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Analysis of Factors That Influence Consumers' Acceptance Of Local Rice In South East Nigeria

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Abstract
This study examines the variables that influence consumers' acceptance of local rice in South East Nigeria from the perspectives of trust in technology processing and marketing factors. The research will cross sectional survey and correlational evidence from household consumers of rice where data required for the study were generated with the instrument of questionnaire. A sample of 400 respondents was elicited from a finite population of household rice consumers' resident in the five (5) South East Nigeria using a stratified random sampling and purposive non probability sampling techniques. Of this number, 366 copies were usable. The data were cross tabulated and analysed with descriptive statistics and the hypotheses were tested with Pearson product moment Correlation (PPMC) and multiple Regression. Findings indicate that trust in technology of processing and marketing factors influence consumers' acceptance of local rice. However, marketing factors have more influence than trust in technology of processes. The study therefore recommends that given the increasing importance of technology, it would be interesting that a modern and automated milling sector be developed alongside the small, private milling sector. This will be able to carter for the production needs for increased quality rice production of which consumers are interested in. In addition, government should lay a concrete plan for local rice production and marketing, involving private sector investment in efficient rice processing using mini rice meals with built in capacity for the stoning, polishing and sorting homogenous high quality rice.
Keywords: Consumer Acceptance; Local Rice, Marketing Factors, Technology of processing, Rice consumers, South East Nigeria
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1. BACKGROUND

The acceptance of local rice for household and general consumption varies across different geo political zone of Nigeria. This is associated with the different cultural and traditional food consumption pattern of the area, availability of the local rice, as well as the nutritional and psychological value attached to it (Ogundele, 2014). Thus, when information regarding the variables that can affect local rice acceptance is available to consumers, it could lead to increased positive behavior of consumers towards its acceptance especially locally produced rice. Locally produced rice in Nigeria at present is uncompetitive in the market because its value chain is fragmented and cannot offer a standard. This uncompetitiveness it is believed, is caused by poor processing and low marketing interest (Ugalahi, Adoeye & Agbonlahor, 2016). To compound this problem, local rice arguably is believed to be fraught with poor quality- presence of extraneous materials such as stones and debris, hence consumers are weary of picking stones from local rice. Secondly because all operations are manual, cost of production is also high thus, technological of process milling and production of local rice could be the variables that if enhanced, could lead to increased acceptance of rice by consumers.

Furthermore, highlighting the importance of advanced milling, processing and quality enhancement of locally produced rice, Longtau (2003) noted that earlier attempts to be self sufficient in rice production were partly frustrated by foreign large mills who took advantage of policy lapses to focus on brown rice importation rather than encourage paddy production by farmers. In the same vein, rice suffers from another factor which is that it is not a raw material for any industry, noting that the breweries drive sorghum, textiles drive cotton and the pharmaceuticals drive cassava whilst there was none to drive local rice. Interestingly, local rice cultivation provides livelihoods for many producers, processors and vendors in Nigeria. However, it does not satisfy the totality of consumer demand in the country. Nigeria imports an average of 1.7 million tonnes of white rice annually, making the country the world's second-largest rice importer (Emodi & Madukwe, 2008), however, the cost of these rice imports represents a significant amount of lost earnings for the country in terms of jobs and income (UNEEP, 2015; Emodi & Madukwe 2011).

Milling in Nigeria has witnessed a fairly basic processing technology on both aspects of parboiling and milling. But typical issues faced are lack of access to improved technology, high cost of energy for parboiling, low output quality and limited government incentives (Longtau, 2003). Domestically milled rice produced with local technology is poor in quality and small portion of the milled rice is made available at the urban market. Most previous studies do not recognize the need for quality of milled local rice to be moderated by consumer's acceptance behavior at the market place (Danso – Abbeum, Armed & Baidoo, 2014). Ajijola et al, (2012), posit that most post-harvest and processing are primitively done at cottage industries made up of small operators that lack silo lease architecture. Furthermore, according to Danquah and Eqyir (2014) the complete milling and polishing that converts brown rice into white rice destroys essential nutrients. Efficient processing through mills afford opportunity to establish customer – seller ties, at the same time increase the work to the customers and suppliers specific investment and thus ensures efficient and effective marketing of the produced rice.

Marketing of local rice is another factor or variable that could affect the acceptance and consumption of the locally produced rice. It has been argued that there is the dominance of value chain by trade on Traditional markets (Ajijola et al, 2012; Osuoha, 2014). Measures to stimulate investment, such as concessional loans for investment in processing, are increasingly attracting foreign capital. The marketing factors of promotion, pricing, packaging and distribution are ignored whilst care and attention is paid on these by foreign rice producers and dealers (Emodi & Madukwe, 2008). In order to promote sustainable consumption of local rice, there is need for the quality characteristics of local rice to match with the imported rice brand using marketing variables to create value proposition.

Sadly, government has focused so much on supply side with no policy on increased demand for local rice hence this research is to investigate the factors that influence acceptance of local rice in South East Nigeria. Government and non-governmental organizations have encouraged consumers acceptance of local rice, but results have remained unsatisfactory as consumers do not show interest in local rice. We do not know whether marketing factors and trust in technology of processing amongst others are the factors that influence consumers' acceptance of local rice in South East Nigeria.

Although studies that exist within Nigeria, provides information on the factors that influence consumers' choice towards local rice by looking at the whole consumers' in the nation however regionalised consumption patterns were not provided. Studies such as (Ogundele 2014, Okeke et al, 2015) in recent times focused on the consumption pattern of the Northern and Middle belt region, while little research is conducted on the consumers in south Eastern region and their rice consumption pattern and influencing factors. This study therefore tries to fill this gap created by empirically investigating the variables that influence consumers' acceptance of local rice in South East Nigeria with a view to providing information on the influence of perceived trust in technology of processing, and perceived marketing factors variables of local rice acceptance.

1.2 Study Objectives

The general objective of the study is to evaluate the variables (factors) that influence consumers' acceptance of local rice in South East Nigeria, the specific objectives are

- To determine the extent to which Trust in technology of processing influences consumers' acceptance of local rice in South East Nigeria.
- To determine the extent to which perceived marketing factors influences consumers' acceptance of local rice in South East Nigeria.

1.3 Research Questions

The following research questions were drawn out to empirically address the objectives of the study:

- To what extent does Trust in technology of processing influence consumers' acceptance of local rice in South East Nigeria?
- To what degree does perceived marketing factors influence consumers' acceptance of local rice in South East Nigeria?

1.4 Formulation of Hypothesis

Based on the objectives and research questions, the following null hypotheses are formulated to empirically address the issues raised:

- **Ho_1:** Trust in technology of processing does not influence consumers' acceptance of local rice in South East Nigeria.
- **Ho_2:** Marketing factors do not influence consumers' acceptance of local rice in South East Nigeria.

1.5 Significance of the Study

The findings of this study will be useful to various stakeholders: the federal, state and local governments; the consumers as well as marketers and dealers. The result of the study will bring about an improvement of marketing strategies adopted by dealers and marketers that will lead to the choice of locally produced agro products. In addition, time, energy and resources will be saved when the relevant marketing strategies are identified for emphasis by investors in production and processing. Further, the government both federal and state, even private sector will have an informed platform to formulate policy framework that will further encourage the production and marketing of locally produced rice and as well bring about the need to accept it better than the imported one. Academics will also benefit from the findings of this study as it will serve as valuable resources materials to various scholars in the field of agricultural marketing, sociology, management as well as postgraduate students undertaking courses in the areas of communication strategies and model building. Consumers will use the re-directed local rice strategy to make informed choice, make the chain buyer-driven and enhance sustainable agro business.

1.6 Scope of the Study

Thus, for the purpose of this research, the scope of this study is consumers' choice of local rice focusing on consumers in South Eastern region of Nigeria. These are those in Ebonyi, Enugu, Anambra, Abia and Imo states, looking at their acceptance and consumption behaviour towards local rice produced in the region with a focus on the marketing and processing technology factors .

2 THEORETICAL FRAMEWORK:

This study is anchored on the theory of Planned behaviour. Regardless of its limitations, it is proven to be the most suitable for studying consumer behavior especially as it concerns the consumption of a commodity. In addition, this theory is based on consumer behaviour which has responded to the conception and growth of modern marketing to encompass the more holistic range of activities that impact upon the consumers decision (Blackwell, 2001).

2.1 Theory of Planned Behaviour

This theory used to explain individual compliance and acceptance. This theory states that the immediate antecedent and determinant of behaviour is the intention behind that behaviour. Intentions are the motivational factors that influence behaviors that are under the volitional control of the individual (Ajzen, 1991). Volitional control behaviour is one in which the individual can decide at will to perform or not to perform the behavior, hence planned behavior. Again, this advocates that people can be encouraged to always decide to choose a product or service. Therefore, people in the region could decide on their own to accept and consume local rice – especially when it can be afforded by them and when there are aware of such product. Additionally, the theory of planned behaviour was intended to explain all behaviours over which people have the ability to exert self control. The key component of this model is behavioral intentions which are influenced by attitude about the likelihood that the behaviour will have the expected outcome and the subjective evaluation of the risks and benefit of that outcome. The theory of planned behavior states that behavioral achievement depends on both motivation (intention and ability) and behavioral control. It distinguishes between three types of belief: behavioral, normative and control as shown in fig 2.1

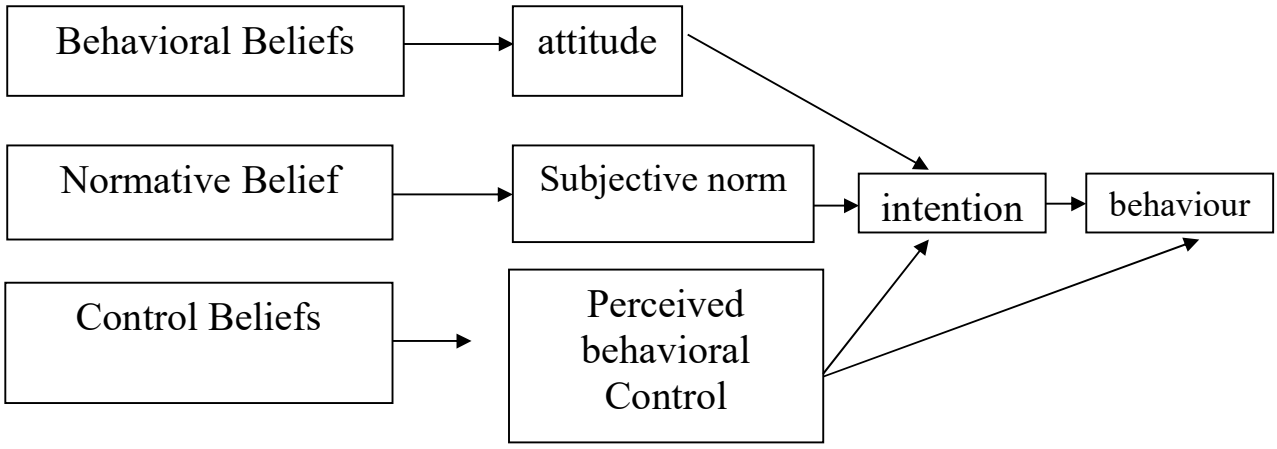

Fig. 2.1 Theory of Planned Behaviour (Source: Ajzen, 2006)

The construct "perceived behavioral control" is formed by combining the perceived presence of factors that may facilitate or impede the performance of a behaviour and the perceived power of each of these factors. Actual behavioral control refers to the extent to which a person has the skills, resources and other necessities required to perform a given behavior. Actual behavioral control is difficult to measure and perceived behavioral control is measured along specially designed questionnaire. Behavioral intention is controlled by a dynamic mix of the attitude, subjective norms and perceived behavioral control variable. According to Ajzen (2006) actual behaviour is again derived largely from behavioral intention but it is mediated to some degrees by perceived behavioral control.

2.2 Literature Review

In other to have a unified view of consumers' behaviou towards local rice, it becomes necessary to have a balance view of similar work being carried out by eminent scholars in similar areas.

Ugalahi, Adeoye & Agbonlahor (2016) in their study looked at irrigation potentials for enhanced rice production in Nigeria. The study revealed that the prospects of achieving rice self sufficiency through irrigation farming is hampered by some major challenges namely-underdeveloped subsector promoted by fragmented, inconsistent and unimplemented policies, multiple water regulatory institutions with overlapping and duplicating mandate and poor management system. It further revealed that the absence of a viable market for local rice as well as high cost of labour inputs, irrigation equipment and other operating costs are some of the other challenges that hampers the quality production of local rice in Nigeria. The study concluded that for Nigeria irrigation potentials to be harnessed towards rice self-sufficiency there is need to amend policies on irrigation and water resources, create conducive market for local producers and provide subsidized and appropriate farm implements

Costa Front (2009) used structural equation modeling to examine the casual link in the behaviour process that drives individual's perception, choice and acceptance of G.M food. The study employed a large representative sub sample of microdata of the Eurobarometer, 2002 data base for the three countries of Spain, Greeze and Italy. The questionnaire was structured using 3-point Likert, scale in presenting a general cross-country description of evidence in Spanish, Italian and Greeze behaviour towards biotechnology application. Our results suggest that acceptance of Genetically modified food is still in a very early stage of behavioural process that has both knowledge and time dependence constraints (experience). Policy implication for the consideration of trust in technology does not exert an influence, on analogic decision making conceptualization of risk and benefit perception.

In a similar vein, Ajijola, Usman, Egbetokun, Akoun & Osalusi (2012), appraised rice production in Nigeria, focusing on the North central states, looking at how quality can be improved upon through improved production method. Using secondary data of rice cultivation and output between the period of 1994/1995 to 2005/2006 cropping season) collected from National Bureau of Statistics. For the area of land used for rice cultivation, the regression model was tried under the four basic functional forms and the double log function was chosen as the

lead equation. The study revealed that all explanatory variables had positive influence on rice output. It is therefore, recommended that the only sustainable and socially acceptable way forward is to enhance the competitiveness of local rice against imported rice, both in terms of quality and price. Whilst quality, technological innovation as well as marketing factors are identified as essential for local rice production, acceptance and consumption in other to attain self-sufficiency in food production, socio economic factors also play great role towards this.

The findings of the study of Osuoha (2014) reveals that there is a wide demand and supply gap, low share of the market by the locally produced rice, which has been demonstrated by the generality of Nigerians preference for imported foreign rice to our local rice as well as inadequate availability of improved rice grains hence, it becomes so challenging to have a maximum yield which are some of the areas policies have not been able to tackle. The study however concludes that the adoption of technologies and methods used in other nations such as the Sawah Technology should be adopted :

Similarly, Oyibo, Omelehin & Abdulsalam (2013) used well structured questionnaire to ascertain the determinants of rice consumption in Kaduna. Key household consumption data was obtained from sample of 310 household and analysed with LA-AIDS model. The results show that price of rice, price of beans, price of maize, food expenditure, household head, household income, and the number of household income earned were all significant in influencing household demands for rice. From the study, it is recommended that efforts at increasing supply of local rice should be intensified so as to reduce the prices of local brands and enhance demand for local rice.

Danso-Abbeam, Armed & Boidoo (2014) Used logistic regression model and kendell's coefficient of concordance to analyze the determinants of consumers preference for domestic rice and some of the factors inhibiting the patronage of local rice in the Tamale metropolis of Ghana. The study followed a multi stage sampling techniques after using a stratified sampling to select six communities and simple random techniques to select 29 respondents from each community bringing the total respondents to 100. Semi structure questionnaire were used. The result showed that 93% of respondents consumed local rice but only 26% consumed more local rice than imported rice. The result indicate that the key variables that influence consumers preference for local rice include: age,, household size, monthly expenditure on food and taste. The result also indicated that poor packaging of local rice is a major factor inhibiting local rice patronage. It is then recommended that investment in rice development and deployment of rice varieties to improve its taste is required. Processor should improve on packaging so as to make it competitive.

Kassali, Kareem, Oluwasola & Ohagbulem, (2010) used a cross sectional consumer Survey of 400 rice consumers selected randomly from 5 local government areas to analyse the determinants of demand for rice, identify the different rice brand, that are mostly consumed and also determine the relationship of other food item, the nature of rice as a consumer goods. A random sampling techniques was used to select respondents from the area. The findings revealed that price of rice, income of household head, price of substitute goods and size of household heads have significant influence on the demand for rice. Various rice brands are consumed and all others appear to be foreign rice.

Ogundele, (2013) analyzed the market characteristics system for rice in Kaduna and Ogun states using eight (8) markets selected from two (2) states. From each market, a sample of five (5) local rice markets were randomly selected bringing to a total sample size of 40 markets from the two states. In-depth interviews were conducted among the representatives of wholesalers and retailers including officials of the State ADP. Content analyses blended with inferential statistics were the analytical techniques. Findings showed that the degree of product specialization is very low. Similarly, the degree of product differentiation is also low. The degree of price differentiation is relatively high. There are no entry and exit barrier. Grading and standardization still remain a critical challenge and not much is being done with regards to packaging.

2.3 Conceptual Review

Concept of consumers' acceptance

One can make decision between imagined options on local food which collaborate with each other leading to action or behaviour. Foods are not simply chosen because they are liked but other reasons in addition to taste, small and pleasurable appearance and these are seen as post-injective consequence of consuming a

particular food. They form the complex motivators and are regarded as cognition, instinct and feelings. Acceptance of local rice is the process of using local rice based on values attached to it. Acceptance focuses on thought mechanism arising from rationality, intuitiveness recognition and the totality of the above. According to Bates (2009) acceptance of a particular commodity involves either a measure of those quantities bought or of the number of consumers' who buy the commodity for use when the alternatives are offered in conjunction with the price and income structure which are known. Acceptance in the context of local rice could be seen as the intention to buy the locally produced rice for use when the alternatives(foreign rice) are offered with price and the income of the consumers that are determined. Usually food choice and preference are developed through exposure to the physical characteriatics of food combining environmental, psychological accessibility and the combined of these factors. Food preference is the degree of like or dislike for food and it can exist without consumption but food acceptability denotes the food consumption accompanied by pleasure.

Perceived Benefits and Risks involved in the Construction of Consumers' Attitude

The consumer behaviour paradigm focuses on how the intrinsic and extrinsic attributes of food affect purchase decision. This enable the influence of convenience, price and other explicit attributes of food acceptance (Tregear & Ness, 2005; Chambers et al, 2007) to be assessed along more abstract factors for example, healthiness, environmental and welfare benefits. In addition to broader attitudes towards food, local foods are generally perceived as being higher in quality (Murdock et al 2000). This study is made to determine whether actual purchasing behaviour reflects the stated attitude which consumers of local rice appear to have towards locally produced rice in a situation where consumer benefits are made explicit. Perceived benefits are believed to be crucial for the acceptance of food products. Since locally processed rice are perceived as possessing moderately severe risk and as unknown risk they should be processed under the condition that potential risk be avoided (Chem & LI, 2006). The consumers' attitude is tested as a tendency to evaluate a particular entity with a certain degree of favour or disfavour. A specific attitude can be used to explain why some people support particular brand and why others oppose them. According to Bredahl, (2001) attitude towards the use of genetic modified food is determined by both perceived risks and perceived benefit. Perceived risk is the consumers perceptions of importance and the possible undesirable consequence of using the system (Lee 2009; Tanakinja et al, 2010).

Perceived trust in technology of processes on acceptance decision of local rice:

Consumers often employ social trust to cope with lack of knowledge about a new technology (Siegrist & Cvetkovich, 2000; Chem & Li, 2006). Social trust refers to people's willingness to rely on experts and institutions in the management of risks associated with technologies. Such trust in regulation, science and industry is likely to be particularly important if the public perceived that they have no control over a particular activity, but must confer responsibility for insuring consumers protection or public welfare onto others (Frewer et al, 2004). When people cannot assess benefits and risk directly, they rely on information given by experts or other sources. Siegrist (1999, 2000) demonstrated that trust in companies and scientists conducting research in the area of gene technologies has a strong effect on personal perception of the risk and benefits associated with those technologies. (Chem & Li , 2006) argued that consumers trust in institutions involved in using or regulating gene technology is positively related to perceived benefits but negatively related to perceived risks. Trust is directly related to individual values and it is envisaged as key element of choice of biotechnology and otherwise (Siegrist et al, 2000; Huffman et al, 2004). (Savadori et al, 2004) revealed that providing information on the benefits could reduce public perception of risk from technology application. In the areas of food production and processing, there is lack of efficient risks and benefits communication in part due to the existence of scientific uncertainties resulting from a wide range of information sources (Costa-front & Mossiales, 2007). Therefore, there is the need to investigate this relationship towards consumers' acceptance and preference for local rice. Several studies have revealed varied relationships amongst these variables when empirically examined.

Marketing factors and acceptance decision of local rice:

Marketing variables have been pointed out to have explained the behavioral processes associated with the acceptance of rice because it has been able to provide the source of market information of product attributes. (Hoban, 1997) suggest that reliable information source increases consumers' choice and acceptance in US and Japan. If individuals attitude are strongly related to value or general attitude due to lack of information, contradictory belief or lack of involvement will be observed. (Frewer et al ,1998) highlighted the relevance of effective risk benefit communication strategies, not only in the acceptance of a new technology but also in the crises context so as to enable consumers' make informed choice. Kotler et al (2010) argued that poor market

funding has effect on product choice and acceptance. Accordingly, the idea may suggest that market may be over estimated or that the actual product was not properly designed. It could also suggest that the product has been mutually positioned in the market, priced too high, poorly advertised, packaged and labeled low. Promotion, being an important marketing mix is communicated to audience with a view to informing them and influencing their attitude and purchase intention (Zallocco & Kincard, 2008; Marlia et al, 2010). (Opoku & Akorli, 2009) concluded that marketing factors of packaging, advertising etc, have impact on consumers buying decision hence the hypothesis.

2.4 Conceptual Framework

The conceptual model was formulated to test the hypothesized relationship among perceived marketing factor and trust in technology of processing as having both direct and mediated effects, on consumers' acceptance. Diagrammatically, the conceptualization of this study is represented below.

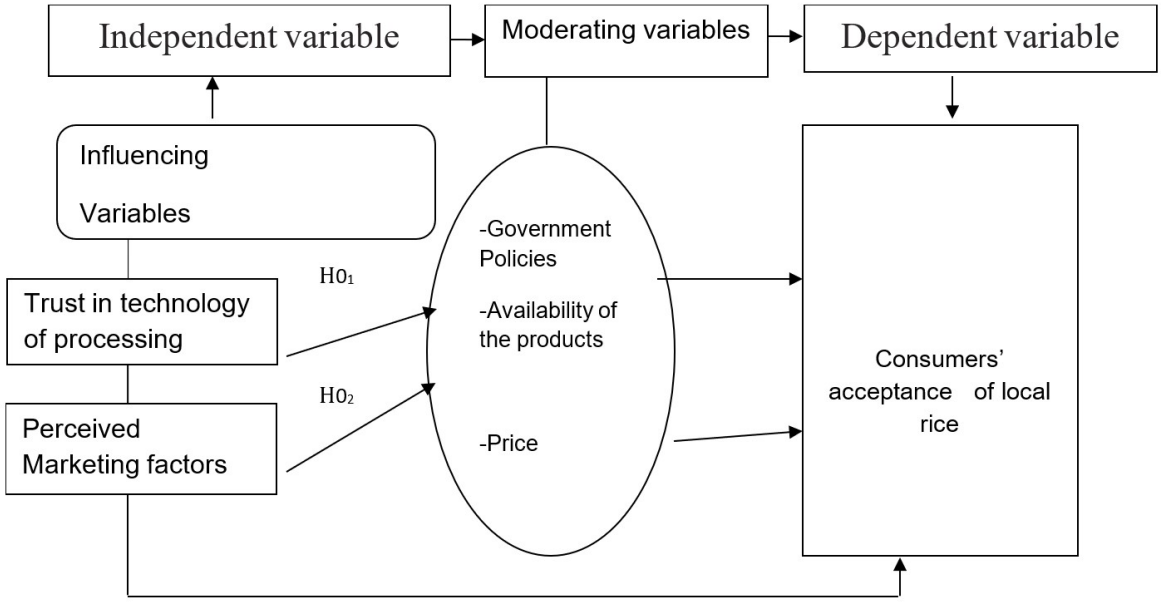

Fig 2.2: Proposed Conceptual Model of variables influencing consumers' acceptance of local rice. (Source: Researcher Conceptualisation from data, 2016)

3. RESEARCH METHODOLOGY

The cross sectional survey design was utilized for this study with a focus on the consumers in five (5) states of the south Eastern Nigeria. the population of the study consist of 16,481, 729 residents of the five states of the south Eastern region, ranging from the age of 18 years and above who are legally able to make choice regarding rice consumption. Using Taro Yamene, stratified and purposive non probability sampling technique 400 respondents were sampled and questionnaires issued to them. Of this sample, 366 respondents were usable for analysis.

3.1 Data Sources and validation

Primary data source was used for the study. Primary data was collected with the use of structured questionnaire which was designed to address the variables identified and reviewed in this study. Five point Likert scale was used to structure and rate the questionnaires and Pilot study was conducted to ascertain the face validity of the instruments. Convergent validity, (determined by the validity of the construct) was observed with correlation coefficient value of 0.7705 and was deemed valid, while reliability of instruments was tested using Cronbach's alpha test with a threshold of 0.894 Cronbach's alpha coefficient value, and thus was considered reliable for the study in accordance with Warri et al (2010); Cooper and Schindler (2003) and Maholtra and Birks (2007).

3.2 Data analysis Tool

The data gathered from the questionnaire were analyzed using, Pearson product moment correlation (PPMC) and use of multiple regression analysis. Using Statistical Package for Social Sciences (SPSS) software (version 19), the variables were subjected to complementary statistical test and the results were used for analysis and for hypothesis verification.

4. ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Data collection and analysis

Instrument for data collection in this study was the use of questionnaire which were administered and collected from sample of household and individuals who constitute the consumers of local rice in South Eastern Nigeria. Consequently four hundred copies (400) of the questionnaire produced were distributed to the respondents. However 366 copies were usable of analysis.

Table 4.1: Trust in Technology of processing as a dimension of influencing variables of the acceptance of local rice

	QUESTIONS	RESPONSES						
S/N	Opinions	NT(1)	SD (2)	DA (3)	AG (4)	(SA) (5)	Total	Mean
5	Small scale operators mill rice efficiently for consumption	51	9	44	177	85	**366**	**3.6**
	Percentage (%)	3.6	1.4	10.0	53.0	32.0	**100**	
6	Government regulation on rice is encouraging local production	38	10	70	156	92	**366**	**3.7**
	Percentage (%)	2.8	1.5	15.5	46.2	34.0	**100**	
7	Research on local rice is encouraging the quality of it	64	18	48	136	100	**366**	**3.5**
	Percentage (%)	5.0	2.8	11.2	42.2	38.8	**100**	

All measures used 5 – point likert scale (Source: Field survey; 2016)

Table 4.1 is an indication of responses on the trust in technology of processing and the associated benefits. From the table above, 32% of the respondents strongly agreed that small scale operators mill local rice efficiently for consumption. This may suggest that local processors need modern equipment with up to date facilities and accessories. 53% agreed while 10% of the respondent disagreed while 4% are neutral. Similarly, on whether government regulation on rice is encouraging local production, the responses show that 34% strongly agreed, 46% agreed while 16% disagreed and 3% neutral. This may suggest that although, Government is making effort to encourage the production of local rice, yet somewhere along the line of the value claim, technology of processing has not completely paved way for total acceptance of local rice. On the issue of research encouraging local production, the responses indicate 39% of the respondents strongly agreed while 42% agreed that scientists researching on local rice is doing good job on the quality of local rice. Furthermore, 11% however disagreed while 5% were neutral to the issue. The mean value indicate weak but positive values.

Table 4.2: Marketing factors as a dimension of influencing variables of the acceptance of local rice

	QUESTIONS	RESPONSES						
S/N	Control	NT(1)	SD (2)	DA (3)	AG (4)	(SA) (5)	Total	Mean
8	Local rice is considered because it is cheap, and available around us	17	5	18	134	192	**366**	**4.3**
	Percentage (%)	1.1	0.6	3.4	34.0	60.9	**100**	
9	The people around me approves of me using local rice due to its advertising and promotional influence	37	11	23	123	172	**366**	**4.0**
	Percentage (%)	2.5	1.5	4.7	33.2	58.1	**100**	
10	The packaging and labeling of local rice is important when I want to buy	28	6	14	136	182	**366**	**4.1**
	Percentage (%)	1.8	0.8	2.7	35.4	59.3	**100**	

All measures used 5 – point likert scale (Source: Field survey; 2016)

Table 4.2 above depict consumers responses on the marketing factor. As it clearly indicated, 61% of the respondents strongly agree that it is necessary to consider locally produced rice because it is cheap and available around them. The distinction further shows that 0.6% of the respondents strongly disagree with the statement while 1% of the respondents were neutral in their responses. Furthermore, 58% of the respondents strongly agree that consumers consider the influence of people around them urging them to go for local brand rice. This is further buttressed by majority support (32% agreed as well) and 1.5% of the respondents strongly disagreed whilst 2.5%were neutral to the statement. Examining the importance of packaging and labeling of local rice for its choice, 59% of the respondents strongly agreed with the statement. 35% agreed as well, 2.7% indicated that they strongly disagreed, 0.8% disagreed while 1.8 were neutral. However, the positive mean value of the respondent attested to the importance of packaging and labeling as a factor for local rice choice and preference.

Table 4.3: Consumers acceptance of local rice as a measure of acceptance of local rice

	QUESTION	**RESPONSES**						
S/N	Opinions	NT(1)	SD (2)	DA (3)	AG (4)	(SA) (5)	Total	Mean
24	I would purchase local rice if it is cheap and affordable	49	7	31	136	143	**366**	**3.9**
	Percentage (%)	3.5	0.9	6.6	38.5	50.5	**100**	
25	I would buy local rice if it has good aroma and taste	39	8	24	152	143	**366**	**4.0**
	Percentage (%)	3.0	1.2	5.6	35.1	55.1	**100**	
26	I would buy local rice if it has attractive grain size without stones	38	7	28	124	169	**366**	**4.0**
	Percentage (%)	2.6	1.0	5.7	33.6	57.1	**100**	

All measures used 5 – point likert scale (Source: Field survey; 2016)

4.2 Test of Hypothesis

Ho1: Trust in technology of processing does not influence consumers' acceptance of local rice in South East Nigeria.

Although table 4.1 shows the weak but positive mean value of the responses but it is not enough to conclude on that disposition. It therefore calls for a statistical analysis using the SPSS output as could be shown in the tables that follow.

Table 4:4 Single effect correlation

		Trust in technology of pricing	Consumers' choice of local rice
Trust in technology of processing	Pearson's' correlation (2-tailed)	* *	.9136 .0301
		4	3
Consumers' Choice of local rice	Pearson's correlation (2-tailed)	.9136 .0301	
	N	4	

** Correlation is significant at 0.05 level (2 – tailed)

Table 4.5: Single effect regression

R	R Square	Adjusted R Square	Standard error	F Cal	Sig (2-tailed)
.9136	.099766	.99688	22.60585	1278.48185	.0301

Table.4.6: Multiple effect correlations

		Trust in technology of processing	Consumers' choice
Trust in technology of processing	Pearson's' correlation sig (2-tailed)	* *	.9119 .2693
		N	3
Consumers' Choice of local rice	Pearson's correlation sig (2-tailed)	.9119 .2693	
	N	3	

** Correlation is significant at 0.05 level (2-tailed)

Table.4.7 Multiple effect regression

R	R Squared	Adjusted R-Square	Standard error	F-cal	Sig (2-tailed)
.91187	.83150	.66300	52.76729	4.93476	.2693

Bases for Decision and decision reached

The decision rule require us to reject null hypothesis (Ho) if the calculated table value is greater than the tabulated t – value (i.e reject Ho if t – cal > f – tab) otherwise we accept at $\alpha = 0.05$ or 0.01. Reject also the null hypothesis (Ho) If the p-value is less than the chosen probability value otherwise we accept (i.e reject Ho if p-value < 0.05 or 0.01).

From table 4.4 and table 4.5 above, table value is not significant at .0301 level which is lower than .05, the chosen level of probability while the correlation value is .9136 indicating a very strong association between trust in technology of processing and consumers' acceptance of local rice. The null hypothesis is therefore rejected whilst the alternate is accepted. We therefore conclude that Trust in technology of processing of local rice influences consumers acceptance of local rice in South East Nigeria. Again, looking at the multiple effect of the same Trust in technology of processing on consumers' acceptance of local rice as contained in tables 4.6 and 4.7, the coefficient of determination represented by r^2 (R Squared) is .83150. This shows that the multiple effect of this predicting variable explains 83.3% of the variations in consumers' acceptance of local rice in South East Nigeria. And the correlation coefficient of .911 indicates that the effect of this predicting variable on consumers' acceptance of local rice is very strong and positive.

Ho_2: Perceived Marketing factors do not influence consumers' acceptance of local rice in South East Nigeria.

Table 4.8: Single effect correlations.

		Perceived marketing factors	Consumers' choice
Perceived marketing factors	Pearson's' correlation sig (2-tailed)	* *	.9988 .0000
		N	3
Consumers' Choice of local rice	Pearson's correlation sig (2-tailed)	.9988 .0000	
	N	3	

** Correlation is significant at 0.05 level (2-tailed)

Table 4.9 Single effect regression

R	R Squared	Adjusted R-Square	Standard error	F-cal	Sig (2-tailed)
.9988	.9977	.99688	22.60585	1278.482	.0000

Table 4.10: Multiple effect correlation

		Perceived marketing factors	Consumers' choice
Perceived marketing factors	Pearson's' correlation sig 2-tailed	* *	.7091 .4982
		N	3
Consumers' Choice	Pearson's correlation sig (2-tailed)	.7091 .4982	
	N	3	

** correlation is significant at 0.05 level (2-tailed)

Table 4.11: Multiple effect regression

R	R Square	Adjusted R Square	Standard error	F Cal	Sig (2-tailed)
.70910	.50282	.00563	90.64095	1.01133	.4982

Decision reached

From the tables of the single effect, it is clear that the table value is significant at 0.0000 level found lower than 0.05 being the chosen level of probability while the correlation value of .998 indicates a very strong and positive association between the independent and dependent variable. (P-value of .0000 < .05). The null hypothesis is therefore rejected whilst the alternate is accepted hence we conclude that marketing factors influences consumers' acceptance of local rice in South East Nigeria.

In the same vein when the multiple effect of the variable on consumers' acceptance was examined using regression analysis, the coefficient of determination was shown to be 0.503, indicating that the multiple 50.3% of the variation in consumers' acceptance of it in South East Nigeria. Furthermore, the correlation coefficient of .7091 (70.9%) indicates that the effect of the predicting variables on consumers' acceptance is strong and positive as shown in table 4.10 and table 4.11 respectively.

Table 4.12 Summary of result

Research Hypothesis	Correlation coefficient (r) simple off	Correlation (r) multiple effect	R square (r^2)	P – value (SIG)
Ho_1 (TT→CLR)	.9136	.9119	.83150	.0301
Ho_2 (MF→CLR)	.9988	.7091	.50282	.0000

Note: TTP – Trust in technology o processing, MF – Marketing factor, CRL – acceptance of local rice,

4.3 Discussion of Findings

From the results of the analysis carried out, it was discovered that in this study, that trust in technology of processing influence, the acceptance of local rice in the South East Nigeria. Furthermore, the study revealed that the explanatory variable of marketing factors of branding, advertising and packaging influence greatly on the acceptance of local rice in South East Nigeria. The relationship of trust in technology of processing, and marketing factors of advertising, packaging, promotion, etc and acceptance were ascertained through the f-values and correlation (r) values of (15.154) (.9136); (1278.482) (0.9988). The coefficient of determination shows that the multiple effect of trust in technology of processing explains 83.3% of the variation in consumers' acceptance as shown in regression table and the correlation coefficient of 0.911 indicated that the effect of the predicting variable on consumers' acceptance of local rice is very strong and positive. The findings therefore imply that, where the milling process is improved, quality can be assured and this can enhance the acceptance and preference of local rice in the region.

Marketing factor with R Square value of 0.503 indicated that a multiple effect of the predicting variable explained 50.3% of the variation in consumers' acceptance of local rice in South East and the correlation coefficient of .7091 (70.9%) indicated that the effect of it on consumers' acceptance is strong and positive.

Marketing factors are seen as key to local rice acceptance. This implies that promotion, advertising, packaging and general awareness creation regarding the acceptance of local rice is needed to increase its preference within the region. Thus, if consumers are aware of the benefit of consuming local rice viz a vis foreign rice, they will embrace it otherwise the acceptance of local rice will suffer within the region. Of all the variables tested, only the marketing factors have the greatest influence on the acceptance of local rice. This finding is consistent with the works of Moon & Balasubramanian (2003); Onyango & Govindasamy (2004) as well as Lusk et al (2005a). The result of this study is also in line with that of Kotler et al (2010). Kotler et al (2010) argue that poor marketing factors have effect on product acceptance. Marlia, Nasuddin & Fazlen (2011) in his summary suggest that preference of local rice should be based on small racks with a label (led information to give information on the cusine suitable to each type of rice. It was stressed that promotion of brand name using advertising and personal selling should be emphasized. Ogundele (2013) indicated that the product specialization and differentiation is very low. The degree of price differentiation is high. Grading and standard set still remain a critical challenge and not much is being done on the packaging. Therefore, for only a small proportion of the sample, marketing factor is significant which explains consumers attitude to local rice acceptance and acceptance.

Furthermore, Pantano & Dipietro (2012) argued that due to social pressure in using a particular technology, consumers are subjected to the influence of others with consequences on their attitude towards the usage of the system.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

In view of the findings of the study, it is concluded as follows:-

- Trust in technology of processing significantly influence the acceptance of local rice in the South East region of Nigeria. The finding suggests that milling of local rice with old and traditional equipment made consumers to loose interest in local rice. It requires modern and automated machine that will guarantee its quality that is desirable for the consumers' to choose.
- Perceived Marketing factors significantly influence the choice of local rice in South East region. This perhaps explains the indispensability of awareness creation especially on the health and economic benefits of local rice choice and preference in the region.

5.2 Implications and recommendations for Further Research

The result of this study implies that future research should focus on understanding the claims used for promoting local rice attribute perception that could enhance trust and loyalty towards sustainable consumption of local rice.

1. Therefore, considering the increasing importance of technology, it would be interesting that a modern and automated milling sector be developed alongside the small, private milling sector. This will be able to carter for the production needs for increased quality rice production of which consumers are interested in.
2. Government should lay a concrete plan for local rice production and marketing, involving private sector investment in efficient rice processing using mini rice meals with built in capacity for the stoning, polishing and sorting homogenous high quality rice.
3. It is demanding and timely to conduct detail analysis of Nigerian rice industry so as to unravel the major cause of uncompetitive local rice in Nigeria. however, special attention should be paid to these factors identified here and address them towards improved rice production and consumption in the region.

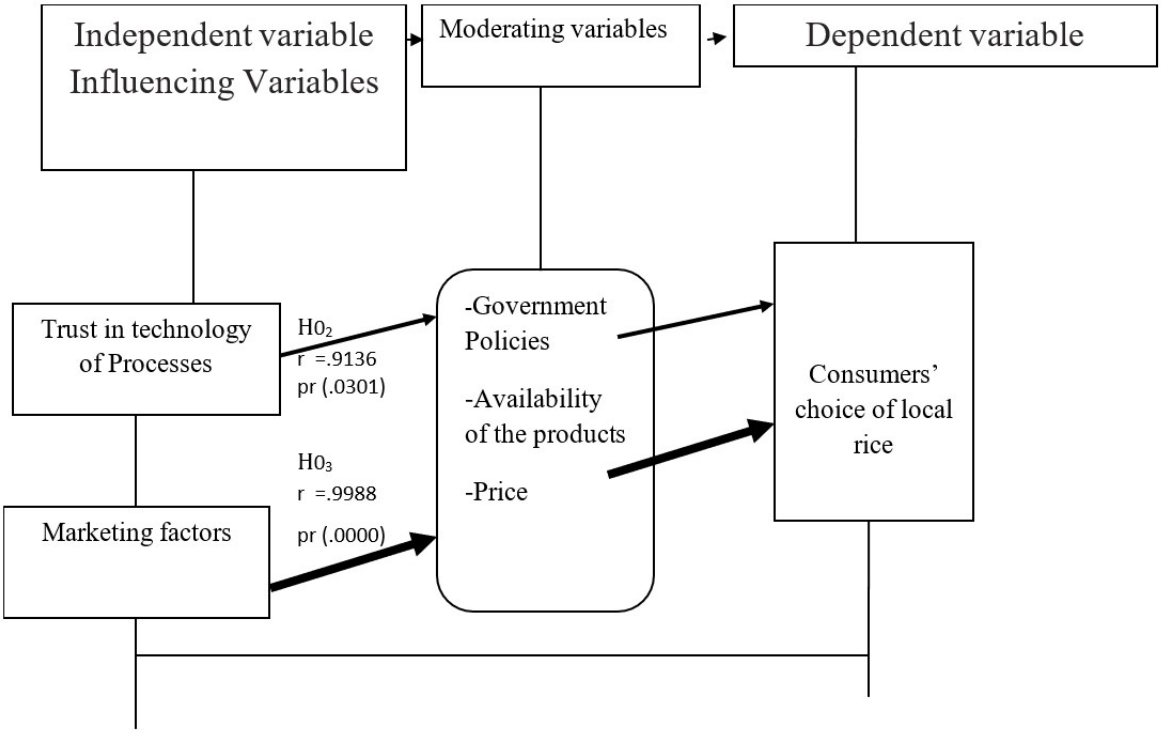

Fig 5.1: Heuristic Model of consumers' choice of local rice in South East (Source: Conceptualized by Researcher from study data, 2016)

Key:

Great Influence

Greater Influence

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