eating nutritious foods due to the many processed foods that made an alternative to achieve the taste of the customer demands. The researcher made an idea on how to bring up the nutrition needed of the body in those children who was difficult to eat the nutritious food from fresh resources. The primary goal of this study was to fulfill the nutrition of the children through a survey on formulation of the nutria-bun program. The Nutri-Bun program presents a multifaceted approach to tackling undernourishment among school Children particularly those at San Roque Elementary School. The Nutri-Bun was formulated baked good filled with essential vitamins and nutrients tailored to combat common deficiencies among children. The purpose of the study was to achieve the nutrition of food and help the children to achieve the benefits of it through human brain development. Ultimately, the Nutri-Bun formulation represents a multifaceted approach to addressing undernourishment among school children, integrating nutritional research, community engagement, and educational outreach to improve the health, academic to improve the health, academic performance, and future prospects of San Roque Elementary School. This study also showed that the nutrition bun program was helpful for the children who experience of lack nutrients also it was proven that the nutrition came from the foods would help them to survive in their daily lives and academic journey. The program also produces some charity to school to maintain their policy of No to malnutrition every nutrition month.

Key words: *Nutrition – Bun program, malnutrition, Nutritious foods, vitamin*



INTRODUCTION

Foods was one the basic needs of human to survive in this world. Foods had an impact on the process of the body. If there were no foods no energy can produce. The problem nowadays are not all the foods had benefits on human body some of manmade products had many preservatives that conclude to no nutrition gained. Especially children are too difficult in serving healthy foods they most attracted in chips, fast foods and all types of junk foods.

The nutritional status of schoolchildren says that students was not gained some proper nutrients they need in their daily lives due to lack of resources particularly in economically disadvantaged communities like San Roque, had become a growing concern. Inadequate nutrition not only hampers physical growth but also hinders physical and intellectual development, impacting students' ability to concentrate and learn effectively. The Nutri-bun, with its thoughtfully selected ingredients, aims to tackle these challenges by offering a convenient and accessible source of vital nutrients.

In the pursuit of addressing nutritional deficiencies among students, particularly those students at San Roque Elementary School, the Nutri-bun emerges as a promising solution. This special baked good filled with essential vitamins and nutrients to combat common deficiencies among children. The goal was to formulate a bun that will boost the well-being and academic performance of students at San Roque Elementary School, creating a healthier body through gained nutrients from the food and help them to develop their academic interest.

This research focuses into the creation process of the Nutri-bun, examining its composition to ensure it meets the specific nutrients needs of San Roque Elementary School students. Throughout local sourced ingredients, the Nutri-bun aims to be both tasty and fulfill to the schools' preferences.

Nutri-bun, also referred to as Nutri-bun or Nutri-ban was developed by a team of nutritionists and agrarian experts at the Virginia Polytechnic Institute and State University between 1968 and 1970 and was designed as a convenient 'ready-to-eat complete meal' for public elementary school feeding programs to combat child malnutrition in the Philippines." In addition to requiring the bread to be well fortified with nutrients, USAID also requested that the product be easy to augment using local ingredients, such as moringa leaf powder ("malunggay"), squash, banana powder and eggs in the Philippines.

Apart from its nutritional advantages, the Nutri-bun project seeks to encourage community empowerment and involvement. Through utilizing local sourced foods and interacting with San Roque area. The project cultivates an alternative but had a benefit food that can be a solution that meets their needs.

All things considered; the Nutri-bun program was a multifaceted strategy to address the intricate problem of undernourishment among schoolchildren. The initiative aims to develop a sustainable



solution that improves the health, academic performance of San Roque Elementary School pupils. This research study aims to know the possible outcome of the product in the lives of San Roque Area. This research gained through integrating nutritional research, community engagement, and educational outreach information.

METHODOLOGY

In this chapter, the approach employed to accomplish the study's objectives is explained. The outlined steps provide a systematic framework that guides the research towards its intended outcomes. By detailing the chosen methodology and sequential actions, this chapter offers a comprehensive overview of the study's strategic implementation.

Research Design

This conducted research used descriptive developmental research study design to comprehensively address the specific nutritional needs of children in San Roque Elementary School. It used quantitative techniques for gathered information from the target respondents. It was used to determine their satisfaction in gaining the benefits and the effect of the nutri-bun product in their academic performance. The information gained through the use of implemented questionnaire. The results of this research would advocate the products benefits to students and demands in the market.

Respondents of the Study

This research study used purposive sampling to collect the data needed. A purposive sampling technique utilized to allocate the number of respondents and to had an appropriate gathered data in limited time. This technique involves selecting participants based on specific criteria that are relevant to the investigation. This study conducted to the respondents were from 9 students in the Hospitality Management Program and 6 faculty members from the College of Business Education and Management Department at the International School of Asia and the Pacific, located in Alimannao Hills, Peñablanca, Cagayan and 4 experts from the Shakey's Pizza Parlor and 1 from the International School of Asia and the Pacific.

Data Gathering Tool

Researchers created semi-structured questionnaire checklist to gather all the needed data for respondents' perceptions and preferences through the formulated nutri-bun. This research tool helps the researchers to collect the data with a validity and reliability. The questionnaire was divided into 5 parts each flavor, it focuses on different aspects related to the appearance, aroma, taste, texture, and quality. Each part contains a series of questions with predefined response options for the participants to select. The researchers utilized semi-structured based on the study of (Abanas, A. N.D). Survey questionnaire focused on the sensory aspects of the product, such as appearance, aroma, taste, texture, and quality. The survey questionnaire had been utilized to assess and determine the



satisfaction for the formulation and acceptability of nutri-bun to mitigate nutrient deficiencies of children in San Roque Elementary School to gathered information. The results of this questionnaire tool can be the appropriate basis as evidence of the study to achieved the target results.

Data Gathering Procedure

The process of obtaining approval for the research questionnaire entails designing a comprehensive questionnaire, seeking endorsements from department heads, and drafting formal letters outlining the research's purpose for approval from the Vice President for Innovations and External Affairs, OIC Presidents and Director of the Research Office. To engage with the chosen faculty members and student participants, the researcher conducted face to face interactions for the purpose of personally delivering and collecting the questionnaires. To facilitate this process, traditional printed questionnaires were employed as the preferred tool for data collection. We interpret all the data based on the statistics given by the statistician. We interpret it orderly from categorical mean, highest mean, lowest mean, and its implications. We also include back up RRL in our interpretation.

Data Analysis

Using frequency count and percentage distribution, this statistical technique was utilized to further assess the data that was gathered and ascertain the precise number of experts, faculty members, and students. To evaluate Plain Nutri-Bun, Nutri-Bun with Papaya Jam, and Nutri-Bun with Liver Spread statistically on their acceptability in terms of appearance, aroma, taste, texture, and quality, a weighted mean was employed. Furthermore, One-way ANOVA was used to utilize significant differences on the assessment of the participants in the level of acceptability in terms of appearance, aroma, taste, texture, and quality of the nutri-bun.

RESULT

TABLE 1.1. THE PROFILE OF THE EXPERT-RESPONDENTS IN TERMS OF AGE

CATEGORY	FREQUENCY	PERCENTAGE
21-27 years old	1	20 %
No Response	4	80 %
TOTAL	5	100 %

The table revealed that 80% of the expert-respondents had no response and it was the highest percentage. The lowest percentage was 20% gathered from 21-27 years old. It implies that the majority of the age of the experts are no response upon from the privacy of their profile.

TABLE 1.2. THE PROFILE OF THE EXPERT-RESPONDENTS IN TERMS OF GENDER

CATEGORY	FREQUENCY	PERCENTAGE
Male	3	60.00
Female	2	40.00



TOTAL	5	100.00
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It was discovered that the table shown the male expert-respondents had the highest percentage comprising 60% and female had the lowest percentage of 40% in terms of gender. The data affirmed that there are more of male expert-respondents than the female expert respondents.

TABLE 1.3. THE PROFILE OF THE EXPERT-RESPONDENTS IN TERMS OF YEARS IN THE FOOD INDUSTRY

CATEGORY	FREQUENCY	PERCENTAGE
1 – 3 years	2	40 %
4 - 6 years	2	40 %
7 – 10 years	1	20 %
TOTAL	5	100 %

The table shown that 1-3 years and 4-6 years had the same highest percentage of 40 % in terms of years in the food industry of the expert-respondents while 7-10 years in the food industry had the lowest percentage of 20%. According to Heather H. Keller, PhD, RD. Amie Gibbs, MSc, RD, Sharon Wong, MSc RD, Patricia Vanderkooy, MSc RD and Margaret Hedley, MSc RD (2003). in Nutrition education for older adults stated that Men can cook and most of the expert was the adult men.

TABLE 1.4. THE PROFILE OF THE EXPERT-RESPONDENTS IN TERMS OF TRAININGS ATTENDED

CATEGORY	FREQUENCY	PERCENTAGE
NC II	1	20 %
Restaurant Manager Development Program	1	20 %
Pastry Arts & Culinary Arts Training	1	20 %
No Response	2	40 %
TOTAL	5	100 %

The table shown that 40 % of the expert-respondents had no response while both NCII and Restaurant Manager Development Program, and Pastry Arts & Culinary Arts Training with the lowest percentage of 20%. It was revealed that most of the respondents agreed to do not told their expertise for their privacy purposes. According to Matthew P. Mortlock, Adrian C Peters, Christopher J Griffith (2000) stated that in national survey of food hygiene. Training must be a qualification as the expertise in food industry.

TABLE 2.1. THE PROFILE OF THE NON- EXPERT-RESPONDENTS IN TERMS OF AGE

CATEGORY	FREQUENCY	PERCENTAGE
20 - 26 years old	9	60 %
27 - 33 years old	1	6.70 %
No Response	5	33.30 %
TOTAL	15	100 %



The table shown that 60 % of the non-expert respondents in 20-26 years old had the highest percentage and 27-33 years old had the lowest percentage of 6.70%. The majority of the age of the non-expert stated in the range of early adulthood.

TABLE 2.2. THE PROFILE OF THE NON- EXPERT-RESPONDENTS IN TERMS OF GENDER

CATEGORY	FREQUENCY	PERCENTAGE
Male	8	63.30 %
Female	7	46.70 %
TOTAL	15	100 %

The Table shown that male expert-respondents had the highest percentage comprising 63.30 % and female had the lowest percentage of 46.70% in terms of gender. The data affirmed that most of the non-expert respondents are male.

TABLE 3.1. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE PLAIN NUTRI- BUN IN TERMS OF APPEARANCE

STATEMENT	MEAN	DESCRIPTION
1. Nutri-bun was well-baked and had an appealing crust.	3.40	HIGHLY ACCEPTABLE
2. Nutri-bun has a simple yet delicious look.	3.45	HIGHLY ACCEPTABLE
3. The overall appearance of Nutri-bun was visually appealing.	3.55	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.47	HIGHLY ACCEPTABLE

The table shown that the participants highly accepted the plain nutri-bun in terms of its appearance with a weighted mean of 3.47. In Statement 3 “The overall appearance of nutri-bun was visually appealing” obtaining the highest mean of 3.55 with a descriptive value of highly acceptable while in statement 1 “Nutri-bun is well-baked and has an appealing crust” having the lowest mean of 3.40 with a descriptive value of highly acceptable. It revealed that the customers are attracted in the appealing appearance of the Nutri – Bun. According to Keishi Okamoto 2022, a pleasing sight of food stimulates appetite. These results suggest that the good appearance of foods, such as iEat foods, may be useful for stimulating the appetite of patients with poor appetite.

TABLE 3.2. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE PLAIN NUTRI- BUN IN TERMS OF AROMA

STATEMENT	MEAN	DESCRIPTION
1. Nutri-bun smells enticingly fragrant.	3.40	HIGHLY ACCEPTABLE



2. The aroma of Nutri-bun is appetizing.	3.45	HIGHLY ACCEPTABLE
3. The Nutri-bun had a pleasant and inviting scent.	3.60	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.48	HIGHLY ACCEPTABLE

The table shown that the participants highly accepted the plain nutri bun in terms of aroma with a categorical mean of 3.48 In Statement 3 it revealed that “The Nutri-bun had a pleasant and inviting scent.” Which had the highest mean of 3.60 with a descriptive value of highly accepted while in statement 1 “The Nutri-bun smells enticingly fragrant.” had the lowest mean of 3.40 with a descriptive value of highly accepted. According to Matteo Bordiga, Leo ML Nollet 2019 food aroma affects the costumers’ attention. It was compared and stated that the nutri – bun had an appealing aroma

TABLE 3.3. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE PLAIN NUTRI- BUN IN TERMS OF TASTE

STATEMENT	MEAN	DESCRIPTION
1. The Nutri-bun had a precise level of flavor.	3.25	HIGHLY ACCEPTABLE
2. The taste of Nutri-bun was just right.	3.25	HIGHLY ACCEPTABLE
3. The overall taste of Nutri-bun was satisfying.	3.50	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.33	HIGHLY ACCEPTABLE

It was revealed in the table shown that the Statement 3 “The overall taste of nutri-bun is satisfying” obtaining the highest mean of 3.50 with a descriptive value of highly acceptable while in statement 1 “The nutri-bun had a precise level of flavor” and statement 2 “The taste of nutri-bun was just right” had the lowest mean of 3.25 with a descriptive value of highly acceptable. According to Chen, X., 2011 stated that there was similarity about the satisfaction of the customers in Nutri – Bun product in terms of the taste.

TABLE 3.4 LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE PLAIN NUTRI- BUN IN TERMS OF TEXTURE.

STATEMENT	MEAN	DESCRIPTION
1. Nutri-bun had a soft and buttery texture.	3.55	HIGHLY ACCEPTABLE
2. The thickness of Nutri-bun is perfectly balanced.	3.45	HIGHLY ACCEPTABLE



3. The overall texture of Nutri-bun was satisfying.	3.40	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.47	HIGHLY ACCEPTABLE

It was shown that the statement 1 “The Nutri-bun had a soft and buttery texture” obtained the highest mean of 3.55 with a descriptive value of highly accepted while in statement 3 “The overall texture of Nutri-bun was satisfying” it had the lowest mean of 3.40 with a descriptive value of highly accepted. According to the study of Andrew J Rosenthal, Jianse Chen 2023 state that Food texture refers to the texture-related characteristics of a food product, seeks to rationalize several variables that contribute to food texture in layman's terms. Solid meals are classified into three dimensions: hard-soft, strong-weak, and brittle-plastic. For liquid meals, three dimensions are proposed: elastic-viscous, thick-thin, and shear-thinning-shear thickening.

TABLE 3.5 LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE PLAIN NUTRI- BUN IN TERMS OF QUALITY

STATEMENT	MEAN	DESCRIPTION
1. The quality of Nutri-bun meets my expectations.	3.55	HIGHLY ACCEPTABLE
2. Nutri-bun was made with high quality ingredients.	3.65	HIGHLY ACCEPTABLE
3. The overall quality of Nutri-bun is satisfactory.	3.50	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.57	HIGHLY ACCEPTABLE

It was revealed that in Statement 2 “The Nutri-bun was made with high-quality ingredients.” obtaining the highest mean of 3.65 with a descriptive value of highly accepted while in statement 3.50 “The overall quality of Nutri-bun is satisfactory” having the lowest mean of 3.50 with a descriptive value of highly accepted. It was implied that the plain nutri-bun in terms of quality was highly accepted by the respondents. In study of Staff Writer, the level of competition of the food sector needs the continued production of high-quality products for long-term profitability. Consumers nowadays are more concerned with food quality and safety, making quality control essential. This guarantees that goods meet or surpass defined standards, giving customers safe and consistent food options.

TABLE 4.1. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE NUTRI- BUN WITH PAPAYA JAM IN TERMS OF APPEARANCE

STATEMENT	MEAN	DESCRIPTION
1. Nutri-bun was well-baked and has an appealing crust.	3.60	HIGHLY ACCEPTABLE
2. Nutri-bun had a simple yet delicious look.	3.85	HIGHLY ACCEPTABLE



3. The overall appearance of Nutri-bun was visually appealing.	3.75	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.73	HIGHLY ACCEPTABLE

The table shown that the in statement 2 “Nutri-bun had a simple yet delicious look” with the highest mean 3.85 with a descriptive value of highly acceptable while in statement 1 “Nutri-bun is well baked and has an appealing crust” having the lowest mean of 3.60 with a descriptive value of highly acceptable. According to bert P. Felongco, 2019 nutri – bun was similar to the local made bun in our country. It was the also visually appealing to the customer.

TABLE 4.2. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE NUTRI- BUN WITH PAPAYA JAM IN TERMS OF AROMA

STATEMENT	MEAN	DESCRIPTION
1. Nutri-bun smells enticingly fragrant.	3.58	HIGHLY ACCEPTABLE
2. The aroma of Nutri-bun is appetizing.	3.50	HIGHLY ACCEPTABLE
3. The Nutri-bun has a pleasant and inviting scent.	3.60	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.56	HIGHLY ACCEPTABLE

It was revealed that the in statement 3 “The Nutri-bun has a pleasant and inviting scent.” obtaining the highest mean of 3.60 with a descriptive value of highly accepted while in statement 2 “The aroma of Nutri-bun is appetizing.” had the lowest mean of 3.50 with a descriptive value of highly accepted. It implies that the nutri-bun with papaya jam in terms of aroma is highly accepted by the respondents.

Bread aroma is one of the main requirements for its acceptance by consumers, since it is one of the first attributes perceived. Sensory analysis, crucial to be correlated with human perception, presents limitations and needs to be complemented with instrumental analysis. (Joana Pico, José Bernal, Manuel Gómez 2015)

TABLE 4.3. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE NUTRI- BUN WITH PAPAYA JAM IN TERMS OF TASTE

STATEMENT	MEAN	DESCRIPTION
1. The Nutri-bun has a precise level of flavor.	3.75	HIGHLY ACCEPTABLE
2. The taste of Nutri-bun is just right.	3.75	HIGHLY ACCEPTABLE
3. The overall taste of Nutri-bun is satisfying.	3.75	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.75	HIGHLY ACCEPTABLE



The table shown that the statement 1 “The Nutri-bun has a precise level of flavor.” Statement 2 “The taste of Nutri-bun is just right” and Statement 3 “The overall taste of Nutri-bun is satisfying” has the same mean of 3.75 Nutri-bun with papaya jam in terms of taste was highly accepted by the respondents. Overall all of the statement problem was revealed that has equal weighted mean 3.75 and it was highly acceptable also revealed in the study of According to the study of Areej O. Bawajeesh 2020 The article explores the role of taste in food choice and intake, highlighting its role as a nutrient sensing system.

TABLE 4.4. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE NUTRI- BUN WITH PAPAYA JAM IN TERMS OF TEXTURE

STATEMENT	MEAN	DESCRIPTION
1. Nutri-bun had a soft and buttery texture.	3.75	HIGHLY ACCEPTABLE
2. The thickness of Nutri-bun is perfectly balanced.	3.75	HIGHLY ACCEPTABLE
3. The overall texture of Nutri-bun was satisfying.	3.75	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.75	HIGHLY ACCEPTABLE

It was shown on the table that the participants highly accepted the Nutri-bun with papaya jam in terms of its aroma with a categorical mean of 3.75. Statement 1 “Nutri-bun had a soft and buttery texture.” Statement 2 “The thickness of Nutri-bun is perfectly balanced.” and Statement 3 “e overall texture of Nutri-bun was satisfying” has the same mean of 3.75. Thus, it implies that the nutri-bun with papaya jam in terms of texture is highly accepted by the respondents. The study had similarities about food texture description by Andrew J Rosenthal, Jianshe Chen 2023 stated that Food texture refers to the texture-related features of a food product, but describing it is challenging.

TABLE 4.5. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE NUTRI- BUN WITH PAPAYA JAM IN TERMS OF QUALITY

STATEMENT	MEAN	DESCRIPTION
1. The quality of Nutri-bun meets my expectations.	3.55	HIGHLY ACCEPTABLE
2. Nutri-bun was made with high quality ingredients.	3.45	HIGHLY ACCEPTABLE
3. The overall quality of Nutri-bun is satisfactory.	3.40	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.23	HIGHLY ACCEPTABLE

The table shown that the in Statement 2 “Nutri-bun is made with high-quality ingredients” with the highest mean 3.55 with a descriptive value of highly acceptable while statement 1 “The quality of nutri-bun meets my expectations” and statement 2 “The overall quality of nutri-bun is satisfactory” has the lowest mean of 3.40 with a descriptive value of highly acceptable. According to the study of Tomas Salidek 2019 stated that the study focused at the factors that determine food product quality and finds



variations between two groups: geographic origins, age, tendency to read labels, scientific knowledge, and self-assessment of food safety expertise.

TABLE 5.1. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE NUTRI- BUN WITH LIVER SPREAD IN TERMS OF APPEARANCE

STATEMENT	MEAN	DESCRIPTION
1. Nutri-bun is well-baked and has an appealing crust.	3.45	HIGHLY ACCEPTABLE
2. Nutri-bun has a simple yet delicious look.	3.55	HIGHLY ACCEPTABLE
3. The overall appearance of Nutri-bun is visually appealing.	3.60	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.47	HIGHLY ACCEPTABLE

The participants highly accepted the nutri-bun with liver spread in terms of its appearance with the categorical mean 3.47. In Statement 3 “The overall appearance of nutri-bun was visually appealing” with the highest mean 3.60 with a descriptive value of highly acceptable while statement 1 “Nutri-bun is well-baked and has an appealing crust” has the lowest mean of 3.45 with a descriptive value of highly acceptable. Thus, it implies that the nutri-bun with liver spread is highly acceptable for the respondents. Nowadays, Visualization of food appearance has become an important factor in influencing customer satisfaction which is creating an unforgettable experience when people visit to the restaurant. In this study, visualization of food appearance had five important factors that support in achieving customer satisfaction, which are; component of the material used, color selection, food texture, shape and size, and layout. (John Hutchings 2007)

TABLE 5.2. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE NUTRI- BUN WITH LIVER SPREAD IN TERMS OF AROMA

STATEMENT	MEAN	DESCRIPTION
1. Nutri-bun smells enticingly fragrant.	3.35	HIGHLY ACCEPTABLE
2. The aroma of Nutri-bun is appetizing.	3.50	HIGHLY ACCEPTABLE
3. The Nutri-bun has a pleasant and inviting scent.	3.55	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.52	HIGHLY ACCEPTABLE

The able shown that the participants highly accepted the nutri-bun with liver spread in terms of its aroma with the categorical mean 3.52. In Statement 3 “The nutri-bun has a pleasant and inviting scent” with the highest mean 3.55 with a descriptive value of highly acceptable while statement 1 “Nutri-bun smells enticingly fragrant” has the lowest mean of 3.35 with a descriptive value of highly acceptable. Despite the popularity of using indulgent food scents to boost sales of indulgent food in retail settings,



research had only recently shown that the duration of the indulgent scent influences consumer motivation in food consumption. We conceptually replicate and extend Biswas and Szocs (2019).

TABLE 5.3. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE NUTRI- BUN WITH LIVER SPREAD IN TERMS OF TASTE

STATEMENT	MEAN	DESCRIPTION
1. The Nutri-bun has a precise level of flavor.	3.45	HIGHLY ACCEPTABLE
2. The taste of Nutri-bun is just right.	3.55	HIGHLY ACCEPTABLE
3. The overall taste of Nutri-bun is satisfying.	3.55	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.52	HIGHLY ACCEPTABLE

It was revealed in the table 5.3 shows that the participants highly accepted the nutri-bun with liver spread in terms of its taste with the categorical mean 3.52. In Statement 2 “The taste of nutri-bun is just right” and statement 3 “The overall taste of nutri-bun is satisfying” with the highest mean 3.55 with a descriptive value of highly acceptable while statement 1 “The nutri-bun has a precise level of flavor” has the lowest mean of 3.45 with a descriptive value of highly acceptable. It was implied that the nutri-bun with liver spread was highly acceptable for the respondents. According to Russell Keast. Et al. This review examines the relationship between flavor perception and nutritional intake in healthy individuals. It aims to identify the flavor metric most closely related to dietary intake.

TABLE 5.4. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE NUTRI- BUN WITH LIVER SPREAD IN TERMS OF TEXTURE

STATEMENT	MEAN	DESCRIPTION
1. Nutri-bun has a soft and buttery texture.	3.60	HIGHLY ACCEPTABLE
2. The thickness of Nutri-bun is perfectly balanced.	3.55	HIGHLY ACCEPTABLE
3. The overall texture of Nutri-bun is satisfying.	3.60	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.58	HIGHLY ACCEPTABLE

It was revealed that the participants highly accepted the nutri-bun with liver spread in terms of its texture with the categorical mean 3.58. In Statement 3 “The overall texture of Nutri-bun is satisfying” and in statement 1 "Nutri-bun has a soft and buttery texture." with the highest mean 3.60 with a descriptive value of highly acceptable while statement 2 “The thickness of Nutri-bun is perfectly balanced.” had the lowest mean of 3.55 with a descriptive value of highly acceptable. Thus, it implies that the nutri-bun with liver spread is highly acceptable for the respondents. In the study of according to Quoc Cuong Nguyen 2023 This chapter explores the connection between food texture perception, consumer preferences, and satiety expectations.



TABLE 5.5. LEVEL OF ACCEPTABILITY OF THE PARTICIPANTS ON THE NUTRI- BUN WITH LIVER SPREAD IN TERMS OF QUALITY

STATEMENT	MEAN	DESCRIPTION
1. The quality of Nutri-bun meets my expectations.	3.50	HIGHLY ACCEPTABLE
2. Nutri-bun is made with high quality ingredients.	3.65	HIGHLY ACCEPTABLE
3. The overall quality of Nutri-bun is satisfactory.	3.60	HIGHLY ACCEPTABLE
CATEGORICAL MEAN	3.58	HIGHLY ACCEPTABLE

The table shown that the participants highly accepted the nutri-bun with liver spread in terms of its quality with the categorical mean 3.58. In Statement 2 “Nutri-bun is made with high-quality ingredients.” with the highest mean 3.65 with a descriptive value of highly acceptable while statement 1 “The quality of Nutri-bun meets my expectations.” had the lowest mean of 3.50 with a descriptive value of highly acceptable. Thus, it implies that the nutri-bun with liver spread is highly acceptable for the respondents. According to Bhavya S.N. and Jamuna Prakash 2018 the bun was created by the high quality ingredients like soya milk which help for dietary fiber.

TABLE 6. DIFFERENCE ON THE ASSESSMENT OF THE PARTICIPANTS IN THE LEVEL OF ACCEPTABILITY OF NUTRI- BUN

VARIABLES	FLAVORS	MEAN	f-value	p-value	DECISION
APPEARANCE	PLAIN	3.467	2.084	0.134	NOT SIGNIFICANT
	PAPAYA JAM	3.733			
	LIVER SPREAD	3.533			
AROMA	PLAIN	3.483	0.172	0.842	NOT SIGNIFICANT
	PAPAYA JAM	3.558			
	LIVER SPREAD	3.467			
TASTE	PLAIN	3.333	3.588	0.034	SIGNIFICANT
	PAPAYA JAM	3.750*			
	LIVER SPREAD	3.517			
TEXTURE	PLAIN	3.467	1.921	0.156	NOT SIGNIFICANT
	PAPAYA JAM	3.750			
	LIVER SPREAD	3.583			
QUALITY	PLAIN	3.567	1.604	0.210	NOT SIGNIFICANT
	PAPAYA JAM	3.817			
	LIVER SPREAD	3.583			

The table shown the assessment of the participants in the level of acceptability of nutri-bun tells that there was no significance in every variable except the papaya jam in terms of taste with the mean of 3.750. Papaya was a very popular fruit grown in tropical countries and belongs to the family of



Carcicaceae. Nutritionally papaya had rich source of carotenoids and also provides fair amounts of B complex vitamins ascorbic acid, and minerals.

Thematic Analysis

This study consists of recommendation from the respondent which aimed to help the researcher improve the product.

<i>Formulated Meanings</i>	<i>Cluster Theme</i>	<i>Emergent Theme</i>
<i>Plain Nutri-bun</i>		
<ul style="list-style-type: none"> Needs more improvement. Make the bun more appealing since it is for the kids so that they can enjoy the food. Enhance the aroma of the bun/bread. Add more flavor. Add more taste to make it more appetizing. Add saltiness to the bun. Make the bread soft. Improve puffing of the bun. Too plain. Include labels of ingredients and shelf life. Enhanced the quality of bread. Include nutritional facts. 	<p>Appearance</p> <p>Aroma Taste</p> <p>Texture</p> <p>Quality</p>	<p>Formulation and Acceptability</p>
<i>Nutri-bun with Papaya Jam</i>		
<ul style="list-style-type: none"> Needs more improvement. Make the bun more appealing since it is for the kids so that they can enjoy the food. Enhance the aroma of the bun/bread. Add more flavor. Enhance the taste. Add saltiness to the bun. The bread should taste more like papaya not just the filling. 	<p>Appearance</p> <p>Aroma Taste</p>	
<ul style="list-style-type: none"> Add more flavor. Enhance the taste. Add saltiness to the bun. 		Taste



- *The bread should taste more like papaya not just the filling.*

- *Make the bread soft.* Texture
- *Improve puffing of the bun.*
- *Add more filling.* Quality
- *Include labels of ingredients and shelf life.*
- *Enhanced the quality of bread.*
- *Include nutritional facts.*

Nutri-bun with Liver Spread

- *Needs more improvement.* Appearance
- *Make the bun more appealing since it is for the kids so that they can enjoy the food.*
- *Enhance the aroma of the bun/bread.* Aroma
- *Add more flavor and make the liver spread more dominant in terms of taste than the egg.* Taste
- *Add saltiness to the bun.*
- *Make the bread soft.* Texture
- *Improve puffing of the bun.*

SUMMARY OF FINDINGS

The respondents who try the nutri – bun product was satisfied in the plain nutria – bun it was revealed that the bun taste like the ordinary bun here in our local country which called “pandesal”. The taste was the same of the original “pandesal” but still they had differences especially on the ingredients the nutria – bun had a specific ingredient where they can help the children to fulfill their deficiency in their nutrition. Mostly of the students and adults nowadays don’t eat breakfast due to obligations and lack of time. Filipino were proven that loves to eat pandesal in morning and as snack when they felt the hunger. The nutria – bun was a way to get that nutrition. The benefits of the nutria – bun achieved especially for those children who had difficulty in eating nutritious foods from fresh resources. Most of the customers are highly appreciated the aroma of the nuti – bun and how it was presented. The respondents also suggest to add some flavor to attract some customer at the market.

CONCLUSION

In the conclusion of the finding in this research study, the formulation of the nutria – bun product survey that it was approved by the customers who taste it and the successful review of having attracted aroma that led to taste can attract adults and children who would need the nutrient they can have gained from the product. The primary purpose of this research study to access if they were satisfied and attach to the nutria – bun and if they can have gained the nutrients included also to prove that it can help them to give energy to the academic purposes of the students. The satisfaction of the respondents conclude that it can be an implemented program especially to those children who dislike to eat nutritious foods. In school they can use it as feeding program.

RECOMMENDATIONS



In making the nutri-bun it was need to change the temperature and time of the baking process to improve the visual appeal to reach the satisfaction of the respondents when it comes to the overall appearance of the nutri-bun.it was also need aromatics to improve the smell and fragrant of the nutri-bun when it comes to aroma. In the overall taste of nutri-bun needs to be adjusted. We need to add more flavor like salt, sugar, butter milk to make it tastier and satisfying in the mouth. Furthermore, we need to adjust the texture of the nutri-bun. The thickness should be balanced and make it softer and fluffier. The quality needed an improvement also, we need to make sure the ingredients was made from good quality and full of nutrients to solve the nutrient deficiencies of the children in San Roque Elementary School.

The respondents' recommendations:

- The nutri-bun should be dominant in taste and the bread in the papaya flavor should taste like papaya not just the filling.
- Add saltiness and sweetness to nutri-bun.
- Add more flavor in the liver spread that they can taste liver spread inside the nutri-bun.
- The plain nutri-bun needs an adjustment also make it taste more satisfying.
- Incorporate labels of the ingredients and nutritional facts
- Improve the aroma of the plain nutri-bun.
- Add more filling to the papaya and liver spread nutri-bun.
- Improve the appearance since it's for the children so that they can enjoy the food.
- Add some catchy design of the packaging.

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