

A Survey of the Type and Maintenance Culture of Cooking Pot Among Imo-State Dwellers in Nigeria

Onyeka, E. U.* & Ibeawuchi, O. O.

Department of Food Science and Technology, Federal University of Technology, Owerri, Nigeria

***Correspondence to:** Onyeka, E. U., Department of Food Science and Technology, Federal University of Technology, Owerri, Nigeria.

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Abstract

A survey was used to gather information about the choice of cooking pot, and methods of cooking pot maintenance among Imo State dwellers in Nigeria. The first part of the survey bothered on the personal statistics of the respondents while the second part involved the use of a 4-point Likert scale to determine the reasons for choice of cooking pot of respondents and cooking pot maintenance culture among respondents. The survey revealed that 60% of Imo State dwellers use aluminum cooking pot to cook their food. Twenty and twelve percent of the respondents use cooking pot made of stainless and enamel ware respectively. Glass and titanium cooking pots were uncommon. The choice of cooking pot depended on popularity, economy, durability of the ware and fate. We included the term “fate” because over 90% of those who use aluminum pot to cook use it on the grounds that they inherited or received it as token and not necessarily by original choice of theirs. Unfortunately, the extent to which the choice of cooking pot by respondents is influenced by health factors is 1.98, which is below the expected average value of 2.50 on a 4-point Likert scale. This shows that among the respondents, the number and proportion of those that have their reason for choice of cooking pot based on healthy considerations is below average. And this further shows that under normal circumstances

people do not consider health factors when purchasing cooking pots, the educational level of the respondents notwithstanding. The major maintenance culture is that of abrasive washing. Since Imo dwellers are not essentially Imo indigenes, it is plausible to extrapolate that the use of aluminum cooking pot is common among Nigerians, using dwellers in Imo state as a case study.

Introduction

There are rising evidences that certain cooking pot can provide an important avenue for metal to migrate into food and consequently to human bodies [1-5]. The awareness of the dangers of metals namely aluminum, nickel, iron and others from cooking utensil is of growing concern to public health. Cooking being at the last on the processing chain of food has the capacity to upgrade or downgrade a food stuff just before it is finally consumed. We are aware that the impact of food to the human body does not only depend on the food nutrient during harvest but also on what happens to the food before it gets into the mouth. A naturally nutrient-dense food can be turned on its head to become poisoned-dense. Several factors including the cooking pots influenced the losses and changes associated with food nutrients during cooking [6-8]. Report has it that metal use in forging cooking pots do melt under heat and undergo brownian movement which allows them to be free and they easily dispersed into the food contained therein which we eventually ingest [9]. All materials give off atoms and molecules when heated and when immersed in an acidic or alkaline solution. Therefore, every cooking material may leach metal into the foods, especially under high temperatures so it is good to know the type of metal and chemicals that could be leached out by the tools we use to cook our foods [10,11]. This survey is designed to ascertain the type(s) and maintenance culture of cooking pots by Imo State dwellers. We also set out to assert the level of awareness of health implications of cooking pot among Imo-state dwellers.

Design of Questionnaire

A structured questionnaire was designed to interview respondents who were mainly those who cooked most of their food themselves. The questionnaire was designed to gather information about the choice of cooking pot, reasons for preference of choice of cooking pot and finally the methods of maintenance used for these cooking pots. The questionnaire was divided into two parts. The first part bothered on the personal statistics of the respondents, such as age, gender, educational qualification and occupation. The second part involved the use of a 4-point Likert scale in constructing questions aimed at determining the reason for choice of cooking pot of respondents and cooking pot maintenance culture among respondents. In all, there were sixteen (16) questions and one hundred and fifty (150) respondents. The respondents were between the ages of 25 – 80 years who dwells in Imo State, Nigeria. We selected the respondents using simple random technique in public places. Some homes were also visited.

Results

Socio-Economic Status of Respondents

The summary of the socio-economic data of the respondents who participated in the cooking pot survey are presented in Fig 1-4. Forty-four (44) percent of respondents had first degree educational qualification, 32% had attained a post graduate level of education, while 10% and 14% had primary and secondary educational

qualifications respectively. Majority (68%) of the respondents were married while as little as 2% were separated. About 60% of the respondents lived in the urban areas. The remaining respondents live in suburban (24%), sub rural (10%), and villages (6%).

The results demonstrate that most of the respondents were literates who were married. Conventionally, according to USAID [12], married people cook their foods themselves because of its economic, social as well as moral benefits which aids in sustaining family bond. This data concurs with the assertion that Imo State has high civil service workforces, which are located in the urban cities of the State. This attracts people to leave the villages and settle in the urban areas.

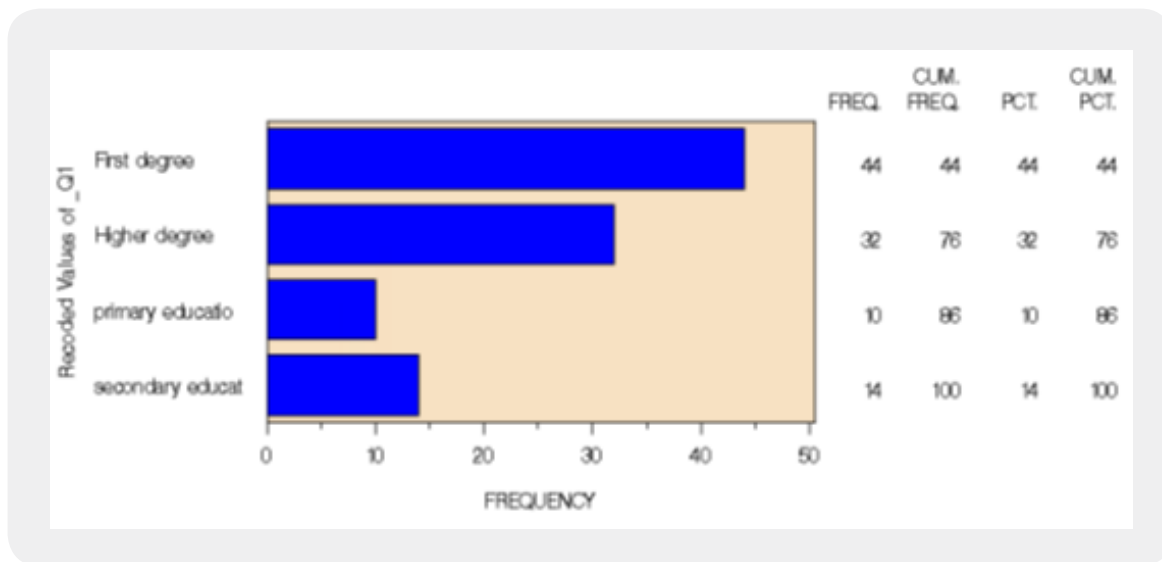


Figure 1: Bar Chart Showing Educational Distribution of Respondents

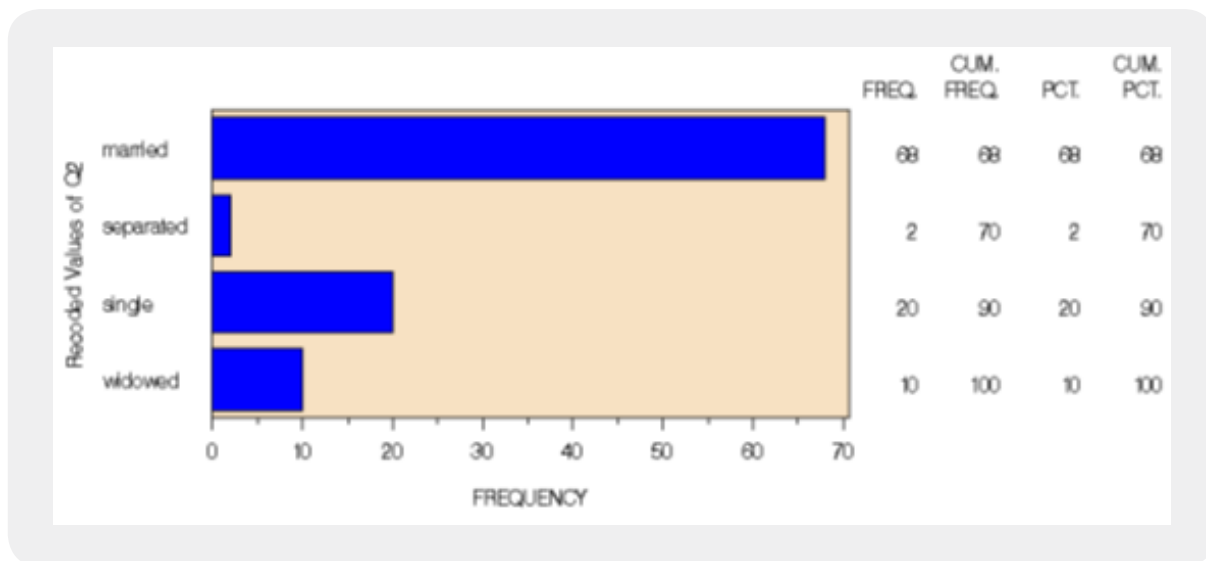


Figure 2: Bar Chart Showing Marital Status Distribution of Respondents

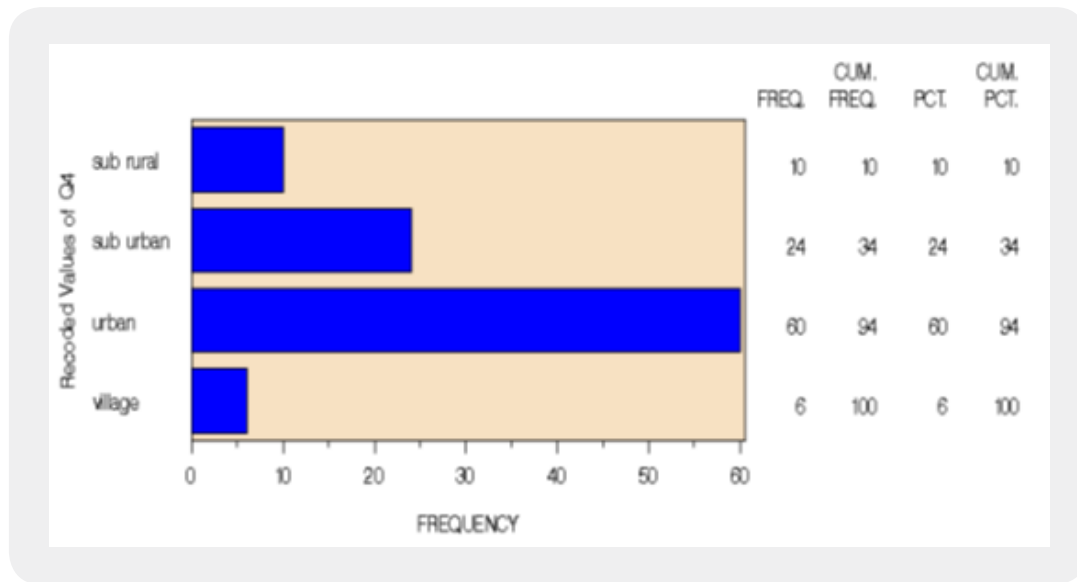


Figure 3: Bar Chart Showing Residence Distribution Among Respondents

Type of Cooking Pot Use by Respondents

The type of cooking pot predominantly used by the respondents is presented in Figure 4. The data shows that 60% of our respondents use cooking pot made of Aluminum (Tower), 20% and 12% of the respondents use cooking pot made of Stainless and Enamel ware respectively while 6% and 2% use non-Stick and iron-cast pot respectively to cook their food. The above data indicates that more than half of the respondents use Aluminum (Tower) type of cooking pot, while the use iron-cast cooking pot is the least among others. No respondent uses Titanium cooking pots.

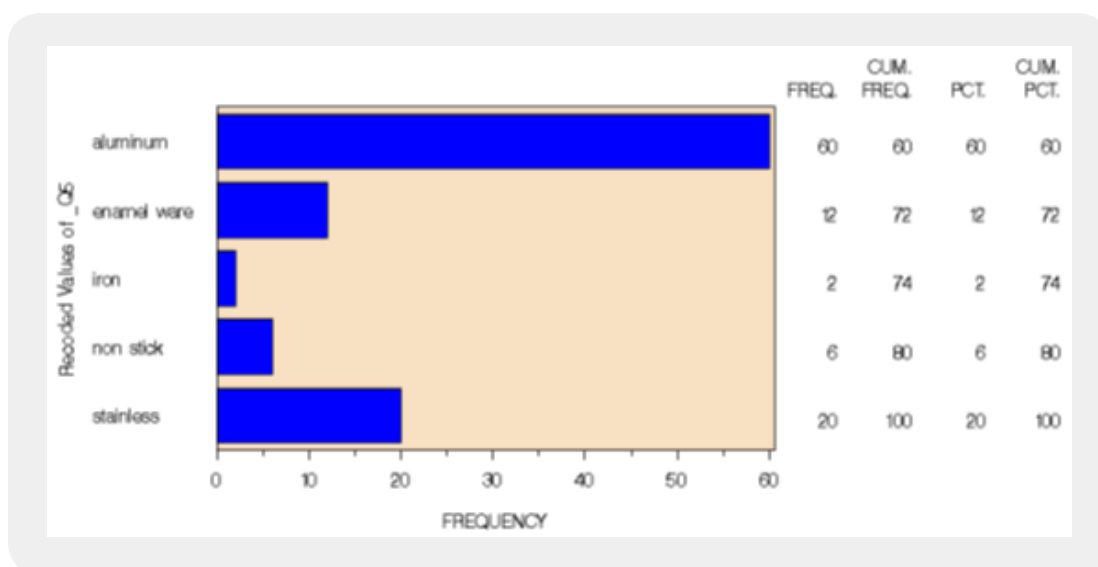


Figure 4: Bar Chart Showing Choice of Cooking Pot Distribution Among Respondents

Reasons for Choice of Cooking Pot Among Respondents

The reasons for choice of cooking pot among the study population are shown in Table 1. The t-statistics of 4.730 and the associated p-value of 0.0001 provide evidence at the 5% significant level that among the respondents, those that have their reasons for choice of cooking pot as inherited or token property is above average. The extent to which respondents use inherited cooking pot is 2.98 which is above the expected value of 2.50 on a 4-point Likert scale. Hence we reject the Null hypothesis and accept the alternative hypothesis which states that greater number of respondents use inherited or token cooking pot. These cooking pots are often received as wedding gift or souvenir, and a lot of people do not bother to change them many years thereafter.

Table 1. T-Test (one-tail) Result analysis on the reasons for the choice of type of cooking pot use by Imo State Dwellers.

Reasons	N	Mean	Std. Dev	Std. Error	Statistics	DF	Prob>t
Inherited	150	2.98	1.01	0.10	4.730	149	<0.0001
Easily available	150	2.14	0.92	0.09	-3.907	149	0.999
Cheap price	150	2.70	0.90	0.09	2.211	149	0.0147
In vogue	150	2.44	0.81	0.08	0.741	149	0.77
Healthy	150	1.98	0.86	0.09	-6.016	149	1.00

Similarly, the t-test revealed that the choice of cooking pot by respondent as influenced by the price of the cooking pot is 2.70 which is greater than the expected value of 2.50 on a 4-point Likert scale. The t statistic of 2.211 and the associated p-value (0.015) provide evidence at the 5% significant level that among the respondents, those that have their reason for choice of cooking pot hinged on its cheap cost in the market is considerably above average. Since the t-test is significant at 5% level of significance we conclude that respondents make their choice of cooking pot base on their prices. Hence we reject the null hypothesis which states that cost is not considered during the purchase of cooking pots and accept the alternative hypothesis of this research which states that reason for choice of cooking pot was based on its low price in the market.

The t- statistic of -3.902 and the associated p-value of 0.999 provide evidence at the 5% significant level that among the respondents, those that have their reason for choice of cooking pot as availability in the market is not up to average. The extent to which respondents base their choice of cooking pot on availability in the market is 2.14 which is below the expected value of 2.50 on a 4-point Likert scale. Hence we conclude that consumers do not make their choice of cooking pot base on availability i.e., aluminum is not the only pot in the market but people have some other reasons for buying it more than other pots. Similarly, the extent to which the choice of cooking pot by respondents is influenced by health factors is 1.98, which is below the expected average value of 2.50 on a 4-point Likert scale. The t-statistics is -6.016 with a P-value of 1.000 at 5% level of significance. This shows that among the respondents those that have their reason for choice of cooking pot based on healthy considerations is not up to average. This observation agrees with the assertion

that consumer in Imo State Nigeria are not aware of the health implication of cooking pots. Under normal circumstances people do not consider health factors during purchasing of cooking pots. The t-statistics of 0.741 and the associated p-value of 0.77 provides evidence at the 5% significant level that among the respondents, those with reason for choice of cooking pot hinged on it been In-vogue in the market is considerably below average. Since t-test at 5% level of significance is lesser, we conclude that respondents do not make their choices of cooking pot based on their In-vogue nature. Hence we reject the alternative hypothesis which states that purchase of cooking pots is been influenced by it been In-vogue and accept the null hypothesis which states that the reason for choice of cooking pot was not based on it been In-vogue.

The above results explain the continued patronage of particular (cheap) cooking pot (aluminum) by vast number of respondents. These findings tally with the observation of Dan and Ebong [13], that the most commonly used cooking pots in Nigeria are those made of aluminum and stainless steel and that the choice of these pots is because, they are the most popular and economical cooking pot commonly found in Nigerian markets. In addition to the fact that they are easy to clean, have unique surfaces that cannot crack easily, difficult to rust and high life expectancy.

Maintenance Technique Adopted for Cooking Pots by Imo State Dwellers

The common maintenance culture among respondents is displayed in Table 2. The extents to which respondents use sand, ash and leaves to maintain their cooking pot is 2.56 which is above the expected value of 2.50 on a 4-point Likert scale. The t-statistics of 0.573 and the associated p-value of 0.284 provide evidence at the 5% significant level that among the respondents, those that use local means to wash their pots is above average. This implies that the use of local means to wash burnt pot is common among Imo State dwellers. Unfortunately, some of these unconventional means like using sand and ash could cause abrasive effect on the surface of the pots which could lead to corrosive pitting. Conversely, the test for the study hypothesis indicates that respondents' maintenance technique based on iron sponge and soap is 1.94, which is less than the expected value of 2.50 on a 4-point Likert scale. Therefore, it can be inferred that the respondents do not always use iron sponge to wash their pots. The same goes for non-scratch stain remover. Equally Imo dwellers do not have the culture of discarding pot, no matter how badly burnt/damaged.

Table 2: Maintenance culture of Cooking pot by Imo State Dwellers

MAINTENANCE TECHNIQUE	N	Mean	Std. Dev	Std. Error	Statistics	DF	Prob>t
Sand/ash/leaves	150	2.56	1.05	0.10	0.573	149	0.284
Iron sponge/ soap	150	1.94	0.86	0.09	-6.493	149	1.000
Sponge & soap alone	150	2.06	0.68	0.07	-6.480	149	1.000
Non scratch stain remover	150	2.20	0.85	0.09	-3.518	149	0.999
Soaking indefinitely	150	2.06	0.68	0.07	-6.480	149	1.000

The alternative hypothesis believes that the respondents' maintenance technique was based on soap and sponge only. The null hypothesis for this study believes that respondent's maintenance technique was not based on soap and sponge only. The test for the study hypothesis indicates that respondents' maintenance technique based on soap and sponge only is 2.06, which is less than the expected value of 2.50 on a 4-point Likert scale. The t-statistics is -6.480 with a significant probability of (<1.0000) which provides evidence at 5% level of significance that among the respondents, those that had maintenance technique based on soap and sponge alone were below the average. Therefore, it can be inferred that the respondents' maintenance technique was not based on just soap and sponge. The alternative hypothesis of this research states that respondents' maintenance technique was based on non-scratch stain remover, while the null hypothesis states cooking pot choice was not based on non-scratch stain remover. The test for the study hypothesis indicates that maintenance technique based on non-scratch stain remover is 2.20, which is less than the expected value of 2.50 on a 4-point Likert scale. The t-statistics is -3.518 with a significant probability of (<0.9997) which provides evidence at the 5% level of significance, that among the respondents interviewed those with maintenance technique based on non-scratch stain remover was lesser than the average. The null hypothesis therefore holds. The alternative hypothesis of this research states that respondents' maintenance technique was based on soaking, while the null hypothesis states cooking pot choice was not based on simply soaking until stain loosens.

Conclusion

Majority of Imo-State Dwellers and indeed Nigerians are not aware of the unacceptable interaction between food and metals used in forging some cooking pots. This is because they do not bother to know the health implications of the various cooking pots. Hence our market is full of all sorts of pots including rejects from developed countries. It is about time Nigerian Government/stake holders look into the qualities of material used in forging pots marketed in Nigeria with the intent of safeguarding the lives of unsuspected consumers. Nigeria should stop serving as a dumping ground for substandard and obsolete cooking pots. The dominance of abrasive kind of washing for cooking pots among Imo State dwellers is also a health risk

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