# Acceptability of Spiced Plantain Chips among Visitors in Selected Tourist Centres in Ibadan, Oyo State, Nigeria

F. Ajani, D. O. Oshibanjo, and J. O. Oyebade

Abstract — Plantain chips is one of the products obtained from plantain. It is a popular snack among tourists and readily available in most tourist centres in some parts of Africa (such as Nigeria, Cameroon, Ghana, and Côte d'Ivoire). Plantain chips is a local snack and belongs to the category of chips. Chips generally are classified as unhealthy snacks which may contribute to health related problems if consumed in large quantity. This study aimed at assessing the acceptability of spiced plantain chips with onions and dry pepper among tourists in the University of Ibadan Zoological garden and Agodi gardens, Ibadan, Oyo State, Nigeria. A Pilot study was conducted before the execution of the main research. Seven samples of plantain chips were prepared in which five of the samples was spiced with onions and dry pepper (Ata ijosi) at different inclusion levels (2% and 4%) while two served as positive and negative control. A class of sensory evaluation test (Affective test) was used to assess the organoleptic characteristics of the samples. A panel of twenty people which comprised of lecturers and students of the Department of Wildlife and Ecotourism Management was set up for the assessment. The result showed that plantain chips samples at 2% inclusion levels of onions and dry pepper were mostly preferred for the pilot study and this was used for the main study. For the positive and negative control samples, the negative control was preferred over the positive control and this served as the control for the main study. Thus, three samples (sample A, B and C) were prepared for the main study in which two samples, A and B were spiced with onions and dry pepper while sample C served as the control. 210 copies of Questionnaire (105 in each tourist centre) and Sensory Evaluation Forms were administered to tourists in both tourists' centres using Convenience sampling technique. Data collected were subjected to descriptive (frequency and percentages) and inferential statistics (Analysis of variance and Multiple Linear Regression) using the SPSS software. The result of the sensory evaluation test among tourists revealed that the samples were significantly different in their sensory attributes from the control sample. Tourists preferred the spiced samples, A and B to the control sample, C. However, Sample A was mostly preferred with respect to its aroma, flavour, taste and overall acceptability. The result showed that spicing plantain chips with onions and dry pepper, especially onions may increase its consumption among tourists.

Index Terms — Agodi gardens, Spiced Plantain chips, Tourists, University of Ibadan Zoological garden.

#### I. INTRODUCTION

In recent years, tourism has boomed into an eyecatching industry across the world because of its

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significant role in stimulating consumption, promoting trade, and enhancing international communication. Many countries in Asia, Latin America, and Sub-Saharan Africa place a huge weight on the economic impacts of tourism [19]. Tourism is principally a service-based industry and the main product provided by tourism business is hospitality. The hospitality industry is a principal element of the tourism industry and considered to be one of the fastest growing industries worldwide contributing 10% to the world's gross domestic product. Hospitality is a fundamental feature of human life, and hospitableness indicates the willingness to be hospitable for its own sake, without any expectation of recompense or reciprocity [17] and [18]. It can be considered as a production and service industry. Preparing food and drink is under production industry while providing accommodation and serving prepared food and beverages are under service industry.

Food has been associated with travel from prehistoric times [5]. The relationship between food and tourism has progressed from traditional hospitality, cuisine, and gastronomy to the development of the innovative concept of food tourism [13]. According to [19], every tourist is a voye5ring gourmand. To survive in the first place, every tourist as an organism is in need of eating and drinking. This shows that food constitute a vital part of the touristic experience. One of the major elements of this important relationship is the development and promotion of local food [10] and [11]. Local food plays an important role as an innovative tourism marketing strategy, and as a tool through which to create economic linkages and development [27]. However, many tourist destinations overlook the potential benefits of promoting food. Instead of portraying food as a key tourist attraction, it is often marketed as part of other services and facilities, or as merely a secondary component of the tourism experience [5]. Also, [22] reported that destinations that use food as one of the products sold to tourists do not always do it effectively.

Plantain chips is one of the most popular products obtained from plantain [8]. It is a popular snack sold in stores or on the streets as vended food (RTE) in some parts of Africa (such as Cameroon, Nigeria, Ghana, and Côte d'Ivoire). It is a favourite snack among tourists and readily available in most tourist centres. In Nigeria, plantain chips is known as "ipekere" and "kpekere" in Southwestern and Eastern part of the country respectively. It is usually prepared by slicing the unripened or slightly ripened plantain with a diameter (2mm thick) in vegetable oil at the temperature between 160-170 °C for 3 to 5minutes. In some cases, it is spiced with sugar, onions, dry pepper, and other food items in order to enhance its taste. However, its

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acceptability among consumers especially tourists have not been assessed.

Several researches have been carried out on plantain chips, nevertheless, none focused on the acceptability of spiced plantain chips among consumers. [8] determined the effects of Aframomum danielli on the physical, chemical, and microbiological properties of fried plantain chips and its preservative effects. Similarly, [23] determined the effect of deep fat frying using different oils on the proximate, vitamins and mineral contents of unripe plantain. Furthermore, [2] determined the effect of frying temperature and time on the quality characteristics (colour, breaking force and moisture content) of plantain chips. Nevertheless, none of the research focused on the acceptability of spiced plantain chips among consumers especially tourists. Thus, this study aimed at assessing the acceptability of plantain chips spiced with onions and dry pepper among visitors.

# A. Hypotheses

- 1. H<sub>0</sub>: There is no significant difference in the acceptability of spiced plantain chips based on the organoleptic characteristics (colour, aroma, flavour, taste, crispiness and saltiness).
- 2. H<sub>0</sub>: There is no significant difference in the overall acceptability of plantain chips spiced with onions and dry pepper.
- 3.  $H_0$ : There is no significant relationship between tourists' selected personal characteristics and overall acceptability of spiced plantain chips.

# B. Limitations

The following limitations were encountered during the course of the research work:

# 1. Language barrier:

Most International tourists as at the time of the survey were from Non-English speaking countries and as a result, they were unable to participate in the research.

2. Nigerian's mentality: People were skeptical about eating food they were not acquainted with the source.

#### II. MATERIALS AND METHODS

# A. Study Area

The research was carried out in two Tourist centres (University of Ibadan Zoological garden and Agodi gardens) in Ibadan North local government, Ibadan, Oyo state, Nigeria. Ibadan North Local government is a Local Government Area in Ibadan, Oyo State, Nigeria. The University of Ibadan Zoological Garden was established in 1948 as part of the Department of Zoology in the University. It lies between latitude 0726576°N and longitude 0025369970° E. The Zoo was established primarily to support teaching and research works in the department of Zoology but also used also for conservation of endangered species of animals and entertainment purpose. The Zoo serves as a major point of attraction for tourist who visits the university and has received millions of tourists from its time of creation with a wide array of exotic species from different ecological zones of Nigeria and beyond.

Agodi Gardens (also called Agodi Zoological and Botanical Gardens) is a top notch recreational centre in the city of Ibadan, Oyo state, Nigeria near the Oyo State Secretariat complex. It was originally created in 1967 and managed by the then Western region. The site is located in a serene environment on 150 acres of land and serves as a major site of tourist attraction in Ibadan. It is usually patronized by families during festive periods and weekends. Agodi Gardens has a lot of nice features including a water park, children's play area, rides, picnic spots, restaurant area, a lake and a mini zoo. It is very serene, lush and green; perfect for photo shoots, prewedding shoots, picnics, garden parties, outdoor events, concerts and even weddings.

#### B. Method of Data Collection

## 1. Purchase of materials

Unripe plantain, dry pepper, onions, salt, and groundnut oil were purchased at Bodija market, Ibadan, Oyo State.

# 2. Preparation of plantain chips

Plantain chips was prepared in the Department of Wildlife and Ecotourism restaurant, University of Ibadan. The method of [16] was adopted in the preparation of the plantain chips. This method was an improvement of theirs because only the preparation of a control sample was made reference to in their book while two other samples were spiced in this research work with dry pepper and onions to enhance its taste, nutritional content and overall acceptability. Plantain were washed, peeled, sliced into round pieces, and fried at 160 °C.

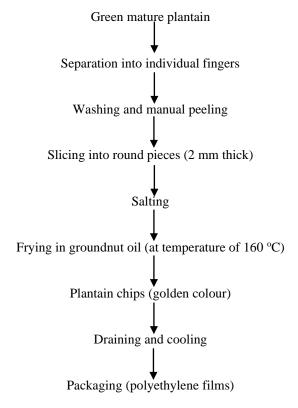


Fig. 1. Flow chart for the preparation of Plantain chips. Source: Adapted from [16].

# 3. Pilot experiment

A Pilot study was conducted in the Department of Wildlife and Ecotourism Management. Seven different

samples of plantain chips were prepared in which two served as positive and negative control and five of the samples were spiced with onions and dry red pepper (Ata ijosi) at different inclusion levels (2% and 4% respectively). The snacks were subjected to sensory evaluation test which was made up of twenty panelists (Lecturers and Students) of the Department. This was executed in order to know the best inclusion level of the spices that is acceptable by the panelists and this was used for the main study. The spices (dry red pepper and onions) were varied at 2% and 4% inclusion levels. A class of sensory evaluation test (affective test) was used to measure consumer's response and acceptability level of spiced plantain chips. Also, a questionnaire and Sensory evaluation form was designed to elicit information on the demographic characteristics of respondents and the sensory attributes of plantain chips.

Both dichotomous and multiple-choice questions were included in the questionnaire while hedonic scale with five point ratings from 1-5 (1- Dislike Extremely, 2- Dislike Slightly, 3-Neutral (Neither Like nor Dislike), 4-Like Slightly and 5-Like Extremely) was used to assess the sensory attributes of plantain chips. Section A of the questionnaire addressed questions on the sociodemographic characteristics of respondents such as their Age, Gender, Employment status, Education, Nationality and Marital status. Section B assessed the Consumption pattern of Plantain chips. Section C served as the sensory evaluation form and this assessed the sensory attributes of plantain chips such as colour, aroma, flavour, taste, crispiness, saltiness, and overall acceptability.

The result showed that plantain chips samples varied at 2% inclusion level was the most preferred for the pilot study and this was used for the main study. Furthermore, for the positive and negative control, the negative control sample was preferred, and this served as the control for the main study.

#### 4. Main experiment

Three different samples (samples A, B and C), most preferred for the pilot study were prepared in which two out of the samples (samples B and C) were spiced with onions and dry red pepper (table I) and these were replicated twice. For this study, the consumers were the tourists who visited the study areas at the time of the research. Each tourist was provided with three different samples of plantain chips (one control and two spiced samples).

TABLE I: METHOD OF PREPARATION OF THE SAMPLES OF PLANTAIN

	Cı	HIPS	
T., 1!		Samples	_
Ingredients -	A	В	С
Plantain (g)	500	500	500
Salt (g)	6.0	6.0	
Dry red pepper (Ata ijosi) (g)		10	
Onions (g)	10		

KEY: Sample A= Plantain chips + Onions at 2% (10 g). Sample B = Plantain chips + dry pepper at 2% (10 g). Sample C = Negative control (plantain chips only).

## 5. Sample size and sampling technique

The target population for the study consisted of visitors on visitation to the study areas during the execution of the research. Using affective test, a total number of two hundred and ten (105 in each tourist centre) tourists were selected from the study areas using convenience sampling technique. Tourists were selected based on their availability and willingness to participate in the research.

# C. Data Analysis

Data collected were subjected to descriptive statistics (frequency and percentages) and inferential statistics [One way Analysis of Variance (ANOVA), Multiple Linear Regression and Post hoc was done with Duncan multiple range test (DMRT)] using Statistical Analysis Software (SAS, 2002).

## III. RESULTS AND DISCUSSION

The result of the Socio-demographic factors of respondents used in the research is reported in Table II. It was observed that more than half (57%) of the respondents were male which corroborate the research of Ref. 1 that male gender visit ecotourist destinations than their female counterpart. According to them, the masculine gender likes to explore their environment than the feminine gender. Also, 46.2% of the respondents were within the age bracket 16-25 years which is consistent with the findings of [3]. [1] opined that youths participate more in tourism activities than other categories of people which is due to their vigorous nature and love for adventure. In addition, it was observed that more than half (74.3%) of the respondents were single. This is in accordance with [3] that singles participate more in tourism than the married people.

TABLE II: DEMOGRAPHIC CHARACTERISTICS OF TOURISTS

	Tourists		
Variables	F	%	
Gender			
Male	120	57.1	
Female	90	42.9	
Age			
16-25	97	46.2	
26-35	74	35.2	
36-45	26	12.4	
46-55	10	4.8	
56 and above	3	1.4	
Nationality			
Black African/American	2	1	
Nigerian	201	95.7	
Indian	4	1.9	
Chinese	1	0.5	
Myanmar	2	1.0	
Marital status			
Single	156	74.3	
Married	53	25.2	
Separated	1	0.5	
Employment status			
Employed full time	61	29	
Self-employed	57	27.1	
Out of work	2	1.0	
Student	88	41.9	
Retired	2	1.00	
Educational qualification			
SSCE/GCE	27	12.9	
OND/HND	30	14.3	
BSC/BA	100	47.6	
Masters' degree	37	17.6	
Doctorate degree	3	1.4	
Professional degree	3	1.4	

\* F = Frequency, % = Percentage.

Furthermore, the study also showed that both domestic and international tourists participated in the research, although the population of the domestic tourists (95.7%) was more than the international tourists (4.4%). [4], among other researchers also noted this. The low patronage of international tourists may be because of the insecurity issues in the country, which have internationally produced a negative image and labeled the country as an unsafe tourism destination. According to [6], crimes, violent acts and civil unrests are in abundance in Nigeria and this poses threat to the security of the nation. He also added that insecurity lowers or discourages investment level, destroys human and social capital, damages relationship between citizens and the state, and thus undermines democracy and the ability of the state to promote development.

Results on employment status indicated that majority (41.9%) of the respondents were students. This may be as a result of the proximity of the study areas to educational institutions: The University of Ibadan and The Polytechnic, Ibadan. More than half (68%) of the respondents possessed tertiary education. This agrees with the work of [25] that people of high level of education are likely to be more aware of the relevance of tourism in social development.

# A. Level of Awareness of Local Snacks by Respondents in the University of Ibadan Zoological Garden and Agodi Gardens

The result is reported in Table III. It was observed that more than half of the respondents (52.4%) were aware of local snacks in the two tourist centres and 47.6 % of the respondents reported that they were not aware of local snacks. This showed that local snacks are readily available in the two tourist centres. However, lack of awareness of some tourists may be attributed to the fact that they were first time visitors in the locations. Respondents also indicated the different types of local snacks available in the two tourist centres in which 42.4% rated plantain chips as the highest. This is because plantain chips are a popular plantain product readily available in most tourist centres in Nigeria.

Almost all (97.6%) the respondents have consumed plantain chips before. This is because plantain chips are a popular product sold in stores or on streets as vended food in Nigeria and some parts of Africa such as Cameroon, Ghana, and Côte d'Ivoire [8]. Furthermore, 52.4% signified that they consume it once in a while 30%, 8.1% and 6.7% indicated that they consume it weekly, daily and monthly, respectively. Moreover, 52.9% indicated that they have taken the spiced plantain chips before. It was reported that 36.7% identified pepper as the most commonly used spice to enhance the taste of plantain chips and 46.2% indicated that they preferred the spiced plantain chips to the normal

#### B. Result of the sensory evaluation of plantain chips

The result of the sensory evaluation test of the three samples of plantain chips is presented in tables IV and V. The samples were found to be significantly different in all their sensory attributes (colour, aroma, flavour, taste, crispiness, saltiness, and overall acceptability).

TABLE III: RESPONDENTS' AWARENESS OF LOCAL SNACKS AND PI ANTAIN CHIPS

Variables Variables	F	%
Are you aware of any local snacks in UI		
Zoo and Agodi gardens?		
Yes	110	52.4
No	100	47.6
If yes, please tick		
Dodo Ikire	8	3.8
Kokoro	2	1.0
Kuli-kuli	4	1.9
Plantain chips	89	42.4
Kilishi	7	3.3
Have you ever eaten plantain chips?		
Yes	205	97.6
No	5	2.4
If yes, how often?		
Daily	17	8.1
Weekly	63	30.0
Monthly	14	6.7
Once in a while	110	52.4
Have you ever taken spiced Plantain chips?		
Yes	111	52.1
No	88	41.9
If yes, identify the spice used		
Ginger	3	1.4
Onions	15	7.1
Pepper	77	36.7
Salt	10	4.8
Sugar	5	2.4
Yagi	1	0.5
Do you like the spiced plantain chips		
compared to the normal plantain chips?		
Yes	97	46.2
No	11	5.2

\* F = Frequency, % = Percentage.

#### 1. Colour

There were variations in the colours of all the samples. The control sample had a golden yellow colour which plantain chips is normally characterized with, while the spiced samples (Sample Band C) had different colours (i.e brownish yellow). This may be attributed to the addition of different spices used in their preparation which led to the decrease in color intensity with puffing of samples during frying as well as influence of higher temperatures and times on frying of the snacks. This validates the research of [2] that the colour intensity of plantain chips decreases progressively as the frying temperature and time increased. Generally, the more the frying time, the less the color acceptance of snacks. This shows that changes in colour will lead to lower colour quality on the surface of plantain chips. Therefore, the colour of the control sample (Sample C) was preferred over the spiced samples. This validates the research of [21], that colour is one of the most important quality parameters of fried snacks which is strictly related to consumer's perception. It is considered as one of the attributes critically assessed by consumers and often forms the basis for their selection or rejection of products.

## 2. Aroma, flavour, saltiness and taste

The likeness of the aroma, flavour and taste of the three samples of Plantain chips were totally different. The aroma, flavour and taste of the spiced samples (A and B) were preferred over the control sample. This was because of the inclusion of different spices (onions, salt and dry red pepper) used in their preparation. This is consistent [9] that spices are flavouring substances added to food to enhance savory. They enhance and complement flavor as well as

taste in foods with no detrimental effect on the organoleptic quality of the food [14]. Also, [24] opined that spices stimulate appetite and create visual appeals to food. This implies that the use of spices on plantain chips is acceptable by tourists and can be used as a tool to attract more tourists to tourist destinations.

#### 3. Crispiness

Crispiness is usually associated with the breaking force of a food. It is connected with rapid drop of force during mastication process that, in turn, is based on fracture propagation in brittle materials [20]. When force is applied to brittle snacks, rupture of the cellular structure occurs and in line with some deformation, generates a typical sound contributing to crispness sensation. The likeness of the crispiness of the three samples of plantain chips varied. Although, all the samples had low moisture content, the control sample (sample C) was mostly preferred over the spiced samples. This may be because the control sample was not spiced with anything and during the frying process, the pores of the plantain chips opened up leading to the formation of porous structures which resulted into the high level of crispiness. [28] opined that the more pores in snacks, the more crispness perception. In addition, [26] asserted that crispness of chips is a vital measure that determines consumers' acceptance. It is the most important textural attribute which denotes freshness and high quality.

TABLE IV: SENSORY ATTRIBUTES OF ALL THE SAMPLES OF PLANTAIN

CHIPS						
Variables	1	2	3	4	5	
Sample A						
Colour	42(17.60)	88(41.90)	67(31.90)	10(4.80)	3(1.40)	
Aroma	23(11.00)	81(38.60)	77(36.70)	25(11.90)	4(1.90)	
Flavor	26(12.40)	74(35.20)	82(39.00)	26(12.40)	2(1.00)	
Taste	23(11.00)	84(40.00)	70(33.30)	31(14.80)	2(1.00)	
Crispiness	61(29.00)	86(41.00)	53(25.20)	9(4.30)	1(0.50)	
Saltiness	20(9.50)	87(41.40)	70(33.30)	27(12.90)	6(2.90)	
Sample B						
Colour	37(17.60)	69(32.90)	75(35.70)	26(12.40)	3(1.40)	
Aroma	13(6.20)	62(29.50)	98(46.70)	32(15.20)	5(2.40)	
Flavor	14(6.70)	54(25.70)	90(42.90)	51(24.30)	1(0.50)	
Taste	16(7.60)	60(28.60)	93(44.30)	39(18.60)	2(1.00)	
Crispiness	43(20.50)	82(39.00)	65(31.00)	17(8.10)	3(1.40)	
Saltiness	19(9.00)	72(34.30)	81(38.60)	35(16.70)	3(1.40)	
Sample C						
Colour	101(48.10)	41(19.50)	39(18.60)	11(5.20)	18(8.60)	
Aroma	45(21.40)	37(17.60)	78(37.10)	27(12.90)	23(11.00)	
Flavor	47(22.40)	41(19.50)	67(31.90)	30(14.30)	25(11.90)	
Taste	48(22.90)	39(18.60)	70(33.30)	29(13.80)	24(11.40)	
Crispiness	86(41.00)	45(21.40)	45(21.40)	24(11.40)	10(4.80)	
Saltiness	28(13.30)	23(11.00)	62(29.50)	38(18.10)	59(28.10)	

Sample A = Plantain chips + Onions, Sample B = Plantain chips + Pepper and Sample C = Control.

Figures in parentheses represent percentage Overall acceptability.

According to [7], the overall acceptability of fried foods lies in their unique organoleptic characteristics, including flavour, texture and appearance. This acceptance is critical because of the specific quality attributes that attract people [20]. Generally, the spiced samples were rated higher than the control sample for the overall acceptability. Thus, sample A was mostly preferred over other samples by the tourists and its likeness was basically attributed to the sensory attributes (table V). This showed that the use of spices in the preparation of Plantain chips will lead to an increase in the acceptability among tourists especially the foreigners. This supports the work of [12] that food plays an essential role in tourism and can also serve as an effective tool to promote and position a destination.

TABLE V: OVERALL ACCEPTABILITY OF ALL THE SAMPLES OF PLANTAIN

	CHIPS	
Variables	Frequency	Percentages
SAMPLE A		
Like extremely	32	15.20
Like slightly	83	39.50
Neutral	77	36.70
Dislike extremely	17	8.10
Dislike slightly	1	0.50
SAMPLE B		
Like extremely	18	8.60
Like slightly	68	32.40
Neutral	98	46.70
Dislike extremely	24	11.40
Dislike slightly	2	1.00
SAMPLE C		
Like extremely	15	7.10
Like slightly	28	13.30
Neutral	65	31.00
Dislike extremely	44	21.00
Dislike slightly	58	27.60
Most preferred		
sample		
Samples		
A	107	51.00
В	59	28.10
C	44	21.00
Total	210	100
Reasons for their		
preference		
<ul> <li>Sensory attributes</li> </ul>	70	33.33
Taste	15	7.10
Aroma	7	3.33
Colour	8	3.80
Saltiness	7	3.33

Sample A= Plantain chips + Onions, Sample B = Plantain chips + Pepper and Sample C = Control.

## C. Result of the Hypotheses

Hypothesis 1

Ho: There is no significant difference in the tourist acceptability of spiced plantain chips based on the sensory attributes (colour, aroma, taste, flavour, crispiness, saltiness, and overall acceptability).

One-way Analysis of Variance (ANOVA) was used to test for the significant differences that exist among the samples based on their sensory attributes. The result revealed that there was a significant difference among the samples based on their sensory attributes (colour, flavour, aroma, crispiness, and overall acceptability). This shows that the addition of spices on plantain chips has a significant effect on its sensory attributes. Therefore, the null hypothesis was rejected, and the alternative hypothesis was accepted (Table VI).

Hypothesis 2

H<sub>0</sub>: There is no significant difference in the overall acceptability of plantain chips spiced with onions, dry pepper and the control sample.

One-way Analysis of Variance (ANOVA) was also used to test for the significant differences that exist among the samples based on the spiced plantain chips and the control. The result revealed that there is a significant difference among the samples based on the addition of spices

<sup>1 =</sup> Like Extremely, 2= Like Slightly, 3 = Neutral, 4 = Dislike Slightly, 5 = Dislike Extremely.

Therefore, the null hypothesis was rejected, and the alternative hypothesis was accepted (Table VII).

TARIEVI: ANOVA FOR THE SENSORY ATTRIBUTES OF THE SAMPLES

TABLE VI: A	ANOVA FOR TH	IE SENSOI	ry Attribut	ES OF THE S	SAMPLES
Variables	Sum of Squares	df	Mean Square	F	Sig.
Colour	•		-		
Between groups	17.22	2	8.611	7.675	0.001*
Within groups	703.510	627	1.122		
Total Taste	720.732	629			
Between groups	5.660	2	2.830	2.642	0.07
Within groups	671.571	627	1.071		
Total Flavor	677.232	629			
Between groups	10.867	2	5.433	5.057	0.01*
Within groups	673.705	627	1.074		
Total Aroma	684.571	629			
Between groups	6.298	2	3.149	3.038	0.049
Within groups	649.962	627	1.0337		
Total	656.260	629			
Crispiness Between groups	6.451	2	3.225	3.104	0.046*
Within groups	651.557	627	1.039		
Total	658.008	629			
Saltiness Between groups	0.867	2	0.433	0.370	0.69
Within	734.219	627	1.171		
groups Total	735.086	629			
Overall acceptability					
Between groups	6.438	2	3.219	3.293	0.04*
Within groups	612.933	627	0.978		
Total	619.371	629			

<sup>\* =</sup> Significant.

TABLE VII: ANOVA FOR THE OVERALL ACCEPTABILITY OF ALL THE

SAMPLES					
Samples	Sum of squares	Df	Mean square	F	Sig.
A					
Between groups	48.39	6	8.07	10.01	0.00*
within groups	1167.48	1463	0.80		
Total B	1215.87	1469			
Between groups	46.98	6	7.83	9.77	0.00*
Within groups	1172.52	1463	0.80		
Total C	1219.50	1469			
Between groups	99.766	6	16.63	10.32	0.00*
Within groups	2357.46	1463	1.61		
Total	2457.23	1469			

Sample A = Plantain chips + Onions, Sample B = Plantain chips + Dry pepper and Sample C = Control.

## Hypothesis 3

H<sub>0</sub>: There is no significant relationship between tourists selected personal characteristics and overall acceptability of spiced plantain chips. Multiple Linear Regression was used to test for the relationship between tourists' sociodemographic characteristics and the overall acceptability of spiced plantain chips and the control sample. The result revealed that there was no significant relationship between tourists' socio-demographic characteristics and their overall acceptability of plantain chips. In other words, gender, age, marital status, nationality, employment status and educational qualification do not influence the level of overall acceptability of plantain chips. Therefore, the null hypothesis was accepted, and the alternative hypothesis was rejected (Table VIII).

TABLE VIII: TEST OF HYPOTHESIS 3 ON ALL THE SAMPLES

TABLE VIII: TEST OF HYPOTHESIS 3 ON ALL THE SAMPLES						
Variables	Beta	t	P	Inference		
Sample A						
Gender	-0.04	-0.53	0.60	Not		
				significant Not		
Age	0.05	0.50	0.62	significant		
				Not		
Nationality	-0.04	-0.48	0.06	significant		
Marital status	0.07	0.67	0.50	Not		
Maritai status	0.07	0.67	0.30	significant		
Employed	0.04	0.55	0.58	Not		
Zimprojed	0.0 .	0.00	0.20	significant		
Education	0.07	0.97	0.33	Not		
Sample B				significant		
•				Not		
Gender	-0.01	-0.18	0.86	significant		
A 90	0.00	0.04	0.97	Not		
Age	0.00	0.04	0.97	significant		
Nationality	-0.11	-1.55	0.12	Not		
				significant Not		
Marital status	0.04	0.39	0.69	significant		
				Not		
Employed	0.02	0.26	0.79	significant		
Education	0.13	1.73	0.09	Not		
	0.13	1./3	0.09	significant		
Sample B						
Gender	-0.09	-1.19	0.24	Not		
				significant Not		
Age	-0.10	-1.04	0.30	significant		
				Not		
Nationality	-0.07	-0.99	0.33	significant		
Marital status	0.12	1.18	0.24	Not		
iviaiitai status	0.12	1.16	0.24	significant		
Employed	0.03	0.45	0.65	Not		
	****		~-~	significant		
Education	0.12	1.70	0.09	Not significant		
				significant		

### IV. CONCLUSION AND RECOMMENDATIONS

Local snacks form part of the food chain as well as local economy and this can be used as a marketing strategy to promote a destination. Also, like other aspects of tourism such as transportation, accommodation, etc. it can be used to sustain tourism in a destination. Thus, in this research, it was observed that addition of spices (especially onions) in the preparation of plantain chips was acceptable among tourists. However, the level of acceptability of the colour of the spiced samples was low in relation to the control sample. This shows that the respondents preferred the

<sup>=</sup> Significant.

colour of the control sample to be maintained in the spiced samples. Therefore, there is need to devise a means of replicating the colour of the control sample in the spiced samples to enhance its attraction and acceptability by consumers. Also, awareness should be created on the use of food to promote a tourist destination and local spices should be used in the preparation of food (especially snacks) because of its nutritional content.

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