

Marketing efficiency of cassava tubers' marketers in Ukwa West Local Government Area, Abia State, Nigeria

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ABSTRACT

Cassava production is vital to the food security status of Nigeria. But cassava tuber marketers face varying market-related constraints that negatively affect supply of the produce in meeting growing demand brought about by increasing population. The study assesses the marketing efficiency of cassava tubers' marketers in Ukwa West Local Government of Abia State and specifically, describes the socioeconomic characteristics of the marketers, the marketing system of the cassava tubers and examines the challenges associated with cassava marketing in the study area. A multistage sampling procedure consisting of a combination of purposive and random sampling techniques was used in the survey of marketers. Primary data were collected with the aid of structured questionnaires. Data were analysed using descriptive statistics and marketing efficiency model. Results showed that the majority (80%) of the marketers was females and that the mean age of the marketers was 51 years and by implication, they were active and agile. Majority of the cassava marketers had formal education and 40% of them had significant (11-20 years) marketing experience. Estimated marketing efficiency showed that marketing of cassava tubers in Ukwa West L.G.A was very inefficient. The frequency analysis of constraints showed that the respondents were faced with high transportation and haulage costs and inadequate storage facilities amongst others. As such, there is need for provision of good storage facilities to prevent product spoilage and the provision of good roads to aid transportation of produce.

Keywords: Marketing, efficiency, cassava, tubers.

INTRODUCTION

Cassava marketing is the process involved in the movement of the tubers from farmers to consumers (Offor *et al.*, 2016) through a medium known as market. Cassava is an important commodity for poverty alleviation as it provides food security. However, there is perceived market inefficiency in cassava tuber marketing in Abia State as a result of various market related factors that negatively affect the supply of produce to meet the increasing demand brought about by a growing population. Marketing efficiency in the view of

Oladejo (2016) is a measure of marketing performance and can be expressed in physical or monetary terms. The monetary terms define the efficiency concept as a ratio of benefits to costs while the physical term defines efficiency based on output to input used. In the context of this study, marketing efficiency is the ratio of output (value added) to input used (cost of marketing) in a marketing system (Rahman and Awerije, 2014).

Numerous constraints have been identified to contribute to cassava tuber marketing inefficiency in developing countries and these include lack of standardized system of grading and measurement that is needed for efficient marketing, high costs of transportation and storage facilities as well as weak access to market and price information among others (Emmanuel, 2013). To the best of our knowledge, there is limited literature on the marketing system of cassava tubers in Ukwa Local Government area of Abia State. It is on this background, the study seeks to examine the level of efficiency among cassava tuber marketers in Ukwa-West Local Government area in Abia state and specifically, to describe the socioeconomic characteristics of the marketers, describe the marketing system of cassava tubers in Ukwa West Local Government of Abia State and examine the challenges associated with cassava marketing in the study area. Hopefully, the study will provide useful information on the level of efficiency in cassava marketing in Ukwa West Local Government, Abia state and contribute to policy formulation and planning of programs that promote marketing efficiency.

Conceptual framework

Agricultural marketing deals with different channels between producers and consumers. Marketing channels refers to all activities that take place in moving agricultural products from producers to consumers (Hwankim, 2015). It entails the factors and characteristics of produce as they are transferred from producer to consumer as well as the characteristics of the actors and physical infrastructures involved. Marketing channels of produce connect the producers to consumers and also determines the products marketing strategy. In Nigeria, the intermediaries (marketing agents or middle men) between farmers and consumers in cassava marketing are the processors, the semi-wholesalers and the retailers and they

form the major actors along the cassava value chain. It is assumed that an identified cassava value chain in an area will show the common processes or forms in which the cassava tubers undergo till they get to the end users. For instance, farmers sometimes add value to their cassava produce by processing into garri and fufu to increased their income level (Obinna, 2015).

Marketing efficiency is the degree of marketing performance (Sakthivel, 2017). Marketing efficiency deals with the prompt delivery of goods and provision of needed goods to consumers at a fair price. Marketing is said to be efficient if the total marketing margin is high for a given marketing cost. The pricing processes must encourage grading and standardization of the agricultural produce. Also, there should be uniformity of market charges and market performance which includes efficiency of resource use, product improvement and market services at least possible cost. Marketing efficiency of a marketing system can be measured through an assessment of the market structure, market conduct and market performance. Efficiency in cassava marketing has implications for consumers' living cost and producers' income as well as determining the potentials of cassava marketing to agricultural and overall economic development (Ani *et al.*, 2013).

Marketing efficiency has been measured using different methods in several studies. One important way of measuring marketing efficiency is the evaluation of marketing margin (Achike and Anzaku, 2010). Marketing margin of a product or service is the difference between the retail or selling price of the product and the farm-gate price, the difference can be considered to be the cost of marketing and all entailed in getting the product from the producer to the consumers (Stall, 2017). The production cost/ farm gate price takes into account the average unit cost

in terms of operating expenses, manufacturing and packaging, while the selling price or retail price reflects the market value or agreed exchange value of the product (Stall, 2017). A high marketing margin reflects a high level of productivity and high level of business stability, as it shows a business has the ability to respond to new competitors in the market by reducing prices (Kimmons, 2017).

However, cassava marketing is beset with challenges (Asogwa *et al.*, 2013). For example, cassava products are perishable and need to be stored properly to avoid spoilage and rodents attack. Absence of adequate storage facilities forces farmers and marketers to sell products early even at a loss (Adegbija, 2017). Also, there is price variation in cassava markets attributed to elastic supply of produce arising from seasonality or climatic conditions and transaction cost. In addition, cassava marketing in Nigeria has been constrained by factors like bad roads, lack of market storage distribution, lack of needed processing and packaging equipment among others that have resulted in substantial losses which complicates food security and leads to inefficiency in marketing systems (Oladejo, 2016).

METHODOLOGY

The study was carried out in Ukwa West Local Government Area of Abia State. Abia State occupies about 6,320 square kilometres, is bounded on the north and northeast by states of Anambra, Enugu and Ebonyi. To the west of Abia state is Imo State, to the east and southeast are Cross-River and Akwa Ibom States and to the south is Rivers State (Abia State Government, 2015). Agriculture employs 70% of state workforce and it is the second major economic sector of Abia state (World Bank, 2013). The state experiences adequate seasonal rainfall. Abia State consists of seventeen Local Government Areas (LGAs). However, farming in the state is characterised by subsistence farming and

determined by seasonal distribution of rainfall. The main food crops grown in the state include yam, cassava, rice, maize, cocoyam, while the major cash-crop is oil-palm. Ukwa West L.G.A. is situated in the southern part of Abia State. It has a land area of 542.127km (Echebiri and Mbanasor, 2003). The principal occupation of the people is farming and cassava is one of the major crops cultivated in the area.

A multistage sampling procedure consisting of a combination of purposive and simple random sampling techniques was used to survey sample. In the first stage, Ukwa West Local Government Area (LGA) was purposively selected from the 17 LGA in the state because of the prevalence of cassava farming. The second stage involved purposive selection of a major and minor cassava market. In the third stage, a proportionate sampling of 45% was applied in the random survey of 40 marketers from the major market and 20 marketers from the minor market making a total of 60 marketers. The sampling frame was a list of tax-paying cassava marketers registered with the village heads of the study area. The list showed 91 cassava marketers in Afor and 45 registered markets in Orie market. The research population was made up of all the cassava marketers in the selected major and minor cassava markets (Afor and Orie markets respectively) in Ukwa West Local Government Area. The major market (Afor) is the known centralised market where cassava producers bring their produce for sale (wholesale or retail) to buyers from other places/markets while the minor market (Orie) is one where cassava marketers who had bought cassava from the major market

come to sell their purchase. The primary data for this study was obtained through a combination of observation and interviewing techniques. Interviews were done with the aid of a structured questionnaire structured in

three sections. The first section presented questions on the marketers' socio-economic characteristics. The second section presented questions that aided the analysis of efficiency in cassava tubers marketing while the third section solicited responses on the challenges marketers faced. In achieving the objectives of the study, descriptive statistics was used to describe the socioeconomic characteristics and marketing channels of the cassava marketers. In examining the marketing efficiency of the marketers, the marketing efficiency model as used in Yakubu *et al.* (2017) was adopted. The model is expressed as:

Marketing Efficiency (ME) =

Value Added ÷ Total Cost of Marketing (TCM) × 100

Where,

Value Added/Kg = selling price – cost price

Total Cost of Marketing (TCM)/Kg = Total cost incurred in transportation, haulage and market charges/levies.

Furthermore, a Likert's 4-point scale technique was used to rank the constraints facing the cassava tuber marketers. The Likert's weight scale measures were 1 (Strongly disagree), 2 (Disagree), 3 (Agree) and 4 (Strongly agree). A cut-off point of 2.5 was adopted such that a mean score greater than 2.5 was seen as a major constraint otherwise not. The cut-off point was established by finding the average attitude

score of the farmers for each constraint with the formula:

$$X = \frac{\sum x}{n} \quad (1)$$

Where, X is the mean of attitude test score for

the farmers, $\sum x$ is summation of rank scores of the farmers for an item and n is the number of farmers that scored the particular item.

RESULTS

The descriptive analysis of the marketers' socioeconomic characteristics is presented in Table 1. It was revealed that 80% of the respondents were females and 20% males; implying that more females participated in the marketing of cassava tubers. Majority (35%) of the marketers were between the ages of 50-59 years while 28.4% were between the ages of 40-49 years followed by those in the range of 60-69 years (21.7%). However, the mean age of the marketers was 51 years implying that on average, they were in their active years. It was found that 40% of respondents had marketing experience of 21-30 years, and 25% of respondents had an experience in cassava tuber marketing of 11-20 years. This is an indication that most of the marketers had significant experience in cassava marketing. The result also showed that 30% of the respondents had no form of formal education, 36.7% had primary school education while 31.7% had secondary school education as their highest level of formal education. This implied that majority of cassava tuber marketers had formal education. Furthermore, 86.6% of respondents were married, 61.8% had household size of 6-10 persons, implying that majority of marketers had or utilized family labor during marketing. Moreover, 76.7% of the cassava tuber marketers did not belong to any marketing association while 23.3% were members of an association.

Table 1: Frequency distribution of socioeconomic characteristics of the cassava marketers

Characteristics	Frequency n=60	Percentage	Mean
Sex:			
Female	48	80.0	
Male	12	20.0	
Age:			
30 – 39 years	8	13.4	
40 – 49 years	17	28.4	51 years
50 – 59 years	21	35.0	
60 – 69 years	13	21.7	
70 – 79 years	1	1.7	
Marketing experience			
1 – 10	7.0	11.7	
11 – 20	15	25.0	
21 – 30	24	40.0	25 years
31 – 40	11	18.3	
41 – 50	3	5.0	
Educational level			
No Education	18	30.0	
Primary School Education	22	36.6	
Secondary School Education	19	31.7	
Tertiary Education	1	1.7	
Marital status:			
Single	1	1.7	
Married	52	86.6	
Widow/Widower	7	11.7	
Household size			
1 – 5	7	11.7	
6 – 10	37	61.8	9 persons
11 – 15	16	26.6	
Membership of marketing association			
No	46	76.7	
Yes	14	23.3	

Source: Field Survey, 2018

The description of the marketing system of cassava tubers was done by a descriptive analysis as presented in Table 2 and a schematic diagram is presented in figure 1. It was observed that 86.7% of cassava tuber marketers were also farmers who sold own produce in addition to purchasing from other marketers while 11.7% bought through their

marketers' associations in addition to making individual purchase from the market. Further, 3.3% of the cassava tuber marketers sold to wholesalers, 45% sold to retailers and 51.7% sold directly to consumers. The result implied that the cassava tuber marketers were mostly involved in retailing.

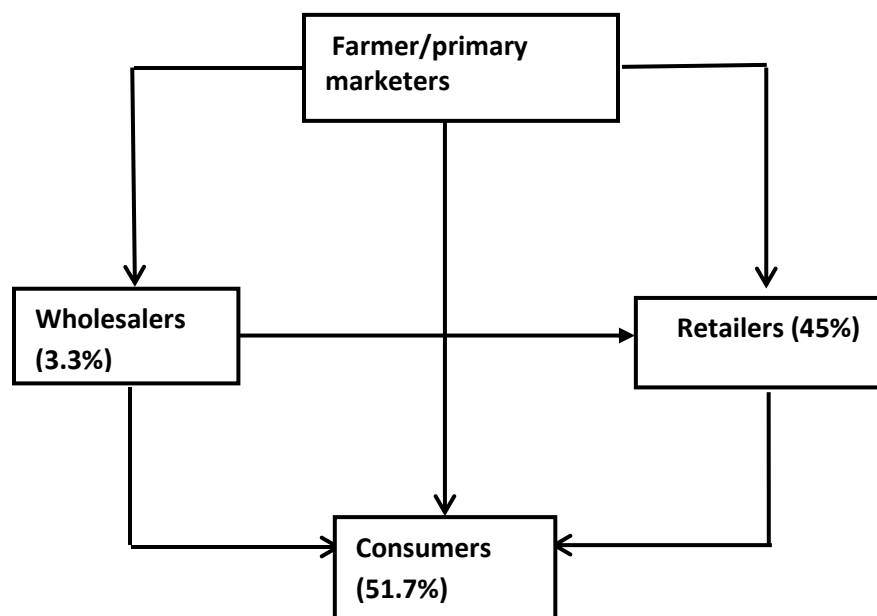
Table 2: Description of the marketing system of cassava tubers

Characteristics	Frequency(n=60)	Percentage
Source of marketed cassava tuber		
Market and Own Farm	52	86.7
Community	1	1.7
Marketers' Association	7	11.7
Marketing modes of cassava tubers		
Wholesalers		
Retailers	2	3.3
Consumers	27	45.0
	31	51.7

Source: Field Survey, 2018.

The marketing channels of cassava tubers between farmers/marketers and consumers is shown in Figure 1. The primary marketer – consumer marketing channel had the highest share (51.7%) of chain transactions for cassava tubers. Generally, the farmers/marketers sold to wholesalers,

retailers and consumers directly; secondary wholesalers sold to both retailers and consumers, and the retailers sold to consumers. Assumedly, due to close proximity between the points of production and consumption, the retailers, wholesalers and consumers are able to obtain direct supply from producers.

**Fig.1.** Schematic representation of the marketing channels for cassava tubers.

Furthermore, the computation of the marketing efficiency of cassava tubers on a weekly average in Ukwa West L.G.A is presented in Table 3. For the marketing period which was weekly, the value added was the difference between the selling price and purchase price per kg of each marketer summed up and average by the number of marketers. Likewise, the marketing cost was the total amount expended on all activities undertaken in the process of buying and

selling of the cassava tubers divided by total quantity (kg) of product for each marketer. This was then summed up and averaged by the total number of marketers. It was observed that on average, cassava tuber marketers on a weekly basis maintained a total market value 19.84 Naira/kg and a marketing efficiency value of 34.60%, which is less than 100%. This implied that marketing of cassava tubers in Ukwa West L.G.A, Abia State was very inefficient.

Table 3: Efficiency of cassava tubers marketing on a weekly average

Component	N/Per Kg	%TCM
Value added (N/Kg)	19.84	
Marketing cost(N/Kg)		
i. Transportation	13.97	24.35
ii. Haulage	24.37	42.49
iii. Market charges	6.12	10.67
iv. Storage	12.59	21.95
v. Packaging	0.31	0.54
Total marketing cost	57.36	
ME(value added ÷ marketcost × 100)	34.60 %	

Source: Field Survey, 2018.

Furthermore, the constraints faced by cassava tuber marketers in the study area were analysed and are as shown in Table 4. It is observed that issues such as high cost of labour, inadequate storage facility, inadequate finance and intensive labour associated with cassava tuber marketing were the most

pressing constraints facing the marketers as they were ranked first, second, and third respectively. Inadequate processing equipment was ranked fourth, lack of transport van/buses was ranked the fifth and high cost of transportation ranked was ranked least among the constraints cassava tuber marketers indicated as a problem in the study area.

Table 4: Frequency distribution of Constraints in cassava tuber marketing

Characteristics	Frequency	Percentage	Mean	Rank	Remark
High cost of transportation					
Disagreed					
Agreed	1	1.7	3.20	6	Agreed
Strongly agreed	46	76.7			
Strongly disagreed	13	21.6			
High cost of labor					
Disagreed	1	1.7			
Agreed	12	20.0	3.77	1	Agreed
Strongly agreed	47	78.3			
Strongly disagreed					
Lack of transport van/buses to transport produce					
Disagreed	-	-			
Agreed	41	68.3	3.32	5	Agreed
Strongly agreed	19	31.7			
Strongly disagreed					
Inadequate processing equipment					
Disagreed	-	-			
Agreed	22	36.7	3.63	4	Agreed
Strongly agreed	38	63.3			
Strongly disagreed					
Inadequate storage facility					
Disagreed	-	-			
Agreed	15	25.0	3.75	2	Agreed
Strongly agreed	45	75.0			
Strongly disagreed					
Inadequate finance					
Disagreed	-	-			
Agreed	16	26.7	3.73	3	Agreed
Strongly agreed	44	73.3			
Strongly disagreed	-	-			
Cassava marketing is labor intensive					
Disagreed	-	-			
Agreed	15	25.0	3.75	2	Agreed
Strongly agreed	45	75.0			
Strongly disagreed					
Total	60	100.0			

Source: Field Survey, 2018

DISCUSSION

Socio-economic characteristics as factors of lifestyle components and measurements of financial viability and social standing affect decisions and acts of people in their way of life (McLeod, 2017). The socioeconomic characteristics of the marketers observed in this study are similar to Asogwa *et al.* (2013) findings on the socioeconomic analysis of cassava marketers that majority were females, married and educated. It was observed that majority of the marketers were also farmers who cultivated the cassava tubers they sold. Likewise, in Rahman and Awerije (2014), marketers had main occupation as farming and their main source of capital as personal income. More so, Onya *et al.* (2016) observed that cassava marketers were in their youthful years, mostly females, with significant years of farming experience and had secondary education as their highest level of education. The marketing chain observed in the study agrees with Asogwa *et al.* (2013) that a greater percentage of the cassava traded was primarily obtained from farmers and marketers belonging to a cassava marketing association. In addition, it is noted from the analysis of marketing efficiency that high percentage of the total marketing cost was on haulage and transportation costs which implied that the cassava tuber marketers were faced with high expenditure on transporting and offloading their produce at buying and selling points. This could be a major cause of the high inefficiency in cassava marketing in the study area. Hence, there is need for improvement of marketing efficiency in the study area by using cheaper means of transportation to facilitate cheaper haulage cost. The result of the analysed marketing efficiency is similar to Yakubu, *et al.* (2017) assessment of marketing efficiency of moringa leaves in Kano State, Nigeria which showed transportation cost

taking the highest percentage of total marketing cost.

Furthermore, high transportation cost contributes to market inefficiency and consequently leads to reduction in profit for the marketers. High transportation cost result in price alterations in markets that are related (Taylor and Adelman, 2013). The high cost of transportation could be as a result of bad roads or lack of transport vans/buses as marketers are left with the option of using bicycles and motorcycles to transport produce in such cases. According to Awoyinka (2009), the bulkiness of cassava tubers requires the use of labour for loading and offloading which creates cost for the marketers and in turn profit reduction. Inadequacy of transport facilities is a major issue leading to inefficiency in cassava marketing. The rural areas where most of the farmers reside lack good roads. As a result, the amount of produce distributed to urban towns and cities is reduced due to high transportation cost (Adegbiya, 2017). In addition, Onya *et al.* (2016) has noted that the major challenges cassava marketers face includes high cost of cassava processing, high transaction cost, poor coordination among actors in the value chain, lack of storage facilities, poor road network, price fluctuations, high cost of cassava tubers and poor access to market information.

CONCLUSION

The results from the descriptive statistics showed that majority of the cassava tubers' marketers were also farmers and they cultivated the cassava tubers they sold, it was also noted that the cassava tubers' marketers sold directly to both wholesalers, retailers and consumers. Empirical results on marketing efficiency of cassava tuber marketing in Ukwu West L.G.A showed that cassava tubers' marketers on average had high cost of marketing and were highly inefficient. The

marketers incurred high marketing costs as a result of high transport and haulage costs. Therefore, relevant authorities should help provide good link roads to enable efficient and effective transportation of the cassava tuber marketers and their products to reduce costs incurred and improve their efficiency level. Based on the study findings, it is also suggested that cassava marketers should be encouraged to form marketers' association to help ease the financial challenges of members. The existing cassava marketing process is inefficient due to the constraints faced by the marketers. Therefore, government should provide adequate and improved market facilities to encourage cassava tuber marketers to undertake value-addition processing for commercial purposes. Farm service centres with adequate storage facilities can be established by government to help cassava tuber marketers to reduce post-harvest losses.

REFERENCES

- Abia State Government 2015. State Profile: Geography. Retrieved from <http://www.abiastate.gov.ng/state-profile/profile/geography/>
- Achike, A. & Anzaku, T. 2010. Economic analysis of the marketing margin of Benniseed in Nasarawa state, Nigeria. *Agro-Science Journal of Tropical Agriculture, Food, Environment and Extension*, 9(1), 47-55.
- Adebija, D. 2017. Commercial production of cassava in Nigeria: Problems of agricultural marketing in Nigeria. Retrieved from <http://infoguidenigeria.com/commercial-production-cassava>
- Ani, S.O., Agbugba, I.K. & Baiyegunhi, L.J.S. 2013. Processing and Marketing of Selected Cassava Products in South-east Nigeria. *Journal of Economics*, 4(2), 105-111.
- Asogwa, B.C., Ezihe, J. A.C. & Ater, P.I. 2013. Socio-economic determinants of cassava production in Benue State, Nigeria. *International Journal of Innovation and Applied Studies*, 2(4), 384-391.
- Awoyinka, Y. 2009. Cassava marketing: Option for sustainable agricultural development in Nigeria. Retrieved from https://www.researchgate.net/publication/266881211_Cassava_Marketing_Option_for_Sustainable_Agr-development
- Castineiras, M. 2016. What is marketing system? Retrieved from <https://www.quora.com/whatismarketing-system-whataresometypes>
- Echebiri, R.N. & Mbanasor, J.A. 2003. Rural age distribution and farm labour supply in food crop production systems in Abia state, Nigeria. *Tropical and Subtropical Agroecosystems*, 2, 129-136.
- Emmanuel, T. 2013. Enhancing Cassava Marketing and Processing in Cameroon: Drivers, Constraints, and Prospects of the Value Chain, In: A. Elbehri (ed.), *Rebuilding West Africa's Food Potential*. FAO/IFAD. Available at: <http://www.fao.org/3/i3222e/i3222e16.pdf>
- Hwankim, A. 2015. Concept and meaning of agricultural marketing. Retrieved from <https://marketing.blogspot.com/2012/06/meaning-of-agricultural-marketing.html>
- Kimmons, R. 2017. What is marketing margin? Retrieved from <https://smallbusiness.chron.com/marketing-margin-20421.html>
- McLeod, S. 2017. List of socio-economic factors. Retrieved from http://www.ehow.co.uk/info_8245697_list-socioeconomic-factors.html
- Offor, E. Nse-Nelson, F. & Asokome, F. 2016. Determinants of marketing efficiency of yam market in Umuahia North Local

- Government Area of Abia State, Nigeria. *Agro-Science*, 15(2), 54-58.
- Oladejo, A. 2016. Profitability Analysis of cassava tuber marketing in Oyo State, Nigeria: Implication for sustainable development goals. *Scientia*, 16(2), 67-73.
- Onya, S. Oriala, S. Ejiba, I. & Okoronkwo, F. 2016. Market participation and value chain of cassava farmers in Abia State. *Journal of Scientific Research and Reports*, 12(1), 1-11.
- Rahman, S. & Awerije, B. (2014). Marketing efficiency of cassava products in Delta State, Nigeria: A stochastic profit frontier approach. *International Journal of Agricultural Management*. 4, 28-37.
- Sakthivel, R. 2017. Price spread and marketing efficiency. Retrieved from <https://www.slideshare.net/sakthivelRam/price-spread-and-marketing-efficiency-80679239>.
- Stall, E. 2017. How to calculate marketing margins. Retrieved from <http://bizfluent.com/how.8591792.calculate-marketing-margins.html>
- Taylor, J. & Adelma, I. 2006. Transportation cost and market power of middlemen: A spatial analysis of agricultural commodity markets in developing countries. Retrieved from <http://dx.doi.org/10.2139/ssrn.944167>
- Yakubu, S.A. Umar, A.S.S. Umar, S.U. & Dan-Musa, A.H. 2013. Assessment of marketing efficiency of moringa leaves in Kano State, Nigeria. *Conference proceedings of the 18th Annual National Conference of the Nigerian Association of Agricultural Economists held at federal university of agriculture, Abeokuta, Nigeria 16th-19th October*.