

Enhancing Filipino Food Using the Old and Traditional Native Equipment “Luto sa Palayok”

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Abstract - *The purpose of this study is to enhance knowledge in native equipment in the Philippines specially in using clay pot and prove its effectiveness. The study conducted in the selected restaurants. The aimed to determine the factors affecting cooking with the use of clay pot, the health and nutrition that can be obtained in clay pot, the quality of the food that they are serving and the advantages of using clay pot in cooking. Descriptive research design was used in the study and survey was distributed to the participants of the selected restaurants in different places. The result of the study revealed that costumers of each selected restaurant were highly aware about the nutrients that clay pot can give to the quality of food in cooking with clay pots, the origin and history of palayok, and the different advantages and disadvantages of clay pot in cooking. Also, most of the challenges encountered by the researchers in this study was finding a restaurant that cooks in clay pots and only finds those serving in clay pot only. Hence, it can be concluded that most of the costumers in selected restaurants are highly aware about the different usage of clay pot and the effectiveness of clay pot in cooking. The researchers are suggesting to each selected restaurant to be aware about the importance and health benefits of clay pot and encouraging the management of each selected restaurant to use clay pot in cooking.*

Keywords: *Effectiveness, Advantages and disadvantages, Health, Nutrition, Origin*

INTRODUCTION

Pottery has been known for being the oldest and useful handicraft created by humans. Pottery is made out of clay which is hardened by heat which has been around for a long time because of the need of containers, cooking equipment and plates or bowls to eat. In prehistoric times, it was said that probably people carry water using woven baskets lined with river

clay and after the water was poured out of the container then the clay layer will dry. The shape would shrink and detached from the sides of the basket due to the loss of moisture, then when the clay is already in shaped, separated from the basket, and dried under the sun on to hot sand, it will cause to maintain the basket's form. With these, ancient people discovered that they could use the heat and clay to produce pottery that can be used as sturdy containers to make and store food.

The earliest recorded evidence of clay usage was way back to Late Paleolithic period in East Asia before it eventually spread to the Middle East and Mediterranean basin during Neolithic period, thousands of years later. The oldest fragments of pottery were discovered to be manufactured in both China and Japan dated to about 14,000 BC, long before they started farming. Ancient Greek uses pottery as a highly valued form and decorations where they portray their daily lives and the stories of their Gods. German potters started to produce stoneware around 13th century. This pottery was made with finer clays and fired at a higher temperature than earthenware. Late in 16th century pottery was brought from China to Acapulco to Vera Cruz, Mexico, to Europe through a trade route in Manila.

Philippine pottery dated back as early as 6000 BC when light and heat was discovered and became available any time of the day. It became the implication that fire had been fully utilized. Our ancestors started making pottery before their Cambodian neighbors and at about the same time as the Thai's as part of what appear to be widespread long-term development of pottery technology. As foreign exchange increased, Filipinos discovered that kiln-fired and glazed ceramics from China and other Asian country like Thailand, Vietnam and India was more waterproof and durable. They also exhibit the versatility of the clay pots and showed us its other uses. Chinese use to make plates,

bowls, cups, bottles, and displays. While Thai's and Vietnamese clay pots are mainly glazed and painted for storing rice and liquids. There are also earthen jars that are brought by the Spaniards which were used to store olives, oil, and wines- and the Martaban jars that were brought by the Arabs they used as containers of water and as storage jars for trade good and staples. Filipinos learned and adopted the making process of these countries, mostly of China's and started using pottery in different way then became a part of Filipinos daily lives. However, pottery making continued to develop in certain areas, just as the burnay unglazed clay pottery of Vigan.

Palayok is made of clay that moulded by hand or no moulds used. Palayok is a Tagalog word; in other parts of the country, especially in the Visayas, it is called *kulon*; the smaller-sized of *kulon* is called *anglit*.

There are a lot of local potteries that are still making clay pot or palayok, and aside from palayok, they are also offering different kind of pottery item that can be used in cooking and many different ways.

They all have different uses of pottery products and different ways of making pottery products but only have the same similarities, all these local potteries are offering workshop in making different pottery products and hoping that pottery industry will grow again.

As technology advances, it seems as if crafts such as pottery would become one of the first endangered arts. After all, why spend more for handmade, when a machine can do just as good a job out of it? But the time for pottery is far from over.

The researchers were able to do an interview with a cooking expert named Aching Lillian residing in Pampanga City. According to her, most of their traditional recipes were cooked in palayok due to its distinct taste and no chemical reactions coming from cast iron. The original recipes of Kapampangan are all cooked in palayok and luto sa kahoy. Atching Lillian also quoted in her published book "Atching Lillian's Heirlooms Recipes", "I am very fortunate to have been born into a family that has a high regard for culture and a hereditary passion for cooking." The best pinaupong manok was cooked in palayok according to Natividad Reyes.

Palayok is still being used in the present but only few still uses it. Usually palayok is used in restaurants who serve Filipino foods. In the city, palayok is used for serving only and not as a cooking instruments, but in some provinces, it is still being used usually to some villagers living in the high end of the mountains due to lack of resources. Palayok is not just used for cooking but also it used for a tradition game in the Philippines

which is called "Hampas Palayok", this is just one of the few uses of palayok in the present but as years pass by even the traditional game is being forgotten.

Pottery is one of the most useful arts and crafts. Pottery can be helpful, meaning it can be used for everyday or for decorative purposes. It has been around since the earlier times because of the need to have plates and bowls to eat. Another usage was containers for storage of food, liquid, and dry goods. Most palayok (clay pots) were made and used for daily cooking activities, while small pots with incision might have been intended as grave furniture. Other usage includes pouring vessels, jugs, dishes, vases, and native dippers (tabo) others were made as ornamental like goblets, footed dishes, and globular bottles.

Palayok is earthenware that allows the steam for cooking to evaporate from its pores. Food cooked in this takes a lot of time before it loses its cooking juices which allows food to be cooked thoroughly. It has been a huge part of native cooking in the Philippines, dishes like Kare-kare, Bulalo, Sinigang, and other lutong bahay were created or improved using the Palayok.

Being knowledgeable in one's native equipment will give you wider understanding on how everything started and how thankful we are in our ancestors for inventing such instruments for cooking. If it weren't for them, we have nothing to enhance and to start our modern equipment. All of our modern equipment came from our old and native equipment.

METHODS

Descriptive type of research was utilized in the study using 150 respondents from five (5) selected restaurants that use palayok for cooking. The paper developed an instrument which was validated by the three experts in hospitality and tested its reliability with cronbach's alpha value of 0.812 which denotes that the instruments has a good internal consistency. The respondents sought the permission of the restaurant owners. The respondents were informed regarding the purpose of the study and only those respondents who are willing participate were given the questionnaire. They were not pressured to answer the questionnaire and if they were also given the option to stop anytime if they feel not comfortable answering the statements in the instrument. Frequency count, percentage and weighted mean are the statistical treatment used to analyze the result of the data gathered. After giving the questionnaires to the participants the researcher gathered the data and analyzed the gathered information, next in the process was the interpreted

collected data which was made into a conclusion and recommendation.

The given scale was used to interpret the result of the data gathered: 4.20-5.00: Highly Aware (HA); 3.40-4.19: Most Aware (MA); 2.60-3.39: Aware (A); 1.80-2.59 Somewhat Aware (SA); 1.00-1.79: Not Aware (NA).

RESULTS AND DISCUSSION

The profiles of the customers that is covered in this study were age, sex and educational attainment. Tables 1 to 3 present the profile of the customers.

Table 1 shows the frequency and percentage distribution of the respondents as to their age. Among the respondents on restaurant A, age 20 and below got a frequency of 5 with a percentage of 16.7, age 21-30 got the frequency of 9 with a percentage of 30.0, age 31-40 got the frequency of 5 with a percentage of 16.7, age 41-50 got the frequency of 6 with the percentage of 20.0, age 51-60 got the frequency of 2 with a percentage of 6.7 while the respondents age 61 and above got the frequency of 3 with a percentage of 10.0

Based on the table below, majority of the respondents are 21-30 years old while the over 61 age bracket has the least number of respondents.

According to Oppenheimer [1], the Clay Mystique, Paula wolfert has been writing about her obsession with clay pots for 40 years as per Paula "I'm not sure how it happened that I became a clay pot 'junkie.' At age 19, I bought my first, a potbellied tripiere, used for cooking tripe..." so it means that some people started knowing about clay pot at an early age which explains that most

of the respondents in ages 21-30 know or are aware of clay pots.

Table 2 shows the frequency and percentage distribution of the respondents as to their age. On Rest A, respondents that got a frequency of 14 with a percentage of 46.7% are male and a frequency of 16 with a percentage 53.3% are female, in Rest B, the respondents that got a frequency of 7 with a percentage 23.3% are male and with a frequency of 23 with a percentage 76.7% are female, in Rest C, the respondents that got a frequency of 17 with a percentage 56.7% are male and with a frequency of 13 with a percentage of 43.3% are female, in Rest D, with the frequency of 12 with a percentage of 40% are male and a frequency 18 with a percentage 60% are female and lastly in Rest E, both male and female got frequency of 15 with a percentage of 50%. The total percentage of male is 43.34% while 56.66% are females. Based on the table below, majority of the respondents are female while male bracket has the least number of respondents.

From the article in Multimedia Archives eServices [2] The Skill of Traditional Clay Pot Making in Kgatlang District, "Earthenware pottery-making skills are practised among the Bakgatla ba Kgafela community in south-eastern Botswana. The women potters use..." women in botswana use varipus material in making clay pots, the article shows that way back or even in different countries women are more aware regarding pottery and especially the clay pots.

Table 1. Distribution of the Customers according to Age

Age	Rest A		Rest B		Rest C		Rest D		Rest E		TP
	F*	%	F*	%	F*	%	F*	%	F*	%	
20 & below	5	16.7	13	43.4	2	6.7	12	40.0	3	10.0	23.34
21-30	9	30.0	8	26.7	7	23.3	9	40.0	5	16.7	25.34
31-40	5	16.7	4	13.3	7	23.3	3	10.0	5	16.7	16.0
41-50	6	20.0	2	6.7	2	6.7	2	6.7	7	23.3	12.68
51-60	2	6.7	2	6.7	7	23.3	2	6.7	7	23.3	13.34
Over 61	3	10.0	1	3.3	5	16.7	2	6.7	3	10.0	9.34
Total	30	100.0	30	100.0	30	100.0	30	100.0	30	100.0	100.0

Table 2. Distribution of the respondents according to Sex

S	Rest A		Rest B		Rest C		Rest D		Rest E		TP
	F*	%	F*	%	F*	%	F*	%	F*	%	
M	14	46.7	7	23.3	17	56.7	12	40.0	15	50.0	43.34
F	16	53.3	23	76.7	13	43.3	18	60.0	15	50.0	56.66
T	30	100	30	100	30	100	30	100	30	100	100

Table 3. Distribution of the respondents according to Educational Attainment

Age	Rest A		Rest B		Rest C		Rest D		Rest E		TP
	F*	%	F*	%	F*	%	F*	%	F*	%	
20 & below	5	16.7	13	43.4	2	6.7	12	40.0	3	10.0	23.34
21-30	9	30.0	8	26.7	7	23.3	9	40.0	5	16.7	25.34
31-40	5	16.7	4	13.3	7	23.3	3	10.0	5	16.7	16.0
41-50	6	20.0	2	6.7	2	6.7	2	6.7	7	23.3	12.68
51-60	2	6.7	2	6.7	7	23.3	2	6.7	7	23.3	13.34
Over 61	3	10.0	1	3.3	5	16.7	2	6.7	3	10.0	9.34
Total	30	100.0	30	100.0	30	100.0	30	100.0	30	100.0	100.0

Table 3 presents the frequency and percentage distribution of the respondents as to their educational attainment. In Primary Level, Restaurant A, C, D and E got a frequency of 0 with a percentage of 0% while only Restaurant B got a frequency of 2 with a percentage of 6.7%. in Secondary level, respondents in Rest A got the frequency of 0 with a percentage of 0%, Restaurant B got a frequency of 2 with a percentage of 6.7%, Restaurant C got a frequency of 2 with a percentage of 6.7%, Restaurant D got a frequency of 4 with a percentage of 13.3 and Restaurant E got a frequency of 4 with a percentage of 6.7%.

In College level, Restaurant A got a frequency of 6 with a percentage of 20%, restaurant B got a frequency of 11 with a percentage of 36.7%, Restaurant C got a frequency of 4 with a percentage of 13.3%, Restaurant D got a frequency of 19 with a percentage of 63.3% and Restaurant E got a frequency of 3 with a percentage of 10%. Next are the frequency and percentage of respondents who are college graduate.

Restaurant A got the frequency of 18 with a percentage of 60%, Rest. B got the frequency of 3 with a percentage of 10%, Rest. C got the frequency of 8 with a percentage of 26.7%, Rest. D got the frequency of 2 with a percentage of 6.7% and Rest. E got the

frequency of 10 with a percentage of 33.3%. Last is the respondents that are employed or working, Restaurant A got the frequency of 6 with a percentage of 20%, Restaurant B got the frequency of 12 with the percentage of 40%, Restaurant C got the frequency of 16 with a percentage of 53.3%, Restaurant D got the frequency of 5 with a percentage of 16.7%, Restaurant E got the frequency of 15 with a percentage of 50%.

Based on the table above, majority of the respondents are working while primary level bracket has the least percentage of respondents.

According to Philippine Statistics Authority, Employment Situation [3] last 2017, 15 years ago the total population was estimated to 70.2 million wherein the number of persons who were in the labor force was reported at 42.5 million. This placed the labor force participation rate at 60.6 percent, which means that six out of ten number of populations were in labor.

Table 4 shows the level of awareness of the respondents in the factors affecting cooking with the use of palayok. This factor was divided into 4 sub categories which are health and nutrition, quality of food, cultural and ethnicity and the benefits of using clay pot in cooking.

Table 4. Mean Response on the level of Awareness on the Factors affecting cooking with the use of palayok

Health and Nutrition	Rest A		Rest B		Rest C		Rest D		Rest E		GM
	M	I	M	I	M	I	M	I	M	I	
1. Claypots are safe to use in cooking	4.30	HA	4.83	HA	3.53	HA	4.83	HA	3.27	A	4.152
2. Claypots contains many important nutrients which are extremely beneficial to our body	3.9	MA	4.43	HA	3.70	MA	4.27	HA	3.40	MA	3.94
3. Clay can neutralize the acidity which makes it easier for us to digest.	3.9	MA	4.23	HA	3.70	MA	4.57	HA	3.53	MA	3.986
4. Food cooked in clay pots are much lower fat than food prepared in any other method.	3.87	MA	3.87	MA	3.60	MA	4.03	MA	3.53	MA	3.78
Total Mean	3.99	MA	4.34	HA	3.63	MA	4.43	HA	3.43	MA	3.96

Table 4 (cont). Mean Response on the level of Awareness on the Factors affecting cooking with the use of palayok

Health and Nutrition	Rest A		Rest B		Rest C		Rest D		Rest E		GM
	M	I	M	I	M	I	M	I	M	I	
Quality of Food											
1. Roast and stews are cooked well in clay pots.	3.90	MA	4.07	MA	3.37	A	4.73	HA	3.13	A	3.84
2. Naturally acidic food will acquire some natural sweetness.	3.70	MA	4.20	HA	3.60	MA	3.93	MA	3.33	A	3.75
3. Gives food an earthy taste and aroma.	4.17	MA	3.83	MA	3.57	MA	4.63	HA	3.23	A	3.89
4. Clay pots extends shelf life of food or prevent it from spoiling immediately	4.23	HA	4.23	HA	3.67	MA	4.17	MA	3.30	A	3.92
5. Helps in containing the juices of food and its moisture	4.17	MA	4.13	MA	3.63	MA	4.53	HA	3.27	A	3.946
Total Mean	4.03	MA	4.09	MA	3.57	MA	4.40	HA	3.25	A	3.87
Cultural and Ethnicity											
1. Pottery has been known for being the oldest and useful handicraft created by humans.	4.43	HA	4.50	HA	2.97	A	4.97	HA	2.73	A	3.92
2. Palayok is still being used in the present but only few still uses it.	4.47	HA	3.93	MA	3.27	A	4.10	MA	2.93	A	3.74
3. Palayok is made of clay that moulded by hand or no moulds used.	4.20	HA	4.00	MA	3.07	A	4.37	HA	2.87	A	3.702
4. Pottery in the Philippines became the implication that fire has been utilized.	3.80	MA	3.60	MA	3.03	A	4.10	MA	2.80	A	3.53
5. Clay pots in the Philippines was also used in religious rituals or ceremonies.	3.93	MA	3.80	MA	3.03	A	4.37	HA	2.83	A	3.59
6. Palayok is a Tagalog word; in other parts of the country, especially in the Visayas, it is called kulon; the smaller-sized of kulon is called anglit.	4.07	MA	3.90	MA	3.10	A	4.23	HA	2.87	A	3.63
Total Mean	4.15	MA	3.95	MA	3.08	A	4.36	HA	2.84	A	3.69
Benefits of using Clay pot in cooking											
1. Clay pots prevents harmful chemicals that can lead into unwanted food taste.	4.13	MA	4.33	HA	3.10	A	4.00	HA	3.23	A	3.910
2. Clay pots porous surface can add to the rich, intense flavour of the food.	4.07	MA	4.37	HA	3.37	A	4.13	MA	3.43	MA	3.874
3. Clay pots can help the foods to retain all their vitamins and nutrients because they create a closed cooking environment.	4.47	HA	4.27	HA	3.37	A	4.40	HA	3.43	MA	3.988
4. Clay pots keeps bacteria away or prevent it from going to the food.	4.17	MA	4.20	HA	3.57	MA	3.93	MA	3.43	MA	3.86
Total Mean	4.21	HA	4.29	HA	3.35	A	4.32	HA	3.38	A	3.91
Grand Mean										3.86	

First category of factors is the health and nutrition, when it comes to level of awareness of clay pots being safe in using, Rest A has a mean of 4.30 which is Highly aware, Rest B is 4.83 which is highly aware, Rest C has a mean of 3.53 which is most aware, Rest D has a mean of 4.83 which is highly aware, and Rest E has a mean of 3.27 which is aware.

When it comes to level of awareness if clay pots contain many important nutrients which are extremely beneficial to our body, Rest A has a mean of 3.90 which is most aware, Rest B is 4.43 which is highly aware, Rest C has a mean of 3.70 which is most aware, Rest D has a mean of 4.27 which is highly aware, and Rest E has a mean of 3.40 which is most aware. When it comes to level of awareness if clay can neutralize the acidity which makes it easier for us to digest, Rest A has a mean of 3.90 which is most aware, Rest B is 4.23 which is highly aware, Rest C has a mean of 3.70 which is most aware, Rest D has a mean of 4.57 which is highly aware, and Rest E has a mean of 3.53 which is most aware.

When it comes to level of awareness if food cooked in clay pots are much lower fat than food prepared in any other method, Rest A has a mean of 3.87 which is most aware, Rest B is 3.87 which is most aware, Rest C has a mean of 3.60 which is most aware, Rest D has a mean of 4.03 which is most aware, and Rest E has a mean of 3.53 which is most aware. Overall, the respondents from Rest B has the highest awareness with a mean of 4.341 and Rest E has the lowest awareness with a mean of 3.433.

The next sub factor is the level of awareness when it comes to the quality of food when using palayok. First question is that roast and stews are cooked well in clay pots, as per restaurant A the mean to the question is 3.90 which has an interpretation of most aware, while restaurant B has a mean of 4.07 or most aware, Restaurant C has 3.37 or aware and Rest D, is 4.73 or highly aware and for restaurant E, the mean is 3.13 with an interpretation of aware.

Next question is that naturally acidic food will acquire some natural sweetness, level of awareness of Rest A is 3.70 which is most of the respondents are most aware and for the Rest B the respondents are Highly aware of with a mean of 4.20 and in restaurant C, the respondents are most aware to the question with the mean of 3.60 while in the respondents of restaurant D the respondents are most aware with a mean of 3.93 and lastly in restaurant E most response of the respondents are aware of the question with a mean of 3.33.

The third question in the category of quality food us that cooking in clay pots gives food an earthy taste and aroma and the respond of restaurant A is most aware with a mean of 4.17 while in rest B the response is most aware with a mean of 3.83 and in restaurant c the response is most aware also but with a mean of 3.57 and in restaurant d the response is highly aware with a mean of 4.63 and lastly the respond of restaurant E is aware with a mean of 3.23. Restaurant D has the highest awareness when it comes to knowing that the clay pot gives food an earthy taste and aroma while restaurants e has the lowest mean.

The next question is that clay pots extends shelf life of food or prevent it from spoiling immediately, when it's come to this question, Restaurant A and B has the highest awareness of knowing how clay pots extends it shelf life with a mean of 4.23 while in Restaurant E has the lowest awareness that has a mean of 3.30. last question of that clay pots helps in containing the juices of food and its moisture which Restaurant D the highest mean of has 4.53 while the lowest is Restaurant E with a mean of 3.27 which leads that the respondents in restaurant D has the more knowledge when it comes to level of awareness when it come to the quality of food when using clay pot.

The next sub factor is the level of awareness when it comes to Cultural and Ethnicity of palayok. First is that pottery has been known for being the oldest and useful handicraft created by humans, as per restaurant A the mean to the question is 4.43 which has an interpretation of highly aware, while restaurant B has a mean of 4.50 or highly aware, Restaurant C has 2.97 or aware and Rest D, is 4.97 or highly aware and for restaurant E, the mean is 2.73 with an interpretation of aware. Second is that palayok is still being used in the present but only few still uses it, as per restaurant A the mean to the question is 4.47 which has an interpretation of highly aware, while restaurant B has a mean of 3.93 or most aware, Restaurant C has 3.27 or aware and Rest D, is 4.10 or most aware and for restaurant E, the mean is 2.93 with an interpretation of aware.

Third is that palayok is made of clay that molded by hand or no molds used, as per restaurant A the mean to the question is 4.20 which has an interpretation of highly aware, while restaurant B has a mean of 4.00 or most aware, Restaurant C has 3.03 or aware and Rest D, is 4.37 or most aware and for restaurant E, the mean is 2.87 with an interpretation of aware.

Fourth is that pottery in the Philippines became the implication that fire has been utilized, as per restaurant A the mean to the question is 3.80 which has an interpretation of most aware, while restaurant B has a

mean of 3.60 or most aware, Restaurant C has 3.03 or aware and Rest D, is 4.10 or most aware and for restaurant E, the mean is 2.80 with an interpretation of aware.

Fifth is that clay pots in the Philippines was also used in religion rituals or ceremonies, as per restaurant A the mean to the question is 3.93 which has an interpretation of most aware, while restaurant B has a mean of 3.80 or most aware, Restaurant C has 3.03 or aware and Rest D, is 4.37 or highly aware and for restaurant E, the mean is 2.83 with an interpretation of aware.

Sixth is that Palayok is a tagalog word; in other parts of the county, especially in the Visayas; it is called *kulon*; the smaller-sized of *kulon* is called *anglit*, as per restaurant A the mean to the question is 4.07 which has an interpretation of most aware, while restaurant B has a mean of 3.90 or most aware, Restaurant C has 3.10 or aware and Rest D, is 4.23 or highly aware and for restaurant E, the mean is 2.87 with an interpretation of aware.

Overall, the respondents in Rest D has the highest awareness about the Cultural and Ethnicity of clay pots with a mean of 4.3556 and Rest E has the lowest awareness with a mean of 2.8389.

The last sub factor is the level of awareness when it comes to benefits of using clay pots in cooking. First is that clay pots prevents harmful chemicals that can lead into unwanted food taste, as per restaurant A the mean to the question is 4.14 which has an interpretation of most aware, while restaurant B has a mean of 4.33 or highly aware, Restaurant C has 3.10 or aware and Rest D, is 4.80 or highly aware and for restaurant E, the mean is 3.23 with an interpretation of aware.

Second is that clay pots porous surface can add to the rich, intense flavor of the food, , as per restaurant A the mean to the question is 4.07 which has an interpretation of most aware, while restaurant B has a mean of 4.37 or highly aware, Restaurant C has 3.10 or aware and Rest D, is 4.13 or most aware and for restaurant E, the mean is 3.43 with an interpretation of most aware.

Third is that clay pots can help the foods to retain all their vitamins and nutrients because they create a closed cooking environment, as per restaurant A the mean to the question is 4.47 which has an interpretation of highly aware, while restaurant B has a mean of 4.27 or highly aware, Restaurant C has 3.37 or aware and Rest D, is 4.40 or highly aware and for restaurant E, the mean is 3.43 with an interpretation of most aware.

Fourth is that clay pots keeps bacteria away or prevent it from going to the food, as per restaurant A

the mean to the question is 4.17 which has an interpretation of most aware, while restaurant B has a mean of 4.20 or highly aware, Restaurant C has 3.57 or most aware and Rest D, is 3.93 or most aware and for restaurant E, the mean is 3.43 with an interpretation of most aware. Overall, rest D has the highest awareness about the benefits of using clay pot in cooking with a mean of 4.3167 and rest C has the lowest awareness with a mean of 3.3500.

According to Ayurveda Specialist at Dr. Vaidya's, Dr. Surya Bhagwati [4], *"cooking in a clay pot not only has a variety of health benefits but also makes for an easier cooking process and in the end, a more flavorful and nutritious dish. Due to its numerous health benefits, Ayurveda suggests cooking in a clay pot. Cooking in a clay pot is much better than cooking in a normal utensil, not just for its various health benefits, but also makes it much simpler to cook and improves the quality of the food at the end. The porosity and natural insulation properties of clay causes heat and moisture to circulate throughout clay pots. This makes cooking in a clay pot a much slower process but has added benefit of preventing amateur cooks from burning their dishes. More importantly, this causes the moisture and nutrient loss while cooking in clay pots to be much lower compared to cooking in metal or enamel lined utensils."* This shows that specialist like Dr. Surya are very much aware of the factors affecting cooking with the use of clay pot, he did not just talk about the benefits of it but also how healthy and nutritious food can get when using clay pot also it talks about the quality of the food. As per the culture and ethnicity of clay pots according to the DLSU Research Congress 2016 [5], *in the Philippines pots are built in two ways: from the base up or from the rim down. But when Chinese traders started trading in the Philippines their beliefs, culture and art was introduced. The Filipinos adapted it which then became part of their lives (their culture, art, beliefs, etc.). One of it is the pottery, the techniques of how Chinese create a pot, porcelain; everything was introduced and taught to Filipinos. It spread throughout the Philippine islands."* In this study it shows that Filipinos are highly aware of the culture and how pottery started. Another study is according to The Christensen Fund [6], *"The clay pot (or gur) has long been a central feature of the cultures of Papua New Guinea's Markham Valley, such as that of the Adzera people. These pots are superior for cooking bananas, a staple of traditional diets in this area and a central element of life in the seasonal savannah environment of the Valley."* Clay pot has

been the central feature of some cultures in a reason that it helps for their diet and save money instead of buying

According to Manores, A. [7], Pottery rise among one of the most ancient arts. The Manunggul Jar, excavated in Palawan circa 8th century BC, shows a different artistic level which the art attained in ancient times. This large burial jar has a cover showing two men rowing a boat, indicating the belief among early Filipinos in an afterlife across a fictitious body of water. Around its body is an engraved design of curved lines and dots. Indeed, exact examples of early Philippine pottery display a wide variety of shape and decorative skills, including incision, stripping, applique, openwork, and impression by rope and mat. Designs are often geometric and include stylized nature motifs. In later year pottery would become more and more associated with objects for daily use, such as the *palayok* (clay pot) for cooking, and the *bangaand tapayan*(clay pot) for storing. In the Ilocos, the making of *burnay* pottery continues as a lively tradition.

Table 5 shows the mean response of the customers of each restaurant on the level of awareness regarding on the advantages of using *palayok* in cooking. In the first advantage of clay pots which helps meat to be moist and tender, Restaurant A respondents are most aware and has a mean of 3.83, respondents from Restaurant B are highly aware with a mean of 4.70, Restaurant C with respondents are aware and has a mean of 3.00, respondents from Restaurant D are highly aware has a mean of 4.93 and Restaurant E respondents are aware with a mean of 3.07.

Based on the table below, the respondents from restaurant D has the highest level of awareness and Restaurant E has the lowest awareness that clay pots

help meat to be moist and tender. According to Romertopf web site, “As a porous material, the clay in a pot that has been saturated with water slowly releases steam from its pores during the cooking process. Juices released by the food as it cooks cannot escape from the pot. This seals in flavor and keeps food from drying out, without the need to add extra fats or liquids. Along with the flavor, essential nutrients and vitamins are retained in the food.”

Second advantage is that usage of oil and fats will lessen in cooking with clay pots. The respondents from Restaurant A is most aware and has a mean of 3.83, respondents from Restaurant B are highly aware with a mean of 4.33, Restaurant C respondents are aware and has a mean of 3.30, respondents from Restaurant D are highly aware and has a mean of 4.47 and Restaurant E respondents are aware with a mean of 3.30.

Based on the table below, the respondents from restaurant D has the highest level of awareness while Restaurants C and E has the lowest awareness that the usage of oil and fats will be lessen in cooking with clay pots. According to Rana, S. [8], “Due to its heat resistance and slow cooking, the food retains all its oils and moisture; therefore, you wouldn't require extra oil and fat for providing moisture to your food”.

Third advantage is that clay pots are attractive enough to be used in both cooking and serving, Restaurant A respondents are highly aware and has a mean of 4.40, respondents from Restaurant B are highly aware with a mean of 4.30, Restaurant C with respondents are aware and has a mean of 3.20, respondents from Restaurant D are highly aware has a mean of 4.50 and Restaurant E respondents are most aware with a mean of 3.40.

Table 5. Mean Response on the Level of Awareness on the Advantages of using Palayok in cooking.

	Rest A		Rest B		Rest C		Rest D		Rest E		GM
	M	I	M	I	M	I	M	I	M	I	
1. Clay pots helps meat to be moist and tender	3.83	MA	4.70	HA	3.00	A	4.93	HA	3.07	A	3.91
2. Usage of oil and fats will be lessened un cooking with clay pots	3.83	MA	4.33	HA	3.30	A	4.47	HA	3.30	A	3.85
3. Clay pots are attractive enough to be used in both cooking and serving	4.40	HA	4.30	HA	3.20	A	4.50	HA	3.40	MA	3.96
4. Clay pots prevents the potential health risks from metal cooking equipment	4.03	MA	4.37	HA	3.33	A	4.23	HA	3.40	MA	3.87
5. Clay pots can be long lasting if properly taken care of	4.07	MA	4.23	HA	3.23	A	4.47	HA	3.37	A	3.87
6. It's environmentally friendly	4.50	HA	4.33	HA	3.37	A	4.13	MA	3.37	A	3.94
7. Clay pots are inexpensive and easily available	4.77	HA	4.43	HA	3.60	MA	4.27	HA	3.40	MA	4.09
Total Mean	4.20	HA	4.39	HA	3.29	A	4.43	HA	3.33	A	3.93

Based on the table above, the respondents from restaurant D has the highest level of awareness and Restaurant C has the lowest awareness that clay pots are attractive enough to be used in both cooking and serving. According to Emma Christensen of the Kitchen, “clay pot cooking seems to be all the rage these days. Earthenware pots are relatively inexpensive and beautiful to look at, as evidenced by the lovely products featured at clay pot specialty shop Bram.” Also, according to Alfa Clay works, “it is durable and long lasting, easy to clean and gorgeous to use even as serve ware, especially for salads. So, your terracotta dish is a cook or serve dish as and when required.”

Fourth, clay pots prevent the potential health risks from metal cooking equipment. Restaurant A respondents are most aware and has a mean of 4.03, respondents from Restaurant B are highly aware with a mean of 4.37, Restaurant C with respondents are aware and has a mean of 3.33, respondents from Restaurant D are highly aware has a mean of 4.23 and Restaurant E respondents are most aware with a mean of 3.40.

Based on the table above, the respondents from Restaurant B have the highest level of awareness and Restaurant C has the lowest awareness that clay pots prevent the potential health risks from metal cooking equipment. From the article Nigerian Tribune [9], Eucharia Onyeka, a Professor of Food Chemistry and Nutrition, Department of Food Science and Technology Federal University of Technology (FUTO), Owerri, in her inaugural lecture entitled: “Food Security: Concerns and Comforts in Food Processing” also warned that aluminum cooking pots are not good for health reasons. According to her, “Aluminum is regarded as a macro toxin agent because its salt can be absorbed by the intestine and accumulated in various human tissues including bone, liver, parathyroid and can lead to nutritional disease such as cardiovascular disease, obesity and diabetes”. Also, according to the article Healthy Cookware [10], Clay which passed purity testing is naturally inert and safe for preparing, cooking and storing food. Food doesn’t react with pure clay and there are no toxic products leached into your food.

Fifth, clay pots can be long lasting if properly taken care of. Restaurant A respondents are most aware and has a mean of 4.07, respondents from Restaurant B are highly aware with a mean of 4.23, Restaurant C with respondents are aware and has a mean of 3.23, respondents from Restaurant D are highly aware has a mean of 4.47 and Restaurant E respondents are aware with a mean of 3.37. Based on the table above, the respondents from Restaurant D have the highest level

of awareness and Restaurant C has the lowest awareness that clay pots can be long lasting if properly taken care of. According to Mrida cooking [11], clay has certain unique features like its combination of nutrients, its elasticity and its ability to transform itself into a hard and durable substance when fired. This makes it the best raw material to make cooking utensils.

Sixth advantage is that clay pot is environmentally friendly. The respondents from Restaurant A are highly aware and has a mean of 4.50, respondents from Restaurant B are highly aware with a mean of 4.33, Restaurant C respondents are aware and has a mean of 3.37, respondents from Restaurant D are most aware and has a mean of 4.13 and Restaurant E respondents are most aware with a mean of 3.37.

Based on the table above, the respondents from Restaurant A have the highest level of awareness while Restaurant C and E has the lowest awareness that clay pots are environmentally friendly. According to Miriam’s earthen cookware website, Pure-clay is found right on the surface of the earth, does not require any mining! It is formed by the unique action between water, earth, and air. It is a 100% renewable resource. When a portion of it is taken for our use, the earth is designed to make more. When disposed at the end of their useful period, this green cookware made from pure-clay return to the earth in the manner that they were extracted. They become a part of the earth and in fact nourish (not pollute) the earth where they are disposed.

Seventh advantage is that clay pots are inexpensive and easily available. Restaurant A are highly aware and has a mean of 4.77, respondents from Restaurant B are highly aware with a mean of 4.43, Restaurant C respondents are most aware and has a mean of 3.60, respondents from Restaurant D are highly aware and has a mean of 4.27 and Restaurant E respondents are aware with a mean of 3.40.

Based on the table above, the respondents from Restaurant A have the highest level of awareness and Restaurant E has the lowest awareness that clay pots are inexpensive and easily available. According to SFGATE’s article, in Chinese, Vietnamese and Thai cooking, the most popular clay pots are squatty ones with one or two handles. Also called sand pots, these come in 2-cup to 3-quart sizes, are inexpensive and are easily available at many Asian markets. The exterior is sand like and unglazed, but the inside has a dark brown finish. For the price (less than \$10, even for the larger ones), the clay pot is a precious tool, acting both as a pot and serving dish.

The discussion of data analysis above shows that there were 4.3857 of the respondents from Restaurant B have the highest total level of awareness, and 3.2905 of the respondents from Restaurant C has the lowest total level of awareness to the different advantages of clay pot in cooking. According to the Researchers at the CDRI (Central Drug Research Institute) [12] Lab in Lucknow, India has done a case study on Clay Pot cooking. In one of their experiments, they cooked some *Daal* (Lentil curry) in a clay pot and at the same time also cooked some *Daal* in a pressure cooker. Then they compared the nutritional values of both the curries after they were cooked. In a case of the *Daal* cooked in the pressure cooker, only 13% of the original micro nutrients present in the raw *Daal* was left. But in a case of the *Daal* cooked in the clay pot, 100% of the micro nutrients which originally present in the raw *Daal* were still present in it after cooking. Essentially what was left in the pressure cooked *Daal* was almost worthless and unusable by the body. Also, according to Ayurveda Specialist at Dr. Vaidya's, Dr. Surya Bhagwati, [4] "cooking in a clay pot not only has a variety of health benefits but also makes for an easier cooking process and in the end, a more flavorful and nutritious dish. Due to its numerous health benefits, Ayurveda suggests cooking in a clay pot. Cooking in a clay pot is much better than cooking in a normal utensil, not just for its various health benefits, but also makes it much simpler to cook and improves the quality of the food at the end. The porosity and natural insulation properties of clay cause heat and moisture to circulate throughout clay pots. This makes cooking in a clay pot a much slower process but has added benefit of preventing amateur cooks from burning their dishes. More importantly, this causes the moisture and nutrient loss while cooking in clay pots to be much lower compared to cooking in metal or enamel lined utensils."

Based on the results of Table 5, it shows that majority of the respondents from every restaurant are all in all most aware of the advantages of clay pot. The

researchers believe that these advantages can be useful for the restaurants in the enhancement of their use of clay pots given that the customers are most aware of its advantages. Not only can it help to garner more customers, but it can also help with the continuous usage of our native equipment and to possibly discover more advantages of clay pots.

In terms of level of awareness, the respondents of each restaurant have a significant difference. The respondent's level of awareness when it comes of the effectiveness of using clay pots in serving and cooking. First is it allowing moisture and heat to circulate easily, Rest A is most aware and has a mean of 4.07, respondents in Rest B are Highly aware and has a mean of 4.50, respondents in Rest C are aware and has a mean of 2.93, respondents in Rest D are Highly aware and has a mean of 4.77 and respondents in Rest E are Aware and has a mean of 3.07.

Second is it keeps the water cool by allowing the heat to escape, Rest A is Most aware and has a mean of 3.87, respondents in Rest B are Most aware and has a mean of 4.13, respondents in Rest C are aware and has a mean of 3.23, respondents in Rest D are Highly Aware and has a mean of 4.23, and respondents in Rest E are aware and has a mean of 3.30.

Third, is it good for slow and delicate cooking? Rest A is Most Aware and has a mean of 4.03, respondents in Rest B are Highly Aware with a mean of 4.27, respondents in Rest C are Most Aware and has a mean of 3.40, respondents in Rest D are Highly Aware and has a mean of 4.23, and respondents in Rest E are aware and has a mean of 3.27.

Fourth is cooking in clay pot retains the temperature for a longer time and no worries for reheating, Rest A is Highly Aware and has a mean of 4.20, respondents in Rest B are Highly Aware with a mean of 4.27, respondents in Rest C are Most Aware with a mean of 3.43, respondents in Rest D are Most Aware with a mean of 4.10, and respondents in Rest E are Aware with a mean of 3.27

Table 6. Mean Response on the Level of Awareness on the effectiveness of using Palayok in cooking

		Rest A		Rest B		Rest C		Rest D		Rest E		GM
		M	I	M	I	M	I	M	I	M	I	
1.	Allows moisture and heat to circulate easily	4.07	MA	4.50	HA	2.93	A	4.77	HA	3.07	A	3.87
2.	Keeps the water cool by allowing the heat to escape	3.87	MA	4.13	MA	3.23	A	4.23	HA	3.30	A	3.75
3.	Good for slow and delicate cooking	4.03	MA	4.27	HA	3.40	MA	4.23	HA	3.20	MA	3.83
4.	Cooking in clay pot retains the temperature for a longer time and no worries for reheating	4.20	HA	4.27	HA	3.43	MA	4.10	MA	3.27	A	3.85
Total Mean		4.04	MA	4.29	HA	3.25	A	4.33	HA	3.21	A	3.83

Overall, it has a positive outcome and most of the respondents or the costumers in each of the restaurants are Aware about the Effectiveness of the clay pot or *palayok* in cooking or serving, and until now each of the respondents still know its usage.

According to Swartvagher, J. [13], “*Meals made in a clay pot are very easy to prepare. By enclosing your meal in a porous clay container that has been soaked in water, you ensure that the food’s natural juices, as well as all of the vitamins and minerals, are retained.*” As to what she said in her blog regarding clay pot you can see that she very much appreciates and share how clay pots are effective to use.

CONCLUSION

Customers of the five selected restaurants are mainly female and are working with representing different age groups.

Though now a days, only selected restaurant is using *palayok* as a cooking instrument still a lot of people remember and are highly aware on usage, history, health benefits and how important it is to use as a cooking instrument.

However, despite of the positive outcome of being highly aware regarding on the different matters regarding clay pot, still only few restaurants manages to use clay pot as cooking instrument and though most of the respondents are highly aware of the positive outcome of using clay pot still, they do not use it in their daily basis of cooking.

Economic Impact

According to Aklan government website [14], Aklan ranks first out of 80 provinces in the Philippines with the highest share of local income, with a rating of 45.3% in 2013 and one of the reasons were their Micro, Small, and Medium Enterprises. Aside from the famous Pina cloth which is considered a prime produce in Kalibo, there is also Lezo - one of the 17 municipalities of Aklan that is known for its red clay which the natives use to make pots, vases and various novelty items. The red clay became the means of livelihood of people of Lezo because of its abundant availability provided by the nature.

While according to Zamora, M. [15] in her article entitled “Pottery Sustains Family” an old woman pot maker says, “This is our version of gold (referring to the clay), it’s not shimmering but it’s our precious treasure,” Norma’s family owns the pot making business and stated that it started very small and it was very difficult due to their lack on capital. Pottery became their main source of income. To help the family

to sustain their financial stability, World Vision offered them micro-loans that helped their business grow. Now, their family business has been growing and been earning 20,000 pesos a month, and because of their labor in pottery making she was able to have one of her children graduate and provide livelihood to their neighbors.

The researchers believe that with the proper attention from the local government and aid with the promotion of enhancing our native equipment especially the *palayok*, it can affect our economic growth. Not only in labor and local income but also in tourism which showcases the *palayok’s* uniqueness, advantages, benefits, effectiveness and ethnicity.

Insights

Doing a thesis and being a researcher was one of the most challenging part of being a student, but the researchers were glad for the great opportunity to be able to share new and/or improves knowledge.

The study entitled, Enhancing Filipino food using the Old and Traditional Native Equipment “Luto sa Palayok” gathered data and got a most aware as the results from the respondents that are from different age range. This shows that they were aware of the benefits, advantages and effectiveness that the *palayok* provides. Though the researchers gathered positive results regarding their awareness, it was also there were few restaurants and even households who use *palayok* as their cooking equipment. These made the researchers sad and at the same time motivated that the study they have conducted will be of help for the preservation and continuous use of the native equipment. The researchers wanted to make use of the results not only to share the *palayok’s* benefits, advantages, and effectives, but also its economic impact and be an encouragement for the restaurants as a starting point to help with its enhancement.

RECOMMENDATIONS

The research findings of this study indicate that the respondents from the five (5) different restaurants are highly aware with the factors affecting cooking with the use of *palayok*, advantages of using *palayok* in cooking and the effectiveness of using *palayok* in serving and cooking. Therefore, the restaurants that use *palayok* in serving should also consider these findings to gain more knowledge in its benefits and enhance their usage of the *palayok*. The more these restaurants are knowledgeable with their equipment, the more they can utilize it, the more the customers will appreciate

their service which is a chance to improve their business and gather more attention.

The researchers also recommend that the restaurants that serve Filipino dishes work closely with the community in preserving the native equipment, promoting its continuous usage and showing the importance or effectiveness of clay pots that will also help discovering its other advantages and effectiveness.

For the local government where these restaurants are located particularly local tourism officials, it is recommended that they undertake steps to promote the significance of clay pots, to raise its production and improve its marketing that will help to attract the interest of more customers or visitors and enhance their food experience.

For future researchers. Although the results of the data gathered where the respondents of the survey are highly aware of the uses of the native equipment, the number of restaurants that use clay pots is still lacking. Therefore, the proponents recommend that the future researchers should focus on the following restaurants that use clay pots in cooking. It is also recommended to gather more benefits and advantages of clay pots and other native equipment. Lastly, this study can be used as a reference in conducting further research on the factors, advantages, and effectiveness of the clay pots which are not mentioned in this study.

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