FOOD PROCESSING METHOD AND FOOD QUALITY OF LOCAL DELICACIES IN RIVERS STATE, NIGERIA.

BY

OBOT, MARY IFIOK

Department of Hospitality and Tourism Management, University of Port Harcourt.

and

NDU, EUGENE CHIGOZIE, PhD.

Department of Hospitality and Tourism Management, University of Port Harcourt.

ABSTRACT

This study investigated the relationship between food processing method and food quality of local delicacies in Rivers State, Nigeria. The studyemployed a quasi-experimental research design and convenient sampling technique, data was gathered and analysed from a sample of 400 respondents using a well-structured questionnaire. Bivariate analysis was employed to test the three hypotheses developed for the study. The findings revealed that manual food processing had positive and significant relationships with three measures of food quality (taste, texture and attractiveness). The study concluded that irrespective of the food production process adopted by local dish restaurants, there is need to continuously consider superior food quality as strategy to satisfying their customers. It was thus recommended that local dish restaurants should produce their food under strict hygienic condition when using the manual food production process and that the continuous usage of manual process may improve food quality since it has been proven that it has the capacity to influence food quality.

Keywords: Manual Food Processing. Taste. Texture. Attractiveness. Restaurants.

Introduction

Food is paramount amongst the three basic needs of man. From time immemorial, availability of healthy foods has been a major point of discussion in every family, race and nations. Like many other countries, Nigeria struggles year after year to feed its increasing population in a sanitary and sufficient manner. A significant obstacle to developing food safety rules continues to be the necessity to provide acceptable food safety and hygiene consumptions. (Omotayo&Denloye, 2002). This situation is not peculiar to Nigeria as it has been estimated by World Health Organization [WHO], (2017) that over 600 million people across the globe have post food consumption illnesses which eventually results to about 420,000 deaths. This has also resulted to 33 million disability adjusted life years (DALYs) with an estimated cost of illness placed at US$3.6 billion yearly (Iro, et al., 2020; Ezirigwe, 2018). These illnesses were linked by Ndu and Asiegbu (2021) to poor or ineffective food hygiene and safety management. The food chain industry's food handlers often lack the expertise necessary to ensure food safety operations, and their poor practices reflect these deficiencies (Iro et al., 2017; Azuama et al., 2018; Amadi et al., 2018; Chukuezi, 2010). Particularly, the poor microbial qualities of the foods produced by local dish food handlers calls for serious attention as food safety production forms a central theme of discussion in public health functions. Ndu and Asiegbu (2021) lamented that high prevalence of food borne illness remains a source of panic in public health crisis management across the world.

The challenge of food safety is no doubt a daunting challenge to government, food technologists and hospitality management experts. Food quality, including safety, has been a crucial source of worry faced by the food industry, partly due to a series of food safety crises and scandals (Aung & Chang, 2014). This is revealing as governments and consumers are increasingly concerned with the safety of and quality of food supplies. However, quality of the food products continuously changes as they move along the supply chain, which can lead to significant health, social, economic, and environmental implication (Ndu&Asigbu, 2021; Yong, Dong, Chunming, 2018). Nwosu, Ozumba, and Bosa (2015) further howled that the situation calls for urgent attention because over the years, food nutrition has continued to remain a key health challenge in including Nigeria and many other developing countries. There is a problem of nutritional deficiencies in Nigeria, which come not only from a shortage of food but also from poor dietary choices made by those who can afford to acquire them. This problem has made nutrition in Nigeria a challenging issue, which was caused by the problem. The prevalence of non-communicable diseases (NCDs) that are linked to nutrition is increasing in Nigeria; according to experts, the prevalence of type II diabetes and obesity in adults is 33.3% and 7.9%, respectively (National Population Commission (NPC) and ICF International, 2014). In addition, the prevalence of NCDs is increasing globally. Diet-related non-communicable diseases are quickly becoming the leading causes of morbidity and mortality throughout the world, including in Nigeria. This trend is occurring in nations all over the world. They address a wide variety of health disorders, including diabetes, cancer, chronic respiratory illnesses, cardiovascular disease, and musculoskeletal problems.

As a reaction to this worrying circumstance, the government of Nigeria has taken a number of proactive steps to improve food safety and nutrition throughout the country. One of these is the

establishment of a National Policy on Food and Nutrition (Ministry of Budget and National Planning, 2016), which employs a program strategy that is both multi-sectorial and multi-disciplinary, as well as a variety of interventions that are carried out both locally and nationally. The Agriculture Promotion Policy was published in 2016. In addition, a National Strategic Plan of Action for Nutrition - Health Sector Component was developed, which was based on prior strategic papers and established targets to improve the nation's overall food safety and reduce the prevalence of malnutrition (Federal Ministry of Health, 2014). In addition to this, there is the National Health Policy, which was developed with the intention of enhancing Nigeria's primary healthcare system and addressing concerns over food-borne diseases.

 The effort of National Agency for Food and Drugs Administrative Control (NAFDAC) in this discuss can also not be overemphasized. It is however disheartening to note that despite these tremendous efforts by government and its agencies food safety and nutrition is still a major concern in Nigeria (Ndu&Asiegbu, 2021). This perhaps tells that government alone cannot tackle the problem of food safety and nutrition in Nigeria. The situation requires collaborative efforts from all stakeholders, chief among these stakeholders are managers of hospitality firms, particularly, the owners and managers of local dishes restaurants whose service deals directly with the final consumers. The urgent need to address the operations management technique and food making process of local dish restaurants is a central focus of this study.

Operation management is still an important part of modern management in many settings, particularly the manufacturing and service industries (Knod et al., 2000; Rodionova et al., 2008). Operation is a part of a company organization that is in charge of managing the entire process and methodology that is in charge of producing products and services up to delivery in any commercial enterprise. This includes manufacturing, distribution, and customer service (Gupta, et al., 2008). Goods have a physical form and may contain raw materials, components, subassemblies, and finished goods that are sold to customers, as described by Szczucka-Lasota et al. (2018) and Skotnicka-Zasadzie et al. (2017), respectively. Services are defined as any endeavour that provides a particular combination of time, place, form, or psychological value to the customer. The provision of both goods and services to one's customers is a distinctive characteristic of establishments serving regional cuisine. The primary goal of operation management is to transform inputs into outputs while making use of a wide variety of resources. The operations strategy contributes significantly to the success of the business strategy by fostering the development of capabilities, putting those capabilities to use, and offering customers products of the highest possible standard. It is frequently discussed in terms of competitive imperatives such as price, quality, delivery, and adaptability. Restaurant owners and managers in the area are concerned about the growing demand from customers for diets that are both healthy and risk-free. Food spoilage is one of the most significant challenges facing efforts to ensure that food is both safe and of high quality.

Furthermore, the outbreak of Covid-19 has been a major disruption in the modus-operandi and management techniques of business firms across the world (Ndu& Ajao, 2020). Time has changed and the traditional methodology of getting things done may not be sufficient for contemporary business managers. This is particularly in the case of local dish restaurants in Nigeria. Demands for quality foods has necessitated the need to design and re-design their

operation manual and procedures in order to better serve their customers in the face of fierce competition. However, it is a surprise to observe that this urgent need for managers of local dish restaurants has not gained enough attention and curiosity of concerned managers. This challenge could be as a result of the lacuna in literatures that call attention of experts to rise up to the task. A few literatures that address operations management issues in the tourism and hospitality industry had mainly been orchestrated to the big players in the industry such as high rating hotel and tourist centres leaving the local dish restaurants unattended to; causing a lacuna which this study seeks to address. Therefore this study aims to explore and discuss the food production management of local dishes in Port Harcourt restaurants.

Aim and Objectives of the Study

The aim of this study was to investigate the relationship between food production processand food quality of local dishes restaurants in Port Harcourt.

The precise objectives of the study are to;

1   Examine the relationship betweenManual Food Processing andTaste of local dishes restaurants in Port Harcourt.
2   Examine the relationship betweenManual Food ProcessingandTexture of local dishes restaurants in Port Harcourt.
3   Examine the relationship betweenManual Food ProcessingandAttractiveness of local dishes restaurants in Port Harcourt.

Research Hypotheses

From the questions raised in the study the following hypotheses may be tested

H_0:1 there is no significant relationship between Manual Food Processing and Taste of local dishes restaurants in Port Harcourt.

H_0:2 there is no significant relationship between Manual Food Processing and Texture of local dishes restaurants in Port Harcourt.

H_0:3 there is no significant relationship between Manual Food Processing and Attractiveness of local dishes restaurants in Port Harcourt.

Literature Review

Theoretical Framework

The basic theories for this study are Total Quality Management Theory (TQM) and Theory of Planed Behaviour (TPB). These theories are discussed in detail as they relate with the study.

Theory of Planned Behaviour (TPB)

The theory of planned behaviour, sometimes known as TPB, is a full-fledged social psychology theory that has gained widespread acceptance in a variety of domains, including management, nursing, marketing, and other areas (Zhang, 2018). Ajzen (1988, 1991) proposed the theory as an extension of the theories of Multi-attribute Attitude (TMA) and The Theory of Reasoned Action (TRA). He did so in both of his publications (Zhang, 2018; Ndu&Asiegbu, 2021).The theory is found on the assumption that human behaviour can be predicted by ascertaining the intention of people. It explained that the intention of people to behave in a certain manner is a crucial tool for determining human behaviour. Ajzen and Fishbein (1973) puts it that TPB is "a social-psychological theory that explains behavioral decision-making processes of human beings with aiming at understanding and predicting the behavior of individuals, advocating that the successful completion of human behaviors are mainly controlled by individual will". This theory is established on the premise that the intention to behave in a particular manner will not be manifested in actual behaviour if it is practically impossible to execute the behavior or if there are unanticipated impediments standing in the way. In other words, if the behavior cannot be executed, the intention to behave in a particular manner will not be expressed in actual behavior (Ndu&Asiegbu, 2021). If we accept that conduct can be described by intention, according to Azjen's argument from 1985, then we need to provide an explanation for behavioral intents. He put out the hypothesis that rather than being entirely within the control of an individual's will, it is more often explained by the influences of external and objective circumstances. Ajzen (1985) extended and revised the structure of TRA in order to give it more power in its ability to predict and explain human behavior. He did this by adding the variable of perceived behavioral control in addition to the variables of subjective norm and attitude. This was done so that TRA could have a greater impact.

Conceptual Review

Concept of Food Production Process

Food production process describes the method used in producing food. FThe concept of production and operations process has a dominant point of discussion in literatures most significantly in the manufacturing sector, oil and gas, telecommunication and recently in the service industry. The business management is not as usual especially in the twenty first century. Managers of business organisation across the world seek a more efficient and effective way of carrying out their business operation. They crave for a better technique that will not only guarantee costs efficiency but as well ensure that the company gain competitive edge by offering

products with superior quality. The interesting point to note is that the hospitality management industry has both product-service systems. It entails both production and service simultaneously. For example while restaurants offer quality foods to customers, they also offer service such as packaging and delivery.

Manual Food Processing

Food processing generally involves the preparation of foods that are ready for human consumption and is commonly described as cooking. Heating is a step in the manufacture of food that is done to change the smell, taste, and consistency of the meal, and most importantly to make it easier to digest the individual components of the food. The manual food processing involves the use of kitchen tools which allows the chef to perfom culinary functions with the aid of basic kitchen items without the use of electricity. Wanda (2023) explained that manual food processing requires the physical strength of the chefs to move blades through the selected food items. It also involves the movement of foods through stationary blades. Customers generally perceive this process of food preparation to be simple and more environmental friendly (Wanda, 2023). In other words, foods produced using manual processors are usually consider safe. Manual food processing involves the use of simple tools for culinary activities; these tools vary in depending on the foods and manufacturers.

Food Quality: The quality of food, especially its safety, has been a primary concern for those working in the food sector, in large part as a result of a string of scandals and crises involving food safety. (Aung & Chang, 2014). Food consumption which supposedly should provide nourishment and supports for mankind has increasingly become a major source of illness and mortality amongst both the young and the elderly. The strain on quality foods is revealing with rising need to ensure adequate food safety and hygiene consumptions still forms a major challenge to all participants in the food industries (Omotayo&Denloye, 2002).This is revealing as governments and consumers are increasingly concerned with the safety of and quality of food supplies. However, the quality of the food items constantly changes as they make their way through the supply chain, which may have important implications not just for people's health but also for society, the economy, and the environment. (Ndu&Asigbu, 2021; Yong, Dong, Chunming, 2018). Demands for quality foods have necessitated the need to design and re-design their operations. Thus, for the purpose of this study quality was considered in the context of food. Thus the food taste, food texture and food attractiveness shall be adopted as the measures of food quality.

Food Taste: Taste is one of the generally accepted attribute of judging the quality of food. Food taste is generally described as the sense by flavor or savour of things perceived when they are brought in contact with the tongue (Dictionary.com). It is the perception of quality perceived by customers when a food substance reaches the mouth. Food taste is a generic quality of food which encompasses,

Food Texture: The evaluation of texture is one of the most important aspects of sensory analysis. Rather than the absence of flaws, one need to judge the quality of a food based on its texture since it is a better sign of how fresh it is, how well it was prepared, and how satisfying it is to (Szczesniak, 2002). It has influence on the taste, quality, and safety of the food. The texture of the food is yet another quality indicator criterion.

Food Attractiveness: Food attractiveness refers to the positive feelings a customer experience from the visual display of food. It is a sense of attraction and appalling view a customer has regarding food displayed.

Empirical Review

Manual Production Process and Taste

Lauzikas, Miliūtė, Tranavicius&Kiciatovas (2016) carried out a study on traditional factors in food production process in the Fast Food Industry. The literature on main concepts of traditional food production methods, classification of types of process was well established. The finding of the study revealed that traditional method of food production in establishments in QSR should not be encouraged as it will negatively impact the standard and quality of food expected by the consumers. The study prior to the finding contacted 25 fast food operators in the US and analyzed the factors using Pearson's product moment coefficient. Arrowquip (2017) conducted an investigation on benefits of patronizing manually made food. The study revealed that a preference of manually prepared food by patrons because they are convinced of the origin of food ingredients. Furthermore, they stated one of the benefits to be the originality in taste, preservative free and it offers improved nutrition which is the core of food quality. Food is paramount amongst the three basic needs of man. From time immemorial, availability of healthy foods has been a major point of discussion in every family, race and nations. Like many other countries, Nigeria struggles year after year to feed its increasing population in a sanitary and sufficient manner. A significant obstacle to developing food safety rules continues to be the necessity to provide acceptable food safety and hygiene consumptions. (Omotayo&Denloye, 2002). This situation is not peculiar to Nigeria as it has been estimated by World Health Organization [WHO], (2017) that over 600 million people across the globe have post food consumption illnesses which eventually results to about 420,000 deaths.

Manual Food Production and Texture

Matinez (2010) did a conceptual review on local food systems: concepts, impacts and issues. Thought the scholar opined that though manual food production appeal to some set of individuals but in QSR where food quality is expected of the highest stands, its preparation must be done in a way manner where the foods will not lose their nutrients, size, texture, taste, attractiveness etc. The scholar mentioned manual pilling, frying, and preservation as major factors that distort the achievement of quality food in most developing nations. Gyaan in a (2023) made a post on how to make dishes look irresistible. The blogger mentioned that given the competitiveness in food industry, patrons are more observant of the texture of food particles they swallow, hence he

advised that to improve and promote local restaurant and not lose the local identity, manual proportioning, styling and service should be deployed for the sake of the locals

An exploratory research on manual innovations in the hospitality business was carried out by Milan, Ivan, Karolina, Dunja, Sanj, and Vidoje (2016). The purpose of this article was to identify existing manual service food production activities, as well as views of what may become future service trends and the projected path in the restaurant business. In addition, the article examined the relationship between the socio-demographic profile of clients and the kind of manual service they like or make use of. Customers of full-service casual dining restaurants from three different countries were interviewed for the purpose of assessing their perspectives on the manual food production process and gaining insight into their ideas regarding the direction in which future service trends will head. The analysis of variance (ANOVA) was used so that disparities in consumers' perspectives on the subject of service innovation could be shown.The findings of the qualitative research draw attention to five key areas of concern which could affect overall food quality and food quality is measured in line with the texture of food, taste of food, color of food aroma etc. this implies that manual food production process can impact the taste of foods produced by food service and production oriented firms. Poelman and Delahunty (2011) in their study asserted that texture properties are very important for food acceptance among young people, but the hedonic value of specific descriptors depend on the method of preparation. Experimental data indicated that slimy, slippery and/or granular foods tend to be disliked by adults but liked by children while hard, crunchy or soft. They argued that the acceptance of food texture is dependent on the method of production and those who want to consume he food.

Manual Food Production and Attractiveness

Poelman and Delahunty (2011) stated in their study on the effect of preparation method and typicality of color on acceptance for vegetable food stated that food color, aroma, taste as some the qualities in food that attract consumers. Their study also revealed traditional method of food production can enhance or distort the attractiveness of the food. Though they clearly stated that position to totally down to the demographics the food producers is targeting. The study was an investigative study and 453 participants were considered for the study. Questionnaire was used to elicit information about study variables and analyzed using ANOVA.

A research on the colour, taste, and texture as well as the nutritional content of beautifully and freshly cut vegetables and fruits were carried out by Barret and colleagues (2010). For the purpose of promoting attractiveness, both the objective and sensory assessments for identifying these essential characteristics of quality were explored. The advantage of manual food production was discussed extensively and the scholars observed through an empirical test that manual food production process helps to retain food quality in terms of the mentioned variables; they did not also forget to mention that manual production is time and energy consuming and as such might not be applicable in commercial food production context

Uyoyou (2013) observed that local restaurants have high rate of patronage from people of different demographics; so much so that often times these foods outlets may not be able to meet the urgent need of their impatient customers. Because of the rapid pace at which the meals at

local dish restaurants are made, it is impossible to rule out the risk of food contamination due to negligent practices. There is always the risk of the utensils and equipment that are used for the preparation and serving of meals not being completely cleaned. There are several fast meals that are cooked under unsanitary conditions, thus Cleanliness of the environment; meal exposure, the use of personal Protective equipment and proximity of meal preparation space from sources of contamination such as waste basket, used water etc. constitute a major challenge to fast food operators. Despite the warnings and recommendations of WHO on the operations workflow and the use of PPE, poor hygiene practices is still prevalent amongst these restaurants.

Lakshmi et al (2018) wrote on traditional processes and methods to enhance nutritional value in foods in India. The scholars opined that malnutrition is evident in the country not only to insufficient amounts of food but also to the poor nutritional quality of the available method of preparation. They contend that manual food processing can only be used in the household. Quality food is one that has the nutritional value, nice aroma, taste and in right proportion. These the scholars say are food qualities that influence attractiveness.

Methodology

This research study is a quasi-experimental research study, which is guided by the kind of phenomena being studied and also because the variables being studied were not within the control of the researcher. Both of these factors contribute to the decision to conduct a descriptive research study. As a result, the quasi-experimental design emerges as the method that is most suited to the accomplishment of the goals of this research. Because the research included picking samples of components from the population of interest that were quantifiable at various moments in time, the researcher decided to use the cross-sectional study approach.The population comprised 400 respondents comprising six customers from each of the identified restaurants. This approach of sample size determination satisfies the threshold and conditions for sampling size when population is unknown (Sekaran, 2003). For the purpose of this investigation primary source of data was employed. The main data were collected by having the respondents fill out questionnaires and by having personal interviews with the respondents themselves. These methods were used in order to get as much information as possible. The questionnaire played a significant role as the primary tool for data gathering in this investigation. The questionnaire was divided into three parts according to its structure (section A, B and C).Section A contained the demographic data of respondents; Section B consists of questions relating to the independent variable (Food Production Process) while Section C deals with questions relating to the dependents variable (Quality).

The questionnaire was structured on five (4) points Likert scale ranging from 1-4 as shown thus;

Strongly Agreed 4
Agree 3
Disagree 2
Strongly disagree 1

The instrument was validated both at the face and content levels through constructive inputs of scholars and experts in the field (Nunnally & Bernstein, 1994). To determine whether or not the instrument could be relied upon, the Cronbach alpha technique was used. It determined whether or not the research instrument is consistent within itself. The statistical package SPSS, version 22.0 was used to aid this calculation. The value of the Chronbach Alpha for the variables were as follows: manual food processing (0.889), food taste (0.799), food texture (0.816) and food attractiveness (0.891).

Data Analyses

Response Rate of Questionnaire

Table 1: Questionnaire Response Rate

Questionnaire	Frequency	Percentage (%)
Sample size	400	100
Number Administered	400	100
Number Retrieved	369	92
Number used	348	87

Table 1 shows the response rate of the questionnaire administered for the study. As earlier marshalled out, the sample size of the study comprises selected local dish restaurants in Port Harcourt. A total of 400 questionnaires which represent 100% of the sample size were administered. Out of these, 369 responses were retrieved which accounts for about 92% of the sample size. However 21 (5%) copies of the retrieved questionnaire were wrongly filled and were not considered for the analysis, giving rise to 348 valid copies of the research instruments which amount to about 87% of the sample size. Thus these 348 samples constituted the data for this study.

Demographic Data of Respondents

Gender distribution of the respondents. From the sample size, 47 respondents which represents about 13.5% were male, 301 respondents which account for about 86.5% were females. This result shows therefore that majority of the respondents are females. Age distribution of the respondents. It revealed that 14 respondents which accounted for about 4% were within the age

range of 18 to 25 years, 29 respondents which is about 8.3% of the sample size were within the ages of 23 to 35 years, 77 respondents which accounted for about 22.6% were within the ages of 36 to 45 years, 116 respondents which represented about 33.1% were within the ages of 46-55 years while only 110 respondents which consist of 31.4% were over 56 years of age. This result shows that majority of the respondents are above the age of 55.   Marital status distribution of the respondents showed that 268 respondents (77%) were married while 63(18.1%) were single while 17 which is about 4.9% were widowed. This shows that majority of the respondents were married. Data on educational qualification of the respondentsrevealed that 133 respondents which constitute about 38.2% had Ordinary level certificate, 105 (30.2%) had Ordinary/Higher National Diploma, 85(24.4%) had bachelor's degree, 22(6.3%) had Master's degree while 3(0.9%) had doctorate degree. Thus the results showed that majority of the respondents (68.4%) are not graduates.

Inferential Statistics (Bivariate Analysis)

In this section, the secondary analyses from the results of the hypotheses are presented with the test conducted using Pearson's Product Moment Correlation Coefficient at 95% confidence level which was adopted for the probability for either accepting the null hypotheses at ($p>0.05$) or rejecting the null hypothesis at ($p<0.05$).

Test of Hypothesis One

H_0:1 there is no significant relationship between Manual Food Processing and Taste of local dishes restaurants in Port Harcourt.

Table 2-4: Manual Food Processing and Food Taste

Table 2: Correlations

		Manual Food Processing	Food Taste
Manual Food Processing	Pearson Correlation	1	.936**
	Sig. (2-tailed)		.000
	N	348	348
Food Taste	Pearson Correlation	.936**	1
	Sig. (2-tailed)	.000	
	N	348	348

**. Correlation is significant at the 0.00 level (2-tailed).

Source: SPSS Analysis Result, 2022

From the outcome in the table above, it was revealed that a significant and high positive relationship exists between manual food processing and food taste. The correlation showed a statistic (P=0.936, p<0.005) which indicate that there is a strong positive relationship between the two variables. The extent of this relationship is shown in the regression result below

Table 3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.936[a]	.0876	.845	1.09247

a. Predictors: (Constant), Manual Food Processing

Table 4: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.798	.160		11.254	.000
	Manual Food Processing	.199	.057	.936	3.503	.001

a. Dependent Variable: Food Taste

The table above shows the model summary and coefficients of the regression analysis. While correlation establishes that there is a significant relationship between Manual food processing and food taste, regression analysis shows the magnitude of the relationship. Thus from the result, R^2 value of 0.876 shows that manual food processing is a high predictor of taste of local dishes as it boast of 87.6% predictive capacity of food taste. This implies that local food processing can predict food taste to the tune of 87.6%. The result also reflects a beta value β of 0.936 (p-value 0.000). The regression models becomes =1.798+.0936*MFP.

Since the p-value 0.000 is less than the level of significance (0.005), the null hypothesis H_0 is not upheld. Therefore the alternative hypothesis is which states that there is a significant relationship between Manual Food Processing and Taste of local dishes restaurants in Port Harcourt.

Test of Hypothesis Two

H_0:2 there is no significant relationship between Manual Food Processing and Texture of local dishes restaurants in Port Harcourt.

Table 5-7: Manual Food Processing and Food Texture

Table 5: Correlations

		Manual Food Processing	Food Texture
Manual Food Processing	Pearson Correlation	1	.911[**]
	Sig. (2-tailed)		.000
	N	348	348
Food Texture	Pearson Correlation	.911[**]	1
	Sig. (2-tailed)	.000	
	N	348	348

**. Correlation is significant at the 0.00 level (2-tailed).

Source: SPSS Analysis Result, 2022

From the outcome in the table above, it was revealed that a significant and high positive relationship exists between manual food processing and food texture. The correlation showed a statistic (P=0.911, p<0.005) which indicate that there is a strong positive relationship between the two variables. The extent of this relationship is shown in the regression result below

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.911[a]	.830	.791	1.08821

a. Predictors: (Constant), Manual Food Processing

Table 7: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.713	.166		10.291	.000
	Manual Food Processing	.244	.063	.911	3.883	.000

a. Dependent Variable: Food Texture

The table above shows the model summary and coefficients of the regression analysis. While correlation establishes that there is a significant relationship between Manual food processing and food texture, regression analysis shows the magnitude of the relationship. Thus from the result, R^2 value of 0.830 shows that manual food processing is a high predictor of texture of local

dishes as it boast of 83% predictive capacity of food texture. This implies that local food processing can predict food texture to the tune of 87.6%. The result also reflects a beta value β of 0.911 (p-value 0.000). The regression models becomes =1.713+.0.911*MFP.

Since the p-value 0.000 is less than the level of significance (0.005), the null hypothesis H_0 is not upheld. Therefore the alternative hypothesis is which states that there is a significant relationship between Manual Food Processing and Texture of local dishes restaurants in Port Harcourt.

Test of Hypothesis Three

H_0:3 there is no significant relationship between Manual Food Processing and Attractiveness of local dishes restaurants in Port Harcourt.

Table 8-10: Manual Food Processing and Food Attractiveness

Table 8: Correlations

		Manual Food Processing	Food Attraction
Manual Food Processing	Pearson Correlation	1	.952**
	Sig. (2-tailed)		.001
	N	348	348
Food Attraction	Pearson Correlation	.952**	1
	Sig. (2-tailed)	.001	
	N	348	348

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Analysis Result, 2022

From the outcome in the table above, it was revealed that a significant and high positive relationship exists between manual food processing and food attractiveness. The correlation showed a statistic (P=0.952, p<0.005) which indicate that there is a strong positive relationship between the two variables. The extent of this relationship is shown in the regression result below

Table 9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952[a]	.906	.875	1.09247

a. Predictors: (Constant), Manual Food Processing

Table 10: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.798	.160		11.254	.000
	Manual Food processing	.199	.057	.952	3.503	.001

a. Dependent Variable: Food Attractiveness

The table above shows the model summary and coefficients of the regression analysis. While correlation establishes that there is a significant relationship between Manual food processing and food attractiveness, regression analysis shows the magnitude of the relationship. Thus from the result, R^2 value of 0.906 shows that manual food processing is a high predictor of attraction of local dishes as it boast of 90.6% predictive capacity of food attractiveness. This implies that local food processing can predict food attractiveness to the tune of 90.6%. The result also reflects a beta value β of 0.952 (p-value 0.000). The regression models becomes =1.798+.0.955*MFP.

Since the p-value 0.000 is less than the level of significance (0.005), the null hypothesis H_0 is not upheld. Therefore the alternative hypothesis is which states that there is a significant relationship between Manual Food Processing and Texture of local dishes restaurants in Port Harcourt.

Discussions of Findings

This section discusses the findings of the study based on the analyses. It indicates how this study and previous studies are related or differ in certain perspectives.The findings of the study emanated from the result of hypotheses one, two and three which sought to examine the relationship between manual food production process and the measures of foodquality ; which

are food taste, food texture and food attractiveness.The study found that there is a significant relationship between manual food production process (as a dimension of food production process) and the food quality. Specifically, the result showed a value of (r=.936, 911,952 at*p*=000<.005) for food taste, food texture and food attractiveness.

This result is not surprising considering the type of food involved in the study and the restaurants involved. The study survey revealed that customers find local dishes attractive when they are prepared and served in traditional settings. The study conforms to previous findings of Lauzikas, Miliūtė, Tranavicius&Kiciatovas (2016) who carried out a study on traditional factors in food production process in the Fast Food Industry. The literature on main concepts of traditional food production methods, classification of types of process was well established. The finding of the study revealed that traditional method of food production in establishments in QSR should not be encouraged as it will negatively impact the standard and quality of food expected by the consumers. The study prior to the finding contacted 25 fast food operators in the US and analyzed the factors using Pearson's product moment coefficient.Arrowquip (2017) conducted an investigation on benefits of patronizing manually made food. The study revealed that a preference of manually prepared food by patrons because they are convinced of the origin of food ingredients. Furthermore, they stated one of the benefits to be the originality in taste, preservative free and it offers improved nutrition which is the core of food quality

It is also in tandem withMatinez (2010) who did a conceptual review on local food systems: concepts, impacts and issues. Thought the scholar opined that though manual food production appeal to some set of individuals but in QSR where food quality is expected of the highest stands, its preparation must be done in a way manner where the foods will not lose their nutrients, size, texture, taste, attractiveness etc. The scholar mentioned manual pilling, frying, and preservation as major factors that distort the achievement of quality food in most developing nations.Gyaan in a (2023) made a post on how to make dishes look irresistible. The blogger mentioned that given the competitiveness in food industry, patrons are more observant of the texture of food particles they swallow, hence he advised that to improve and promote local restaurant and not lose the local identity, manual proportioning, styling and service should be deployed for the sake of the locals

Conclusion

The overall purpose of this study was to investigate the relationship between food production process and food quality of local dish restaurants in Port Harcourt, Rivers state with chef expertise acting as the moderating variable. To achieve this purpose, one dimension of food production process (manual food production process) was adopted against three measures of food quality (food taste, food texture and food attractiveness). The result of the analysis revealed food production is a significant predictor of food quality The study concluded that irrespective of the food production process adopted by local dish restaurants, there is need to continuously consider superior food quality as strategy to satisfying their customers.

Recommendations

In line with the empirical analyses and findings, the following are recommendation of the study;

i.   Manual food processing proved to have a significant positive influence on food quality of local dish restaurants. Therefore To achieve a reasonable improvement, it is recommended that local dish restaurants should produce their food under strict hygienic condition when using the manual food production process.

ii.   Though manual food production process showed a moderate positive influence on food quality, restaurants are advised to pursue the use of this method as it proved to have a positive impact on quality. The continuous usage of mechanised process may improve food quality since it has been proven that it has the capacity to influence food quality.

Contribution to Knowledge

The study has contributed immensely to both local dish restaurants managers and other hospitality practitioners. It provided an explanation on to engender quality food production through food production process by local dish restaurants and by extension other sectors of the hospitality industry. Examining the production processes of local dish restaurants and chef expertise, the study empirically found ways of improving food quality. Specifically, the study has made remarkable recommendation on how to improve the quality of food offered by local dish restaurants in Port Harcourt.

Suggestion for Further Research

The study focused on the impact of food production process of local dish restaurants on food quality. However, future study may examine how each of the identified dimensions in the study can independently influence food quality. Also a replica of this study may be conducted in large restaurant and hospitality sectors that offer foods services to the public. This will enable them understand the dynamics and interplay of the phenomena under consideration.

References

Bagozzi, R. P., & Yi, Y. (2012).Specification, evaluation and interpretation of structural equation models. Journal of the Academy of Marketing Science. Doi: 10.1007/s11747-011-0278-x

Baridam, D. M. (2001). Research methods in administrative sciences. Sherbrook Associates, Port Harcourt.

Boone, H. N., & Boone, D. A. (2012).Analyzing Likert data. Journal of Extension, 50(2). Retrieved from http://www.joe.org/joe/2012april/t t2.php

CDC (2021). *Agriculture workers and employers: Interim guidance from CDC and the U.S. department of labour.* Retrieved 20-4-2021 from https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-agricultural-workers.html

FAO, Global food losses and food waste – extent, causes and prevention, 2011, http://www.fao.org/docrep/014/mb060e/mb060e.pdf.

FUSIONS (2016). Estimates of European food waste levels. Retrieved from: http:// www.eu-fusions.org/phocadownload/Publications/Estimates%20of%20European%20food%20waste%20levels.pdf.

Lehtinen, U., &Lehtinen, J. R. (1983).*Service quality: A study of quality dimensions*. [Unpublished manuscript], Helsinki, Finland OY.

Lehtinen, U., &Lehtinen, J. R. (1991). Two approaches to service quality dimensions. *The Services Industries Journal*, *11*(3), 287-303.

Mwango, A. (2010). The art and science of food garniture. Being thesis submitted to VaasanAmmattikorkeakouluUniversity of Applied Sciences. Degree Programme of Hotel and Restaurant business

Nachimias, C. &Nachimias, D. (1976). Research Methods in Social Sciences (Alternative Second Edition without Statistics).

Norman, G. (2010). Likert scales, levels of measurement and the laws of statistics. Advance in Health Science Education. DOI 10.1007/s10459-010-9222-y

NRDC, Wasted: how America is losing up to 40 percent of its food from farm to fork to landfill, 2012, https://www.nrdc.org/sites/default/files/wasted-food-IP.pdf.

Nunnally, J. C. (1978). Psychometric Theory (2nd Ed.). New York: McGraw Hill.

Nunnally, J. C., & Bernstein, I. H. (1994).Psychometric theory. New York: McGraw-Hill.

Oliver, R.L. and Swan, J.E. (1989) Consumer Perceptions of Interpersonal Equity and Satisfaction in Transactions: A Field Survey Approach. Journal of Marketing , 53, 21-35. https://doi.org/10.1177%2F002224298905300202

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: a multi-item scale for measuring consumer perceptions of the service quality. *Journal of Retailing*, *64*(1), 12-40.

Paswan A.K., Spears N. and Ganesh G. (2007) The Effects of Obtaining One's Preferred Service Brand on Consumer Satisfaction and Brand Loyalty. Journal of Service Marketing , 21, 75-78. https://doi.org/10.1108/08876040710737840https://www.researchgate.net

Productspeed (2020). Food presentation and general guideline. Retrieved from www.productspeed.com/wp-content/uploads/2020/05/food-presentation-and-general-giudeline-pdf.pdf

ReFED (2015). The multi-billion dollar food waste problem. Retrieved from www.refed.com/?sort=economic-value-per-ton.

The Culinary Institute of America (n.d). The professional Chef 8th edition. Retrieved from: www.ciachef.edu/uploadedfiles/pages/admissions_and_financial_aid/educators/educational_materials/technique_of_the_quarter/techniques-enhancing

Whitney, E.N. and Rolfes, S.R. (2013) Understanding Nutrition. 13th Edition, Cengage Learning, Wadsworth, 667-670. https://www.cengagebrain.co.uk/

Wikipedia (2022). Food processing. Retrieved from: www.en.m.wikipedia.org/wiki/food processing

Young, L. (2012). "Our biggest problem? Were wasting food. Retrieved from http://www.canadiangrocer.com/topstories/what-a-waste-19736

Ashwini, Awasthi,K. and Madhura Kane. 2014: Consumers perceptions and behaviour about brands: Effect of complaint resolutions on social media. International Journal of Marketing & Business Communication 3 (¾), 76-80.

Ateke, Brown, Walter and Onwujiariri Jane Chinyere. 2014: Relevance of excellent customer service in organisational competitiveness. West African Journal of Business and Management Sciences, 3(1),87-95.

Badghish, Saeed, A., John, Stanton and Johnatan Hu. 2015: An exploratory study of customer complaint behaviour (CCB) in Saudi Arabia. Asian Journal Of BusinessResearch, 2015, 49-67. https://doi.org/doi:10.14707/ajbr.150004

Day, Ralph L. 1984. Modeling Choices Among Alternative Responses to Dissatisfaction. Advances in Consumer Research 11. Ed. William D. Perreault. Atlanta, GA: Association for Consumer Research, 496-499.

Gelbrich, Katja and Holger Roschk. 2010: A Meta-Analysis of Organizational Complaint Handling and Customer Responses. Journal of Service Research, 14(1), 3-23.

Jacoby, Jacob and James J. Jaccard. 1981: The Sources, Meaning, and Validity of Consumer Complaint Behaviour: A Psychological Analysis. Journal of Retailing, 57, 4-24.

Nakibin, Davoud, Ishak, Ismail, Malliga, Marimuthu and Ismael Abu-Jarad. 2011: The impact of firm reputation on customers' responses to service failure: The role of failure attributions. Business Strategy Series, 12(1), 19-29.

Salami, Charles and EmuejeIbini. 2016: Customer relationship management and competitive advantage in the Nigerian telecommunication industry. Int J Original Res, 2(3), 124-135.

Roberts-Lombard, Mornay. 2011: Customer retention through customer relationship management: The exploration of two-way communication and conflict handling. African journal of business management,5 (9), 3487-3496.

Susskind, Alex M. 2005: A content analysis of consumer complaints, remedies, and repatronage intentions regarding dissatisfying service experiences. Journal of Hospitality & Tourism Research, 29(2), 150-169.

Tronvoll, Bård.2012: A dynamic model of customer complaining behaviour from the perspective of service-dominant logic. European Journal of Marketing, 46, 284-305.