



Marketing information sources amongst oil palm fresh fruit bunch processors in Ovia
Northeast Local Government Area, Edo State, Nigeria

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ABSTRACT

This study assessed marketing information sources among fresh fruit bunch (FFB) processors in Ovia North-East Local Government Area, Edo State, Nigeria. Multistage sampling procedure was used in selecting the respondents and data were analyzed using both descriptive and inferential statistics. Results showed that mean age, household size, farming experience and annual income were 47 years, 5 persons, 9 years, ₦ 2,941,935.55 and 6 hectares respectively. Again, the study found that the most available marketing information to the respondents were information on where to sell FFB products, when to sell finished products and current market price of products based on the 97.5% respective response distribution on the variables. The major source of marketing information to the respondents was through phone calls (87.5%) while information from fellow dealers was the most preferred (\bar{x} = 4.30) source. Furthermore, there was significant relationship between age (r = -0.276; p = 0.013), farm size (r = 0.506; p = 0.000), annual income (r = 0.304; p = 0.006) and the available sources of marketing information to the respondents. The study concluded that the major source of marketing information to the respondents was through phone calls that were made directly to retailers/dealers of processed products. The need for initial identification of information sources available to end users was strongly recommended by this study before the actual dissemination of relevant information in order to ensure wider coverage and timely reception.

Keywords: Fresh fruit bunch; marketing information; processors; sources

INTRODUCTION

Information has received global attention as an essential resource for human and economic development and described as a stimulating creativity tool for obtaining new outcomes and processes (Adio *et al.*, 2016). According to Appiah (2018), information is one of the crucial factors that determine the success of any agricultural business, and it is a basis for the provision of agricultural extension services to farmers. Agricultural production and marketing involve a lot of risks and to be able to deal effectively with the inherent risks, farmers have the need for accurate and relevant information in order to make sound decisions. In particular, marketing information is important to farmers since they need information on price- to time their sales to maximize profit. As a result of the critical role that information

plays in the marketing of agricultural produce, its value has increased tremendously and has become a crucial factor to the financial progress of farmers (Appiah, 2018).

Every business venture relies on information to thrive as well as to understand customers and market trend. However, the amount of information shared around the globe on a daily basis is quite enormous, which makes it difficult for farmers to distinguish between correct and inaccurate information easily (Blank, 2021). To this end, the extension worker charged with the responsibility of information dissemination should ensure that farmers and other users are properly informed on reliable sources of information available to them through regular sensitization. According to Mubofu and Malekani (2020), information sources are institutions or individuals that create or bring about a message. They are the points from which information originates; including researchers, extension officers, knowledgeable farmers, marketers, processors, research institutes, government agencies and mass media such as radio, television and newsletters (Mubofu and Malekani, 2020; Okeke *et al.* (2015).

On the other hand, fresh fruit bunch (FFB) is the direct product of a mature oil palm tree (*Elaeis guineensis*) and the major raw material for the palm oil mills. The fruit from the tree is processed and the main products are crude palm oil (CPO) and palm kernel (PK), which generates another type of oil referred to as palm kernel oil (PKO), and residue known as palm kernel cake (PKC). The wastes emanating from FFB processing include solid wastes such as empty fruit bunch (EFB), mesocarp fibre (MF) and palm kernel shell (PKS), which represent vital biomass in the oil palm industry (Kabir *et al.*, 2017). The palm oil mill effluent (POME) is another essential waste of the industry comprising all the liquid wastes in the palm oil mills (Anyaocha *et al.*, 2018).

There are several constraints to the efficient marketing of FFB products. Carrere (2010) asserted that poor delivery of market information standard and quality control constitutes major constraint to FFB processing and marketing of products. According to Anyaocha *et al.*, (2018), the majority of FFB processors in Africa are known for their traditional processing techniques compared to the world's leading producing nations of Indonesia and Malaysia. Zu *et al.* (2012) characterized this traditional technique as tedious, time consuming with associated economic losses due to poor storage. A similar study by Fatin *et al.* (2014) pointed out that storage time of damaged oil palm fruits could activate the lipase enzymes and instantaneously reduce the oil quality. This study therefore becomes necessary counting on the fact that there are scanty of literature on marketing information sources especially among FFB processing. It is on this background that this work seeks to assess the sources of marketing information among fresh fruit bunch (FFB) processors in Ovia North-East Local Government Area of Edo State, Nigeria. The specific objectives of the study were to: describe the socio-economic characteristics of FFB processors in the study area; identify types of marketing information available to FFB processors; examine sources of marketing information available to FFB processors; and determine preferred sources of information among FFB processors.

METHODOLOGY

The Study Area

The study was carried out in Ovia Northeast Local Government Area of Edo State, Nigeria. The LGA lies between Latitudes 5°40' and 7°40' North and Longitudes 5°00' and 6°30' East with its headquarters in the town of Okada. It covers land area of 2,301 km² and a

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population of 153,849 (NBS, 2016). The annual average rainfall is 1700 mm and a relative humidity of 80 – 120%. The LGA is characterized by a tropical climate, which ranges from humid to sub-humid at different times in the year. The three distinct vegetations identified in the State are Mangrove Forest, Fresh Swamp and Savannah vegetations with average temperature ranging from a minimum of 24°C to a maximum of about 33°C characterized with loamy clay soils which is favourable for oil palm production.

Sampling Technique and Sample Size

Multi-stage sampling procedure was employed for study. First stage was the purposive selection of Ovia Northeast Local Government Area of Edo State, Nigeria not only because FFB processing is a predominant activity in the study area but also it is the host LGA of the famous Nigerian Institute for Oil Palm Research (NIFOR). The second stage comprised a purposive selection of eight (8) oil palm producing communities where FFB processing is at its highest in the study area. Lastly, was a simple random sampling of ten (10) FFB processors from each of the 8 communities giving a total of 80 respondents for the study.

Data Collection and Analysis

Primary data for the study were collected through the administration of 80 copies of structured questionnaire and were analyzed with the use of descriptive and inferential statistics. Descriptive statistics involved the use of frequency counts, percentages and mean scores to analyze FFB processors' socio-economic characteristics, types of marketing information available to the respondents and sources of marketing information. Respondents' preference for various information sources was measured at ordinal level using a five-point Likert scale, scored as Highly preferred = 5, Preferred = 4, Undecided = 3, Low preference = 2 and Not preferred = 1. A weighted mean of 3.0 was obtained and variables whose mean scores were greater than or equal to 3.0 were considered as significantly preferred information sources by respondents. The Pearson Product Moment Correlation analysis was used to establish relationship between socio-economic characteristics of the respondents and available sources of marketing information. Here, the available sources of marketing information were measured at ratio level in which the number of available sources of information was obtained through physical counting.

RESULTS AND DISCUSSION

Socio-economic Characteristics of Fresh Fruit Bunch Processors

The sex distribution in Table 1 indicates an equal (50%) participation of male and female of respondents in FFB processing with mean age of 47 years. This implies that fresh fruit bunch processing was performed by both men and women who were in their active working age. These results are in consonance with the findings of Nwalieji and Ojike (2018) who reported that, the average age of palm oil producers and FFB processors in their study area was 47 years. The marital status provides that most (91.3%) of the respondents were married with average household size of five (5) persons. This suggests that respondents had moderate household size. According to Ajani, *et al.* (2012) this level of household size is a significant contributor to family labour essential for effective processing of oil palm FFB.

Table 1: Socio economic characteristics of FFB processors

Variable	Description	Frequency	Percent	Mean
Sex	Male	40	50.0	
	Female	40	50.0	
Age	20 – 30	2	2.5	47.00
	31 – 40	26	32.5	
	41 – 50	30	37.5	
	51 – 60	17	21.3	
	61 – 70	5	6.3	
Marital Status	Single	6	7.5	
	Married	73	91.3	
	Widow	1	1.3	
Household Size	1 – 2	8	10.0	5.00
	3 – 5	39	48.8	
	6 – 8	26	32.5	
	9 – 11	7	8.8	
Educational Qualification	No formal Education	1	1.3	
	Primary Edu	19	23.8	
	Secondary Edu	28	35.0	
	Tertiary Edu	32	40.0	
Years of Experience	1 – 5	29	36.3	8.78
	6 – 10	26	32.5	
	11 – 15	17	21.3	
	16 – 20	7	8.8	
	21 – 25	1	1.3	
Membership of Association	No	75	93.8	
	Yes	5	6.3	
Annual Income	100000 – 2000000	41	51.3	2941935.55
	2000001 – 4000000	14	17.5	
	4000001 – 6000000	17	21.3	
	6000001 – 8000000	3	3.8	
	8000001 – 10000000	5	6.3	
Extension Contact	No contact	58	72.5	
	Contacted	22	27.5	
Frequency of contact	Weekly	1	1.3	
	Fortnightly	21	26.3	
	Not visited	58	72.5	
Farm Size	1 – 10	73	91.3	6.08
	11 – 20	3	3.8	
	21 – 30	2	2.5	
	31 – 40	2	2.5	

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The result further shows that most (98.7%) of the processors had one form of formal educational attainment or the other with an average of nine (9) years of processing experience. According to Ogundele and Okoruwa (2006) farmers with high educational level are likely to be more efficient in the use of information sources than their counterparts with little or no education. Results also shows that majority (72.5%) of respondents had contact with extension agents with a mean farm size of 6.08 and average annual income of ₦2,941,935.55. This suggests that FFB processing in the study area was a profitable venture.

Marketing Information Available to FFB Processors

Results in Table 2 show that, the most available marketing information to the processors were information on where to sell FFB products (97.5%), when to sell (97.5%) and current market price (97.5%) of FFB products respectively. Closely followed were information on production cost (93.8%), detection of adulterated palm oil (91.3%) and transportation cost (70.0%) The high availability of the identified marketing information can be attributed to the reliability of sources through which processors received marketing information. According to Omoregbee *et al.* (2017) information plays vital role in determining the successful marketing of agricultural produce. When available, information can assist actors in agricultural marketing to create a balance between supply and demand of produce and corresponding moderation of prices.

Table 2: Marketing information available to the respondents

Marketing Information	Frequency	Percent
Current market price	78	97.5
Information on cost of production	75	93.8
Improved methods of storage	54	67.5
Transportation	56	70
Market charges/tax	18	22.5
Detecting adulterated palm oil	6	7.5
Use of preservatives	10	12.5
Use of improved processing methods	24	30
Where to buy	78	97.5
Where to sell	78	97.5
When to sell	78	97.5

*Multiple responses occur

Sources Marketing Information Available to the Respondents

As shown in Table 3, results point that most of the processors received information on FFB processing and marketing through the following sources: phone calls (87.5%), retailers/dealers (86.3%), radio (82.5%), television (81.3%) and neighbours (76.3%). This result suggests that marketing information sourcing through phone calls was prominent among FFB processors. According to Asif *et al.* (2017) and Jansen *et al.* (2006) access to mobile phones improves agricultural productivity, increases market access and expands marketing options for rural producers.

Table 3: Marketing information sources available to the respondents

Information Sources	Available sources	
	Frequency	Percent
Radio	66	82.5
Television	65	81.3
Extension Agencies	25	31.3
Newspaper	43	53.8
Neighbours	61	76.3
Farmers' Cooperatives	22	27.5
Retailers (dealers)	69	86.3
Agricultural Journals	24	30
Bulletins	6	7.5
Posters	9	11.3
Campaigns	5	6.3
Exhibition	19	23.8
Workshop/Seminar	33	41.3
Phone calls	70	87.5
Demonstration	22	27.5
Group meeting/discussion	18	22.5
Non-Gov. Organization	17	21.3
Ministry of Agriculture	21	26.3
Facebook	47	58.8
WhatsApp	47	58.8
Instagram	29	36.3
YouTube	31	38.8

Preference for Information Sources by the Respondents

Result in Table 4 shows that retailers/dealers ($\bar{x} = 4.30$) was the most preferred source of marketing information by FFB processors and ranked 1st position among the identified variables. Other sources preferred by the processors were phone calls ($\bar{x} = 4.25$), radio ($\bar{x} = 3.99$), neighbours ($\bar{x} = 3.99$) and television ($\bar{x} = 3.93$). Among the social media, result shows that WhatsApp ($\bar{x} = 3.13$) and Facebook ($\bar{x} = 3.01$) were highly preferred and ranked 1st and 2nd positions respectively. This result agrees with the finding of Balkrishna and Deshmukh (2017) where Facebook and WhatsApp were the most popular social media platforms used among farmers. Social media allows users to communicate directly with the customers, service providers; information sharing centers and facilitates the marketing of farmers produce and formation of network (Balkrishna & Deshmukh, 2017).

Relationship between the socio-economic characteristics of the respondent's and the available marketing information sources

Result in Table 5 shows a statistically significant relationship ($p > 0.05$) between age ($r = -0.276$; $p = 0.013$), Farm size ($r = 0.506$; $p = 0.000$) and annual income ($r = 0.304$; $p = 0.006$). The result implies that older respondents had low access to marketing information sources available to them compared to their younger counterpart. Furthermore, the significant and positive relationship between and information sources available to the respondents

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implies that the larger the farm size of the processors, the greater the number marketing information sources available to them. This result agrees with the findings of Tabe-Ojong, *et al.*, (2022) where respondents relatively allocated large parcels of land to oil palm plantation. With respect to income, the result implies that any increase in income received by respondent from the sales of processed FFB product correspondingly promote their access to a greater number of information sources available to them. This result agrees with the findings of Osei-Kofi, *et al.*, (2023) in which income level was a vital aspect of personal characteristics that can influence farmers' selection of agricultural information sources.

Table 4: Information sources preferred by FFB processors

Information sources	Not preferred		Low preference		Undecided		Preferred		Highly preferred		Mean	Rank
	F	%	F	%	F	%	F	%	F	%		
	(a) Conventional											
Retailers (dealers)	10	12.5	1	1.3	1	1.3	11	13.8	57	71.3	4.30*	1 st
Phone calls	12	15.0	2	2.5	0	0.0	6	7.5	60	75.0	4.25*	2 nd
Radio	12	15.0	5	6.3	0	0.0	18	22.5	45	56.3	3.99*	3 rd
Neighbours	14	17.5	5	6.3	1	1.3	8	10.0	52	65.0	3.99*	3 rd
Television	12	15.0	6	7.5	0	0.0	20	25.0	42	52.5	3.93*	4 th
Newspaper	31	38.8	20	25.0	10	12.5	6	7.5	13	16.3	2.38	5 th
Workshop/Seminar	43	53.8	9	11.3	6	7.5	9	11.3	13	16.3	2.25	6 th
Demonstration	49	61.3	7	8.8	4	5.0	8	10.0	12	15.0	2.09	7 th
Ministry of agriculture	49	61.3	8	10.0	5	6.3	5	6.3	13	16.3	2.06	8 th
Exhibition	50	63.3	6	7.6	6	7.6	7	8.9	10	12.7	2.00	10 th
Farmers' cooperatives	47	58.8	11	13.8	9	11.3	4	5.0	9	11.3	1.96	11 th
Extension Agencies	45	56.3	14	17.5	7	8.8	8	10.0	6	7.5	1.95	12 th
Non-Gov. Agency	50	62.5	10	12.5	8	10.0	5	6.3	7	8.8	1.86	13 th
Group meeting/ disc	53	66.3	8	10.0	8	10.0	2	2.5	9	11.3	1.83	14 th
Agricultural Journals	54	67.5	8	10.0	3	3.8	9	11.3	6	7.5	1.81	15 th
Posters	61	76.3	6	7.5	4	5.0	4	5.0	5	6.3	1.58	16 th
Bulletins	63	78.8	6	7.5	3	3.8	7	8.8	1	1.3	1.46	17 th
Campaigns	62	77.5	9	11.3	4	5.0	4	5.0	1	1.3	1.41	18 th
(b) Social media												
WhatsApp	29	36.3	5	6.3	4	5.0	11	13.8	31	38.8	3.13*	1 st
Facebook	30	37.5	6	7.5	4	5.0	13	16.3	27	33.8	3.01*	2 nd
Instagram	48	60.0	6	7.5	2	2.5	8	10.0	16	20.0	2.23	3 rd
YouTube	49	61.3	5	6.3	2	2.5	7	8.8	17	21.3	2.23	3 rd

* Preferred sources: Mean \geq 3.0; F = Frequency

Table 5: Relationship between the socio-economic characteristics of the respondent's and their access to the available marketing information sources.

Variables	Coefficient	P-Value
Age	-0.276*	0.013
Household size	-0.237	0.035
Farm size	0.506**	0.000
Years of experience	-0.044	0.701
Annual income	0.304**	0.006

Significant at 0.05 probability level

CONCLUSION

Fresh fruit bunch (FFB) processors require accurate and timely marketing information to improve their knowledge and to make economic decisions regarding market interactions. However, a very useful information may be rendered insignificant if communicated without adequate considerations to the sources of information available and preferred by the target users. The study therefore holds that the most available marketing information to the respondents were information on where to sell processed product, when to sell and current market price of FFB products respectively. The major sources of marketing information among the processors were through; phone calls, retailers/dealers, radio, television and neighbors. While marketing information from retailers/dealers was the most preferred conventional sources of marketing information, WhatsApp topped the ranking among social media counterparts. Age, farm size and annual income, were significant predictors of the marketing information sources available to the respondents. The study therefore concluded that the major source of marketing information among FFB processors was through phone calls made directly to retailers/dealers of processed products. This study therefore recommended the need for prior identification of information sources available to targeted end users before actual dissemination in order to ensure wider coverage and timely reception.

REFERENCES

- Adio, E.O., Abu, Y., Yusuf, S.K. and S. Nansoh (2016). Use of agricultural information sources and services by farmers for improve productivity in Kwara State. *Library Philosophy and Practice (e-journal)*, 1456; 1 - 16.
- Ajani, E.N., Onwubuya E.A. and H.U. Nwalieji (2012). Assessment of oil palm production and processing among rural women in Enugu North agricultural zone of Enugu State, Nigeria. *International Journal of Agricultural Sciences*, 2(12): 322-329.
- Anyaocha, K.E., Sakrabani, R., Patchigolla, K. and A.M. Mouazen (2018). Evaluating oil palm fresh fruit bunch processing in Nigeria, *Journal of Waste Management & Research*, 36(3): 236–246.
- Appiah, C. (2018). Analysis of Sources of Market Information for Farmers in Saskatchewan. A thesis submitted to the college of graduate and postdoctoral Studies in partial fulfilment of the requirements for the degree of Master of Science in agricultural economics department of agricultural and resource economics University of Saskatchewan Saskatoon.
- Asif, A.S., Uddin, M.N., Dev, D.S. and M.A.M. Miah (2017). Factors Affecting Mobile Phone Usage by the Farmers in Receiving Information on Vegetable Cultivation in Bangladesh. *Journal of Agricultural Informatics*, 8(1): 33-43.
- Baballe, M.A., Abubakar, K.S., Ibrahim I.F., Dahiru, M., Fatima U.A., Nasir, U.A. and A.S. Iliyasu (2022). Benefits and challenges of information systems for agricultural management. *Global Journal of Research in Agriculture & Life Sciences*, 2(4): 15–25.
- Balkrishna, B.B. and A.A. Deshmukh (2017). A study on role of social media in agriculture marketing and its scope. *Global Journal of Management and Business Research*, 17(1): 1 – 6.

- Blank, A. (2021). Five (5) ways to identify reliable sources and maintain your credibility: 1 – 4, Available at: *forbesleadershipforbeswomen*, January 19, 2021, 08:20am EST.
- Carrere, R. (2010). Oil palm in Africa: past, present and future scenarios. *World Rainforest Movement. Bulletin* 14.
- Dąbrowski, D. (2018). Different sources of market information and product innovativeness. *Economics and Business Review*, 4 (18): 7-23.
- Daudu, S., Chado, S.S. and A.A. Igbashal (2009). Agricultural information sources utilized by farmers in Benue State, Nigeria. *Journal of Production Agriculture and Technology PAT* 2009, 5 (1): 39-48.
- Elijah, O., Rahman, T.A., Orikumhi, I. Leow, C. Y. and M.N. Hindia (2018). An overview of internet of things (IoT) and data analytics in agriculture: Benefits and challenges, *IEEE Internet of Things Journal*, 5(5): 4758- 3775.
- Fatin, S.A., Rosnah, S. and R. Yunus (2014). Effect of chopping oil palm fruit spikelet on the free fatty acid content release rate and its mechanical properties. *International Journal of Research in Engineering and Technology*, 3(1): 511-516.
- Jansen, H.G.P, Pender, J. Damon, A. and R. Schipper (2006). Rural development policies and sustainable land use in the hillside areas of Honduras. *A quantitative livelihoods approach. Research Report 147*. International Food Policy Research Institute. Washington. D C.
- Kabir G, Din A.T.M. and B.H. Hameed (2017). Pyrolysis of oil palm mesocarp fiber and palm frond in a slow-heating fixed-bed reactor: A comparative study. *Bioresource Technology*, 241: 563–572.
- Kassima, M.S.M., Ismaila, W.I.W., Ramli, A.R. and S.K. Bejo (2014). Image clustering technique in oil palm fresh fruit bunch (FFB) growth modelling. *Agriculture and Agricultural Science Procedia*, 2: 337 – 344.
- Lucky A.T. and N.E.E. Achebe (2013). Information communication technology and agricultural information dissemination: A Case study of Institute of Agricultural Research. Ahmadu Bello University, Zaria, Kaduna State. Retrieved from <http://maxwellsci.com/print/rjit/v5-11-17.pdf> on 28/09/2014
- Mubofu, C. and A.W. Malekani (2020). Agricultural information sources, channels and strategies for sharing agricultural research findings among farmers in Iringa district in Tanzania, *Library Philosophy and Practice (e-journal)*, 4223: 1 – 14.
- National Bureau of Statistics (NBS, 2016). City population statistics, Maps and Charts, Sourced from the National Population Commission of Nigeria (Web, 2016).
- Nwalieji, H.U. and H.U. Ojike (2018). Characteristics of small-scale palm oil production enterprise in Anambra State. *Journal of Agricultural Extension (EJS)*, 22 (1):78-99.
- Ogundele, O.O. and V.O. Okoruwa (2006). Technical efficiency differentials in rice production technologies in Nigeria. *AERC Research Paper 154*, African Economic Research Consortium, Nairobi. <http://www.aercrafira.org/documents/RP154.pdf>. Retrieved 12/08/14
- Okeke, M. N., Hyacinth, U. N. and C.O. Uzuegbunam (2015). Emerging Role of Information Communication Technologies in Extension Service Delivery in Nigeria: *A Review. 20th Conference Proceedings of AESON*.
- Omorgbee, F.E., Konkwo, S.O. and A.I. Kenneth (2017). Marketing information needs of Cocoa marketers in Ifedore Local Government Area of Ondo State, Nigeria, *Proceedings of the 61st Association of Deans of Faculty of Agriculture in Nigeria Universities (ADAN) Conference*, University of Benin 3rd – 6th July, 2017: 92–96.

- Osei-Kofi, P.S., Badu, E.E. Dadzie, P.S. and Bandanaa, J. (2023). Demographic characteristics of farmers and the effectiveness of disseminating information on agriculture in Ghana. *Ghana Journal of Agricultural Sciences*, 58 (2): 98 – 114. <https://dx.doi.org/10.4314/gjas.v58i2.9>
- Tabe-Ojong, M.P. Jr., (2023). Context matters: Oil palm production and women’s dietary diversity in the tropical forest of Cameroon. *Journal of Agricultural Economics*, 1(2): 1–18, <https://doi.org/10.1111/1477-9552.12559>.
- Zu, K.S.A., Adjei-Nsiah, S. and R.J. Bani (2012). Effect of processing equipment and duration of storage of palm fruits on palm oil yield and quality in the Kwaebibrem District, Ghana. *Agricultural Research and Reviews*, 1: 18–25.