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Power Analysis Received, Storage, Nutrition Content, Organoleptic Test and Jingga and Green Processing Processes For Balanced Nutrition Food 2018

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***Abstract* - Palembang's ethnic food quality in the form of pempek have a good nutritional content that can be increase its nutritional value in terms of the types of nutrients, namely by adding vitamin C, minerals, and fiber (many of which are found in vegetables and fruits) that have not been found in Palembang's ethnic Pempek food. The purpose of the research is to find out the acceptability and storage power, nutrient content, organoleptic test and proximate orange pempek and green toward balanced nutritional food. The research method is random sampling. The research activities included the determination of 60 panelists (Students of the Unsri Palembang Nutrition Study Program FKM) and 120 respondents from the academic capacity of the Unsri Palembang FKM nutrition study program, held on 22,23,24 October 2018 and 29,30,31 October 2018. While the analysis with univariate and Bivariate analysis. Univariate analysis was conducted to describe the data collected and grouped and analyzed with frequency distribution table. Bivariate analysis was used with Analysis Kruskall Wallis on the next 5% tarf if the results showed significantly different followed by the Duncans Multi Range Test (DMRT) test with a level of 5%. The result of this test showing that there are difference between**

Keywords: pempek, carrot juice, spinach juice, nurition.

I. INTRODUCTION

The food name Pempek was known around the 16th century when Sultan Mahmud Badarudin II triumphed in the Palembang Darussalam Sultanate. 67-year-old Apek (old man) did culinary development from abundant fish catches on the banks of the Musi river. With a mixture of fish formula with tapioca flour compared to 1: 1, be a new food, then sold by the musty around the city and the seller is called by consumers as Pak Pek then finally known as Pempek or Empek-Empek.

Pempek as a palembang food needs to be carried out stage II culinary development after the first stage is done by musty Chinese descent. Kemas developed a food service mister with a partnership system approach since 2008. This preferred business has grown maximally. The results of stage II development by packing in the form of pempek sausage, pempek keju. Through the online media website wong kito 19 Palembang ethnic food is also called fish meatball (ngohyang) which is served with a black sauce (cuko). The development of this palembang ethnic culinary is also present in cuko which is from a spicy taste to sweetness so that it can satisfy / satisfy the appetite of the appetite [1].

According to [2]. pempek is a traditional food product that can be classified as a fish gel, as well as the brain-brain or kamaboko in Japan. The 1980 study showed that the percentage of hotels and restaurants in Palembang that served pempek was around 44.4% - 66.7% [2]. Along with the increasingly widespread acceptance of society, the number of food seller restaurants that are also icons of culinary Palembang City is increasing from time to time. Kompas.com News on September 22, 2008, titled "Palembang Sends 0.5 Tons of Pempek Per Day" Journalistic monitoring seen from the delivery of pempek packages via cargo to the Sultan Mahmud Badaruddin II International Airport in Palembang said that before Lebaran, 50,000 pempek a day before Lebaran out of town.

Save relatively low vegetable content at room temperature. When storing using freezer, its shelf life increases up to about four weeks. Likewise, by adding vacuum (vacuum) technique in the freezer, it can increase the durability of empek-empek up to 40. If more than 40 days of storage of pempek will experience dehydration and oxidation of the air entering the pempek. So that the appearance of Pempek becomes yellow, the texture is darker and harder.

Another way to extend the shelf life is to drain the water attached to the surface of the pempek with a sterile singap pempek technique that is completely dry and clean.

Palembang's ethnic food quality in the form of pempek is seen from nutritional value according to the organization's website [3]. that has good nutritional value in the form of energy of 182 kcal, 9.2 grams of protein, 27.8 grams of carbohydrates, 3.8 grams of fat, 401 calcium mg, phosphorus 116 mg, and iron 2.4 mg. In addition, Pempek contains 13 IU of vitamin A, 0.16 mg of vitamin B1 and 0 mg of vitamin C (eight kinds of nutrient sources) [4].

The quality of Palembang food pempek should be done by adding food ingredients from vegetables that contain important minerals such as vitamin B2, vitamin B6, vitamin C, vitamin Fe, zinc and

fiber foods. With the addition of carrot juice and spinach juice, it can be filled with other nutrients needed by the body. This shows that vitamin, mineral and fiber fortification in pempek food from carrot and spinach extracts shows that this supports the GERMAS program to promote a campaign to eat vegetables and fruits every day. This is important because 93.5% of Indonesians consume less vegetables and fruits. The 2013 Department of Agriculture's R & D data showed that fruit consumption was 34.55 kilograms per year and 40, 35 kilograms per hectare per year. This figure is far from the recommendations of the United Nations Food and Agriculture Organization, each of which recommends 25 kg per capita per year [5]. "The lack of consumption of vegetables and fruit is one of the causes of soaring non-communicable diseases in Indonesia in recent years," said fruits and vegetables containing vitamins A, C, E, folic acid, zinc, magnesium, potassium, and calcium that the body needs [6]. The proximate test to determine the nutritional content of orange and green pempek to convince the public that the orange pempek and green have been tested for their nutritional content and unit weight so that the nutritional amount can be known if a person consumes orange and green pempek.

The purpose of sensory testing is directly related to the tastes of each person in each region has a tendency to certain tastes. So that the product to be marketed must be tailored to the tastes of the local community. When associated with consumers, the target customer (food service) becomes one of the assessments, for example children or adults. In this case the researcher conducted this test in Nutrition Study Program FKM Unsri on 60 panelists and 120 respondents. The hedonic score has a value of 5 based on the Likert scale namely 5 SS (Strongly agree), 4 S (Agree), 3 RR (Doubtful), 2 TS (Disagree), 1 STS (Strongly disagree). The analysis used to process the favorite hedonic test data is analysis of variance or analysis of variance kruskall wallis if there are significant differences then a duncan further test is performed.

The storage method that is suitable for orange pempek and green is with frozen storage, it will extend the shelf life. Starting from the method of making pempek it must be clean (hygenis and sanitation). According to the Ministry of Health of the Republic of Indonesia, 1999 the basic principles of food and beverage health must pay attention to hygiene and sanitation, namely by using containers. The type of container that is good for freezing orange pempek and green is a special sealed airtight plastic bag. In this bag all the air inside is removed (vacuum) This container is quite effective if the storage of orange and green pempek is carried out with sterile action before storage.

II. METHODS

A. *Design and Research Methodology*

1) *Scope of Research*

This research was conducted at FKM Nutrition Study Program / FKM Unsri Palembang. The time for September – November 2018. Pempek jingga and green production sites in Talang Putri Plaju Palembang.

2) *Preliminary Research*

The results of this preliminary test are used as the basis for making the research design, so that in the preliminary test the appropriate formulation is obtained and approaching the formula that is in control.

3) *Research Design*

This research is an experimental study with a completely randomized design method (CRD) using 5 levels of treatment namely 50 gram carrot juice, 100 gram carrot juice, 50 gram spinach extract, and 100 gram spinach extract. Each treatment was repeated 3 times to obtain 5 experimental units. It will be tested organoleptically by 60 panelists from the Unsri Palembang Nutrition Study Program FKM.

4) *Research Implementation*

Making carrot and spinach sari is done by sorting carrots which have good quality, are not hollow, and fresh, and spinach used comes from fresh, rootless spinach leaves. Then washed and blended so that you get carrot and spinach extract. This juice is then mixed with the Pempek mixture as follows with the following formulations:

Table 1. Formulation of Preliminary Tests for Pempek Jingga and Green

Formula	Material					
	Tapioca flour (kg)	Fish (kg)	Ice water (ml)	salt (g)	carrot juice (g)	spinach juice (g)
A0	1	1	400	50	0	0
A1	1	1	350	50	50	0
A2	1	1	300	50	100	0
A3	1	1	350	50	0	50
A4	1	1	300	50	0	100

A1 and A3 are orange pempek formulas (from carrots) and green (from spinach) as for the A1 form can be pempek lenjer in the first organoleptic test, spinach small egg pempek (A3) while in the next research on the second organoleptic test A3 can be pempek telur small carrot and pempek lenjer from spinach (green). Formula A1 and A3 made from 100 gr carrots extracted 50 cc and 100 gr spinach extracted 50 cc (see table) mixed with fish and flour formula 1 to 1.

A2 and A4 are orange pempek formulas (from carrots) and green (from spinach) while the A2 form can be pempek lenjer in the first organoleptic test, spinach small egg pempek (A4) while in the next study on the second organoleptic test A4, can be pempek small egg carrot and pempek lenjer from spinach (green). Formula A2 and A4 are made from 200 gr carrots extracted 100 cc and 200 gr spinach extracted 100 cc (see table) mixed with fish and flour formula 1 to 1.

The mixture is kneaded until smooth (not sticky in the hand or container) and made lenjeran, criticism and other forms that are in accordance with our wishes. Next, lenjeran is boiled for 15 minutes at 1000C until it floats in the cooking water. Pempek then drained for 60 minutes, sliced, and performed organoleptic testing.

From the calculation of nutrient composition by using the orange and green pempek preliminary test formulations, new nutritional values of balanced nutrition were obtained so that every consumer would consume balanced nutrition when consuming orange and green pempek, it was hoped that health would be better.

5) *Observation*

Observations Organoleptic tests performed were hedonic quality tests and hedonic tests. The hedonic quality test is carried out on the taste, texture, and color of Pempek, and Aroma. While the hedonic test for overall acceptance. The organoleptic test involved somewhat trained panelists as many as 60 students from Unsri Palembang as panelists with the approval of Unsri Palembang's technical cleareance.

6) Population and Sample

a. Population

The population is all students of the Nutrition Study Program FKM and the Unsri Palembang FKM.

b. Sample

$$n = \frac{4\ p\ q}{d^2}$$

Lemeshow Formula Or Called Slovin Formula

Information :

p = proportion of students given orange and green pempek (8%)

q = 1-p (students not given orange and green pempek) 1-0.08

d = limit of error or absolute precision of 0.05.

B. Data Collection

1) Data Type Primary

Data which is the result of testing is obtained through direct observation and research activities. The primary data included in this study are organoleptic storage data and added value.

2) Data Collection Instrument

The instrument used to collect the data above is a questionnaire regarding the organoleptic test: the organoleptic tests carried out were proximate test, storage power test and nutrient survey calculation.

3) How to collect data

The way to collect data is to make observations, conduct interviews and fill out questionnaires (attached).

4) Organoleptic Test

The organoleptic test used is the test of preference. Receiving power (preference test) is basically an assessment that the panelists express spontaneous responses or without comparing with a standard sample, in the form of the likes and disadvantages of the material being tested. Preferred test assessments use untrained panelists who act as tools or instruments in giving an assessment of a product or testing the level of preference for using a product.

Panelists are students of the Unsri Palembang Nutrition Study

Program FKM not in sick condition, and know the characteristics

of Pempek Palembang in order to facilitate the testing process.

From the results of the organoleptic tests of the panelists, if a

hedonic test was obtained with a value above the average, it was

intended to know whether or not it was pleased with the nature of the material being tested. This test is generally used to assess the reaction of consumers (respondents) to a material. Therefore respondents should be taken in large numbers.

5) Nutritional Value

- Proximate Test is a method that does not describe the nutrient content in detail, but in the form of an estimated value (Soejono, 1990). How to collect data by laboratory tests to see energy, protein, fat, carbohydrates, water, potassium, calcium, megnesium, phosphorus, vit A, vit. C, B1, B2, B6.
- Nutri survey is a program that allows a nutrition professional to analyze the nutritional content of food and / or food recipes.

6) Storability

The procedure for arranging, storing, maintaining food security in quality and quantity of pempek in place of food using tools, temperature using aluminum foil wrap is equipped with labels and using the FIFO (First In First Out) system.

C. Data Analysis

1) Univariate Analysis

Analysis of data by organizing information that has been obtained through interviews and observations, filling in questionnaires from panelists, reading the whole information, making tabulations from panelists, grouping / combining data, making descriptions (Suwardji Edi et al, 2013).

Questionnaire data were analyzed by looking at univariate analysis. This is done to be able to find out how the description of the collected data is then grouped and analyzed with a frequency distribution table (Suwardji Edi et al, 2013).

2) Bivariate Analysis

Data obtained from univariate analysis were continued using Kruskall wallis at the level of 5%. From the results of analysis of variance, if it is significantly different, it is continued with a comparison test of the Duncan Multiple Range Test (DMRT) at the level of 5% using the SPSS computer program application.

Kruskall wallis: The null hypothesis of the Kruskall Wallis test is that data is simple random from the same population so that it has the same expectation of mean and variance.

D. Proximate Test

Test laboratory tests on the nutritional content of orange pempek and traditional greens and pempek: energy, protein, fat, carbohydrates, water, potassium (K), calcium (Ca), magnesium (Mg), iron (Fe), phosphorus (P), Vit A, B1, B2, B6, B12, C, D, E.

E. Save Power Test

That is pempek quality inspection for storage for 15-30 days at save temperature – 180c and using the FIFO system.

F. Nutri Survey

Calculation of nutrient content in formulas A0, A1, A2, A3 and A4 using the 2007 nutrient survey method.

III. RESULTS AND DISCUSSION

Making carrot and spinach juice and then mixing with plain pempek dough kneaded until smooth (not sticky in the hand or container) this is done twice on September 29 and October 06 2018 to get the orange and green pempek formula which will be used as organoleptic test material (hedonic test) / preference. Next, lenjer / pempek small eggs are boiled for 10 minutes at a temperature of 100

oc until lenjeran floats in the boiled water of Pempek and then sliced. Two pempek sari vegetable formulas were obtained 10% in carrots and spinach and 20% in carrots and spinach from the main ingredients.

With the number of panelists 60 on the 22nd, 23.24 October 2018 and respondents 120 29,30,31 October 2018, research was conducted. From the results of filling in questionnaires to the panelists and respondents, the tabulation for the Kruskall wallis test was carried out with a Free Sample Different K test on interval or ratio data that was not normally distributed or in ordinal data, using the crucifixal wallis test.

The Kruskall Wallis test is omnibus, meaning that it only measures differences or not between all groups. To determine where the difference is, between groups A and B, or between groups B and C, or between groups A and C, a post hoc test or further test is used. Further testing after the crucifixion wallis can use various types. In this case use dunn test because the SPSS version 23 program has been used automatically.

Different test is the comparison of data, in this case compared to 5 types or 5 variables, namely: Taste, Aroma, Color, Texture and preference. So the five variables become dependent variables which are tested for differences between treatment groups. Which one is treated is the type of pempek (pempek formula). K sample means the treatment group is more than 2. In this case there are 5 types of pempek (pempek formula) treatment, 5 types of pempek.

Free samples mean that between one group and another group are samples that are free or different from each other. In this case, for example, members of the type A pempek group differ from members of the Pempek type B group.

Below is the Kruskall Wallis Test to assess differences in each variable bound between 5 types of pempek.

Nonparametric Tests

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Rasa is the same across categories of Pempek.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.
2	The distribution of Aroma is the same across categories of Pempek.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.
3	The distribution of Warna is the same across categories of Pempek.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.
4	The distribution of Tekstur is the same across categories of Pempek.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.
5	The distribution of Kesukaan is the same across categories of Pempek.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

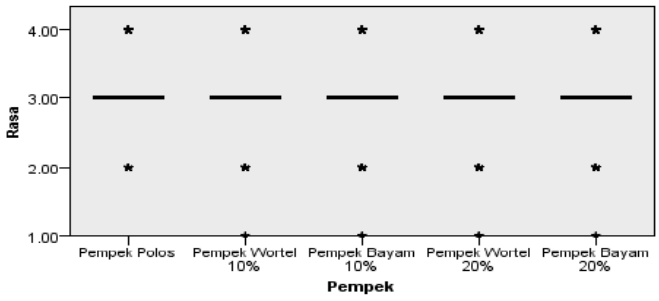
It can be seen from the table above that the value of p value (GIS) of all the kruskal wallis tests is <0.05 so all accept H1 or which means that all vars are bound there are significant differences between the types of pempek. More details are explained below.

A. Taste

To assess the difference in taste using the Kruskall Wallis Test, the hypothesis is first seen, is there a difference in taste between the 5 types of pempek?

The graph below assesses the tendency of selecting answers by each panelist in each group of 5 types of pempek. It appears that most choose answer 3 for taste in 5 types of pempek. But although it tends to be the same, it can still be assessed further whether there are differences in taste between the types of Pempek.

Independent-Samples Kruskal-Wallis Test

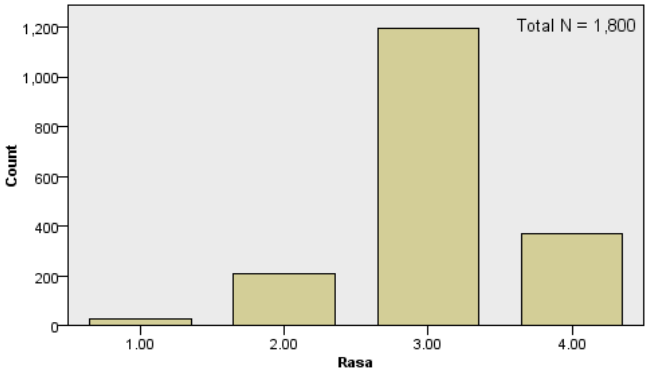


Total N	1,800
Test Statistic	20.026
Degrees of Freedom	4
Asymptotic Sig. (2-sided test)	.000

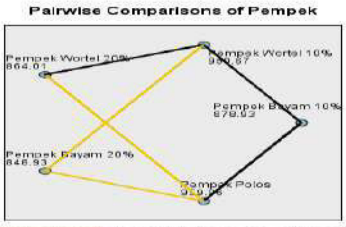
1. The test statistic is adjusted for ties.

1) *Are there differences in the taste between the types of pempek?*
The answer:
From a total of 1800 observations, the kruskall wallis value counted at 20.026 in the degree of freedom (DF) 4, the p value of the cruciferous wallis test was 0.000 <0.05 so that it accepted H1 or which means that there were significant differences in the types of pempek. To assess where the difference is, then use the dunn test below.
2) *The number of panelists who choose answers 1, 2, 3 or 4.*
Where it appears most of them choose answers 3 and a small number choose answers 1.

Categorical Field Information



From the results of the panelists' magnitude, it still needs to be tested krustall wallis where the differences in the taste of the 5 pempek formulas. From the dunn test the results are as follows:



Each node shows the sample average rank of Pempek.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
Pempek Bayam 20%-Pempek Wortel 20%	15.079	32.396	.465	.642	1.000
Pempek Bayam 20%-Pempek Bayam 10%	30.004	32.396	.926	.354	1.000
Pempek Bayam 20%-Pempek Wortel 10%	101.736	32.396	3.140	.002	.017
Pempek Bayam 20%-Pempek Polos	111.035	32.396	3.427	.001	.006
Pempek Wortel 20%-Pempek Bayam 10%	14.925	32.396	.461	.645	1.000
Pempek Wortel 20%-Pempek Wortel 10%	86.657	32.396	2.675	.007	.075
Pempek Wortel 20%-Pempek Polos	95.956	32.396	2.962	.003	.031
Pempek Bayam 10%-Pempek Wortel 10%	71.732	32.396	2.214	.027	.269
Pempek Bayam 10%-Pempek Polos	81.031	32.396	2.501	.012	.124
Pempek Wortel 10%-Pempek Polos	9.299	32.396	.287	.774	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

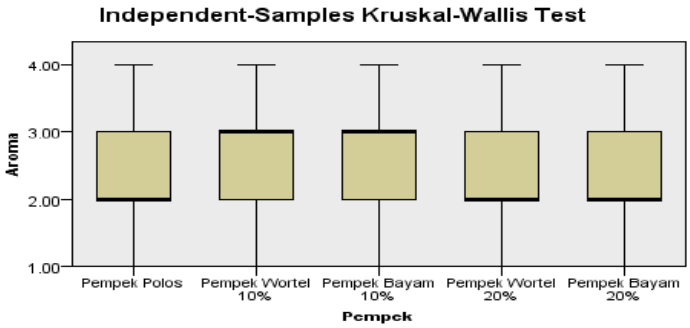
That the p value dunn test is of magnitude <0.05. The difference lies in:

- pempek spinach 20% with pempek carrot 10% (p-value 0.17)
- pempek spinach 20% with plain pempek (p-value 0,6)
- pempek carrot 20% with plain pempek (p-value 0.031).

B. Aroma

Wallis's Kruskall test for assessing AROMA differences. First seen the hypothesis is: Are there differences in AROMA between 5 types of pempek?

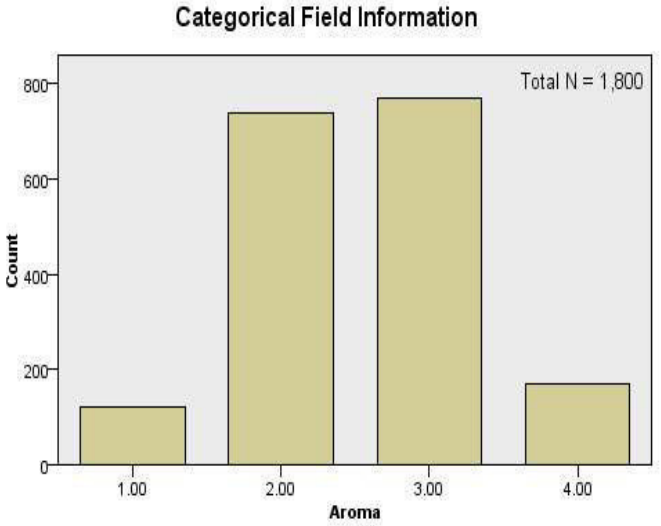
1) *The graph below assesses the tendency of selecting answers by each panelist in each type of pempek group.* It appears that most choose answers 2 and 3 for AROMA in all types of pempek. But even though it tends to be the same, it can still be assessed further whether there are differences in AROMA between 5 types of pempek.



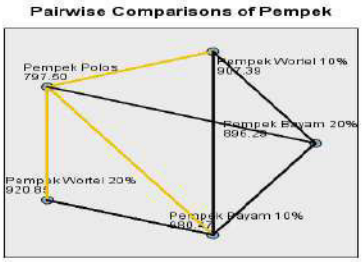
Total N	1,800
Test Statistic	27.355
Degrees of Freedom	4
Asymptotic Sig. (2-sided test)	.000

2) *Are there differences in AROMA between types of pempek?* The answer:
From a total of 1800 observations, the kruskall wallis value counted 27,355 in the degree of freedom (DF) 4, the p value of the cruciferous wallis test was 0,000 <0,05 so that it accepted H1 or which means there was a significant difference in AROMA between pempek types. To assess where the difference is, then use the dunn test below.

3) *Below shows the amount of panelists who choose answers 1, 2, 3 or 4.* Where it appears most of them choose answers 2 and 3 and a small number choose answers 1 and 4.



4) Tabel dunn test



Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
Pempek Polos-Pempek Bayam 20%	-98.782	35.751	-2.763	.006	.057
Pempek Polos-Pempek Wortel 10%	-109.890	35.751	-3.074	.002	.021
Pempek Polos-Pempek Wortel 20%	-123.346	35.751	-3.450	.001	.006
Pempek Polos-Pempek Bayam 10%	-182.951	35.751	-5.118	.000	.000
Pempek Bayam 20%-Pempek Wortel 10%	11.108	35.751	.311	.756	1.000
Pempek Bayam 20%-Pempek Wortel 20%	24.564	35.751	.687	.492	1.000
Pempek Bayam 20%-Pempek Bayam 10%	84.179	35.751	2.355	.019	.185
Pempek Wortel 10%-Pempek Wortel 20%	-13.456	35.751	-.376	.707	1.000
Pempek Wortel 10%-Pempek Bayam 10%	-73.071	35.751	-2.044	.041	.410
Pempek Wortel 20%-Pempek Bayam 10%	59.615	35.751	1.667	.095	.954

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

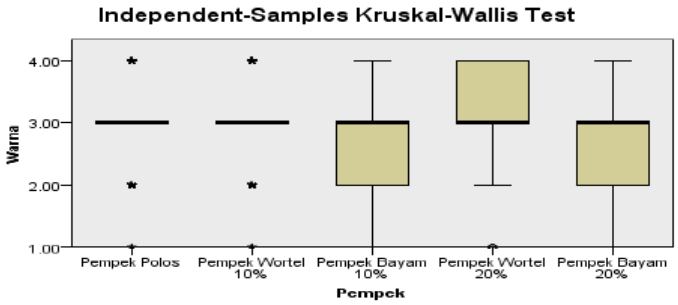
Based on the results of the Dunn test table above, it appears that the p value dunn test which is <0.05 is the difference between:

- plain pempek with carrot pempek 10% (0.021)
- plain pempek with carrot pempek 20% (0.06)
- plain pempek with spinach pempek 10% (0,00)

C. Color

Kruskall Wallis Test for assessing COLOR differences. First seen the hypothesis is: Are there different colors between the 5 types of pempek?

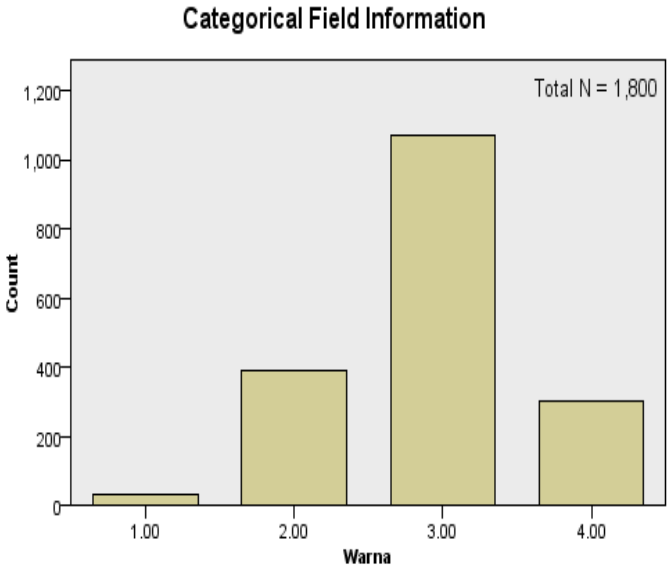
1) *The graph below assesses the tendency of selecting answers by each panelist in each type of pempek group*. It appears that most choose answer 3 for COLORS on the type of plain pempek and carrots 10%. While the 10% pempek spinach group and 20% pempek spinach chose 2 and 3. And in the 20% pempek carrot group many chose 3 and 4. To further assess whether there were differences in the color between the pempek types, the crucibal wallis test was used below.



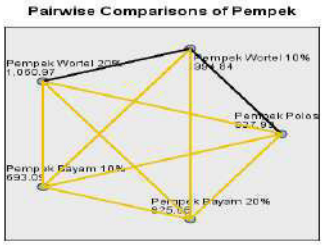
Total N	1,800
Test Statistic	144.701
Degrees of Freedom	4
Asymptotic Sig. (2-sided test)	.000

2) *Is there a color difference between the types of pempek*? The answer:
From a total of 1800 observations, the kruskall wallis value counted 144.701 in the degree of freedom (DF) 4, the p value of the cruciferous wallis test was 0,000 <0,05 so that it accepted H1 or which means there was a significant difference in color between pempek types. To assess where the difference is, then use the dunn test below.

3) *Below shows the size of the panelist who chooses answers 1, 2, 3 or 4*. Where it appears most of them choose answer 3 and a small part selects answer 1.



4) Tabel dunn test



Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
Pempek Bayam 10%-Pempek Bayam 20%	-132.684	34.078	-3.893	.000	.001
Pempek Bayam 10%-Pempek Polos	234.840	34.078	6.891	.000	.000
Pempek Bayam 10%-Pempek Wortel 10%	301.748	34.078	8.855	.000	.000
Pempek Bayam 10%-Pempek Wortel 20%	-367.875	34.078	-10.795	.000	.000
Pempek Bayam 20%-Pempek Polos	102.276	34.078	3.001	.003	.027
Pempek Bayam 20%-Pempek Wortel 10%	169.185	34.078	4.965	.000	.000
Pempek Bayam 20%-Pempek Wortel 20%	-235.311	34.078	-6.905	.000	.000
Pempek Polos-Pempek Wortel 10%	-66.908	34.078	-1.963	.050	.496
Pempek Polos-Pempek Wortel 20%	-133.035	34.078	-3.904	.000	.001
Pempek Wortel 10%-Pempek Wortel 20%	-66.126	34.078	-1.940	.052	.523

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

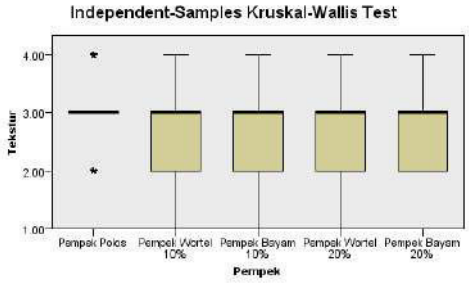
Based on the results of the Dunn test table above, it appears that the p value dunn test with a magnitude of <0.05 is almost all the differences except the difference between pempek plain with 10% carrot sticks and 10% carrot pempek with 20% carrot peel namely:

- Pempek spinach 10% and pempek spinach 20% (0.001)
- Pempek spinach 10% and plain pempek (0,000)
- Pempek spinach 10% and pempek carrot 10% (0,000)
- Pempek spinach 10% and carrot 20% (0,000)
- Pempek bayam 20% and plain pempek (0.027)
- Pempek spinach 20% and pempek carrot 10% (0,000)
- Pempek spinach 20% and pempek carrot 20% (0,000)
- Pempek plain and pempek carrot 20% (0.001)

D. Texture

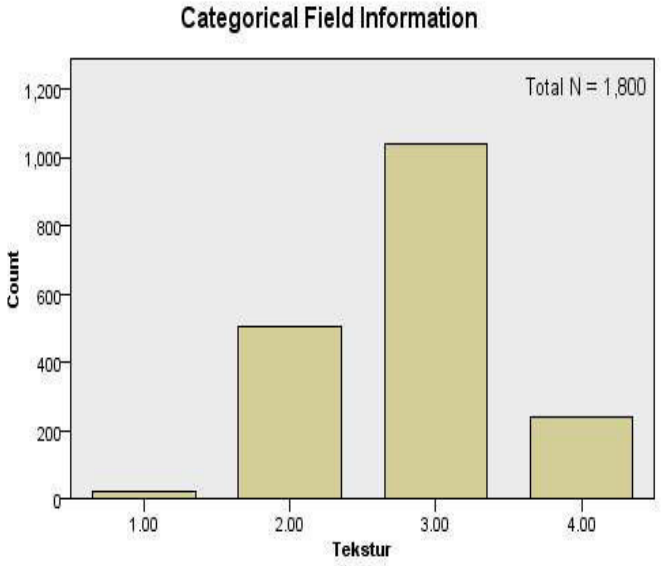
Wallis Kruskall Test to assess differences in TEXTURE. First seen the hypothesis is: Are there differences in TEXTURE between the 5 types of pempek?

1) *The graph below assesses the tendency of selecting answers by each panelist in each type of pempek group*. It appears that most choose answers 2 and 3 for TEXTURES for all types of pempek except for the plain pempek type, most of them choose only 3 answers. To further assess whether there is a difference in TEXTURE between the types of pempek, the crucibal wallis test is used below.

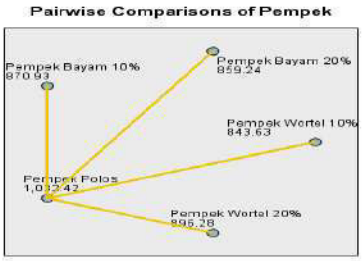


Total N	1,800
Test Statistic	39.488
Degrees of Freedom	4
Asymptotic Sig. (2-sided test)	.000

2) *Are there differences in TEXTURE between types of pempek?* The answer:
From a total of 1800 observations, the kruskall wallis value counted 39,488 in the degree of freedom (DF) 4, the p value of the cruciferous wallis test was 0,000 <0,05 so that it accepted H1 or which means that there was a significant difference between the types of pempek.
3) *Below shows the size of the panelist who chooses answers 1, 2, 3 or 4.* Where it appears most of them choose answer 3 and a small part selects answer 1.



4) Tabel dunn test



Each node shows the sample average rank of Pempek.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
Pempek Wortel 10%-Pempek Bayam 20%	-15.606	34.302	-.455	.649	1.000
Pempek Wortel 10%-Pempek Bayam 10%	-27.303	34.302	-.796	.426	1.000
Pempek Wortel 10%-Pempek Wortel 20%	-52.653	34.302	-1.535	.125	1.000
Pempek Wortel 10%-Pempek Polos	188.786	34.302	5.504	.000	.000
Pempek Bayam 20%-Pempek Bayam 10%	11.697	34.302	.341	.733	1.000
Pempek Bayam 20%-Pempek Wortel 20%	37.047	34.302	1.080	.280	1.000
Pempek Bayam 20%-Pempek Polos	173.181	34.302	5.049	.000	.000
Pempek Bayam 10%-Pempek Wortel 20%	-25.350	34.302	-.739	.460	1.000
Pempek Bayam 10%-Pempek Polos	161.483	34.302	4.708	.000	.000
Pempek Wortel 20%-Pempek Polos	136.133	34.302	3.969	.000	.001

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

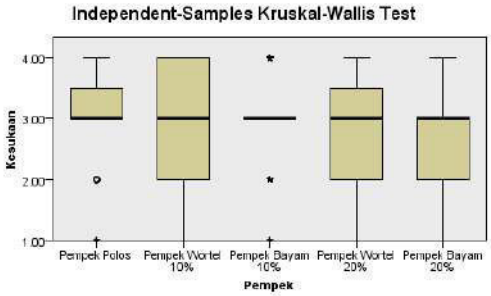
Based on the results of the Dunn test table above, it appears that the p value dunn test which is <0.05 is the difference, among others:

- Pempek carrot 10% with plain pempek (0,000)
- Pempek spinach 20% with plain pempek (0,000)
- 10% pempek spinach with plain pempek (0,000)
- Pempek carrot 20% with plain pempek (0.001)

E. Success

Kruskall Wallis Test to assess differences in OCCUPATIONALITY. First of all, the hypothesis is: Are there differences in SUCCESS between 5 types of pempek?

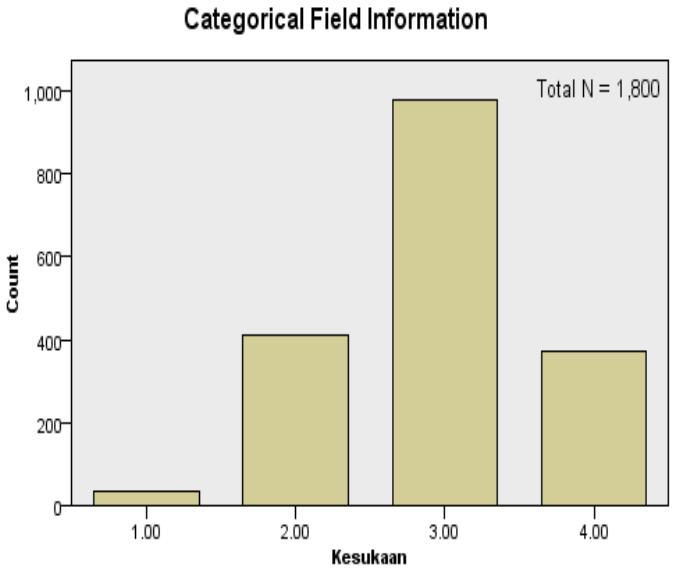
1) *The graph below assesses the tendency of selecting answers by each panelist in each type of pempek group.* It appears that in the plain pempek, most chose answer 3 for SUCCESS and a small number chose answer 4. Most of the 10% spinach group chose the answer 3. In pempek spinach 20% mostly chose answers 2 and 3. In the 10% portion of the carrot pempek the majority chose answers 2, 3 and 4. While for the carrot pempek 20% mostly chose answers 2 and 3 and a small number chose answer 4. To further assess whether there was a difference in SUCCESS between the types of pempek, the cruciferous wallis test below was used.



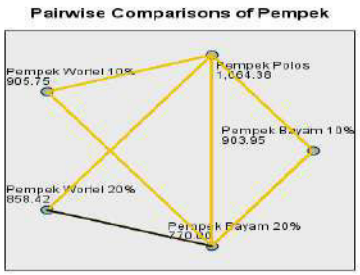
Total N	1,800
Test Statistic	74.433
Degrees of Freedom	4
Asymptotic Sig. (2-sided test)	.000

2) *Are there differences in SUCCESS between the types of pempek?*
The answer:
From a total of 1800 observations, the kruskall wallis value counted 74.433 in the degree of freedom (DF) 4, the p value of the cruciferous wallis test was 0,000 <0.05 so that it accepted H1 or which means there was a significant difference between the Pempek types. To assess where the difference is, then use the dunn test below.

3) *Below shows the size of the panelist who chooses answers 1, 2, 3 or 4.* Where it appears most of them choose answer 3 and a small part selects answer 1.



4) Tabel dunn test



Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
Pempek Bayam 20%-Pempek Wortel 20%	88.426	35.041	2.523	.012	.116
Pempek Bayam 20%-Pempek Bayam 10%	133.949	35.041	3.823	.000	.001
Pempek Bayam 20%-Pempek Wortel 10%	135.754	35.041	3.874	.000	.001
Pempek Bayam 20%-Pempek Polos	294.385	35.041	8.401	.000	.000
Pempek Wortel 20%-Pempek Bayam 10%	45.522	35.041	1.299	.194	1.000
Pempek Wortel 20%-Pempek Wortel 10%	47.328	35.041	1.351	.177	1.000
Pempek Wortel 20%-Pempek Polos	205.958	35.041	5.878	.000	.000
Pempek Bayam 10%-Pempek Wortel 10%	1.805	35.041	.052	.959	1.000
Pempek Bayam 10%-Pempek Polos	160.436	35.041	4.579	.000	.000
Pempek Wortel 10%-Pempek Polos	158.631	35.041	4.527	.000	.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Based on the results of the Dunn test table above, it appears that the p value dunn test which is <0.05 is the difference, among others:

- Pempek spinach 20% with spinach pempek 10% (0.001)
- pempek spinach 20% with 10% carrot paste (0.001)
- Pempek spinach 20% with plain pempek (0,000)
- Pempek carrot 20% with plain pempek (0,000)
- 10% pempek spinach with plain pempek (0,000)
- Pempek carrot 10% with plain pempek (0,000).

Whereas the value of p-value (GIS) in the crucibal wallis test for panelists <0.05 dependent variable had a significant difference (H1) between the types of pempek was taste (0.033), color (0,000) and preference (0,000) can be seen in the attachment of the panelist test results. Whereas the aroma and texture there is no difference between the types of pempek in a specific way (p-value, the cruciferous wallis test of 0.421> 0.05 means that H0 is accepted).

In the texture of 900 panelist observations, it was obtained that the p-value of the cruciferous wallis test was 0.483> 0.05 so that H0 was accepted ie there was no significant difference in texture between the types of pempek.

IV. CONCLUSION

There are significant difference between the 5 types of pempek including original pempek, pempek with 10% carrot, pempek with 20% carrot, pempek with 10% spinach, and pempek with 20% spinach. The difference are from the taste, color, and preference. Meanwhile, the texture and the aroma has no significant difference.

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