



INFORMATION NEEDS OF RICE PROCESSORS ON IMPROVED PARBOILING TECHNOLOGY IN KWARA STATE, NIGERIA

Kayode A.O., Omotesho, K.F., Awoyemi A.O., and Adelana K.M
Department of Agricultural Extension and Rural Development,
University of Ilorin, PMB 1515 Ilorin, Nigeria

ABSTRACT

The study assessed rice processors' information needs on parboiling technology. A two-stage sampling procedure was used to select 120 rice processors for the study. Data were collected through the use of interview schedule, frequency counts, percentages, means and multiple regression analysis. Results showed that the mean age of the processors was 45.6 years and 94% were married with a mean household size of 7 persons. Sources of information on rice processing were fellow processors (93.4%), radio (86.1%), cell phone (84.7%), as well as extension agents (35.8%). Respondents indicated information needs on processing skills such as drying (MS= 2.49), steaming (MS=2.51), information on hygiene (MS= 2.51), marketing linkage (MS= 2.39), de-stoning (MS= 2.00) and milling (MS= 2.31). Results of regression analysis indicate a significant and positive relationship between education ($\beta=0.400$), years of experience ($\beta=0.024$), frequency of extension contact ($\beta=0.028$), income ($\beta=0.067$) and information needs. The study concludes that there was information gap in rice processing and recommends that adequate and timely information should be disseminated through the right source on improved parboiling technology and should be targeted at the identified information needs for better improved quality of rice.

Keywords: Parboiling technology, information needs, rice processors

INTRODUCTION

Rice, *oryza sativa* is a staple food to more than of the world's population and about half of the world's paddy is parboiled (Miah *et al* 2008). There has been a steady increase in rice production and consumption in Nigeria (Imolehin and Wada 2000). This production increase has not been enough to meet the demand of the ever-increasing population of Nigeria. Nigeria is making improvements to make locally grown and processed rice more palatable and more nutritious. Among the improvements that has been proven to be very effective and cheap is improved parboiling method. This has been widely adopted among local processors in west Africa which is slowly making its way throughout Nigeria

Parboiling is a well-developed pre-milling treatment to achieve the maximum recovery of total head rice in rice milling and to minimize the breakage. More than 1000 years ago parboiling was done in simple clay pots to improve shelf life and resistance against insects (Joachim, 2011). Parboiling of paddy is done in three steps, Soaking, Steaming and Drying. Soaking means paddy penetrates into water. Most defects that occur to the rice during transportation, harvesting and sun-drying are eliminated during the parboiling process (Igathinathene *et al.*, 2005). Therefore, milling paddy without parboiling results in rice that is devoid of these nutrients (Palva *et al.*, 2015). These desirable qualities of parboiled rice make it a highly demand product worldwide, particularly in countries such as Nigeria, India, Italy, Turkey, USA and Bangladesh (Patindol *et al.*, 2008). Despite the huge amount of paddy produce in Nigeria, it's still one of the leading importers of parboiled rice (JET, 2015). Paddy parboiling remains problematic despite its well establishment

in many countries. This is as a result of the attributes of local rice which earned its name by characteristics such as partly burnt rice, discolored or broken, presence of stones and chalkiness. This has a negative impact on the country's economy and the livelihood of the local farmers.

Information is a key to success and has been generally accepted as an important resource for individual growth and survival. It is the realization of the place of information in goal's attainment that recently gave it the position of the fifth factor of production. In agriculture for example, new information and knowledge can fuel adoption of innovation and increase productivity. There is a link between agriculture and processing. Information can be considered as the bridge that connects the two together. Knowledge and information are basic ingredients for increased agricultural production and productivity. It is against this background that Hossain (1998) quoted in Opara (2008) noted that communication of agricultural information is a vital factor in the change process of the farming community. Therefore, information is a critical resource in the operation and management of the agricultural enterprise. Furthermore, access to the right information at the right time and from the right source, may shift the balance between success and failure of farmers. Farmers must have access to information about new technologies before they can consider adopting them. According to the International Finance Corporation (IFC) (2010), access to quality information, technical assistance and extension services is a critical factor for successful smallholder production and adoption. The main objective of this work is to assess the level of information needs among rice processors. The specific objectives of this research are to:



describe the socioeconomic characteristics of women rice processors in the study area. Identify the sources of information of respondents. assess the information needs on improved parboiling method

The hypothesis of the study was stated that there is no significant relationship between socioeconomic characteristics of rice processors in Kwara state and the information needs of rice processors.

METHODOLOGY

This study was carried out in Kwara state, Nigeria. Its capital is Ilorin. A Three stage sampling procedure was used to select 120 respondents used for the study. Data was collected

through the use of structured interview, The independent variables were the socioeconomic characteristics of the respondents such as age, gender, religion, etc. The dependent variable is the level of use of information needs among rice processors in Kwara state and it was measured on a (3) three-point Likert scale of : (a) Highly needed (3) (b) moderately needed (2) (c) not needed at all (1)

RESULTS AND DISCUSSION

Socioeconomic characteristics

This section discusses the socioeconomic characteristics of the respondents. The results are as summarized in Table 1.

Table 1: Distribution of Respondents According to their Socioeconomic Characteristics

Variables	Frequency	Percentages	Mean	SD
Age (In years)				
≤ 30	29	24.2	42.8	12.8
31-40	32	26.7		
41-50	26	21.7		
51-60	22	18.3		
>60	11	9.1		
Marital status				
Married	113	94.2		
Widowed	7	5.8		
Years of Formal Education				
0	47	39.2		
1-6	62	51.7	10.9	1.1
7-12	11	9.1		
> 12	0	0		
Household size(person)				
1-3	2	1.7		
4-6	36	30.0	9.3	1.4
7-9	57	47.5		
> 9	25	20.8		
Experience of rice parboiling (Years)				
≤ 5	12	10.0		
6-15	42	35.0	18.8	10.2
16-25	39	32.5		
> 25	27	22.5		
Income (₦)				
≤ 500,000	10	8.3		
500,001-7500,000	20	16.7	1,033,400	367,871
750,001-1,000,000	41	34.2		
>1,000,000	49	40.8		

Source: Field Survey, 2020

Results presented in Table 1 shows that the mean age of the respondents was 42.79 years which implies that most of these women are of older generation. This is in line with the findings of Morris and Venkatesh (2000) that states that age differences influence the decision to adopt new technology as the younger generation finds it easier to adopt new technology compared to the older generation 94.2% of the respondents were married

with 51.7% had primary education. Also, result shows that the average years of processing experience was 18.8 years with an average annual income of ₦1,033,400. This result agrees with the findings of Sennugga *et al* 2020 that adoption of improved agricultural technologies has been associated with higher earnings and lower poverty, improved nutritional status, lower staple food prices.



Table 2: Distribution of respondents based on sources of information

Sources of Information	Frequency	Percentage
Mobile phones	128	84.7
Television	10	6.6
Fellow processors	141	93.4
Radio	130	86.1
News paper	6	3.9
Extension agents	54	35.8
Magazine	2	1.3
Internet	12	7.9

Source: Field Survey, 2020

Results in table 2 shows that the use of mobile phones to get information is common among the rice processors with a percentage of 84.7%, followed by Radio (86.1%) next to it is extension agents (35.8%). Extension agents' effort

was not impressive. These available sources of information are expected to be sufficient for acquiring information necessary for rice processing if they are reliably adequate. This result is supported by Ofuoku *et al* (2018)

Table 3: Level of information needs of rice processors on improved parboiling technology in Kwara state

Processing	Not Needed F (%)	Moderately needed F (%)	Highly Needed F (%)	Mean Score	Remark
Washing of the raw paddy	61(50.8)	35(29.2)	24(20.0)	1.70	Information, not needed
Soaking	70(58.3)	50(41.7)	0(0.0)	1.57	Information, not needed
Adequate Steaming	20(16.6)	35(29.5)	65(54.2)	2.51	Information Needed
Proper hygiene	26(21.6)	31(25.8)	73(60.8)	2.51	Information Needed
Market linkage	31(25.8)	39(32.5)	50(41.6)	2.14	Information Needed
De-stoning	28(23.3)	47(39.1)	45(37.5)	2.00	Information needed
Milling	25(20.8)	33(27.5)	62(51.7)	2.31	Information needed

Source: Survey, 2020

Table 3 shows that rice processors expressed strong desire for more information on adequate steaming of paddy and proper hygiene (MS- 2.51) respectively followed information on

milling (MS= 2.31) next to it is market linkage (MS-2.14) There is low need for information on de-stoning, washing of paddy and soaking.

Table 4: Result of multiple regression analysis of some selected socioeconomic characteristics and information needs on rice processing

	Unstandardized Coefficients		t-value	Sig.
	β	Std. Error		
(Constant)	1.666	0.283	5.898	0.000
Age	-0.009	0.006	-1.601	0.112
Sex	-0.004	0.096	-0.046	0.963
HH size	0.005	0.015	0.348	0.728
Education	0.400*	0.062	-2.575	0.001
Experience	0.024*	0.071	0.546	0.000
Income	0.067*	0.044	5.539	0.000
Extension contact	0.028*	0.118	-4.074	0.000

Source: Field Survey, 2020

Significant at $p \leq 0.05$ $R=0.532$, $R^2=0.283$,
Adjusted $R^2=0.240$, $P < 0.05$

Results presented in table 4 show the multiple regression analysis between some socioeconomic characteristics and level of information needs on rice processing. At $P < 0.05$, years of formal education (0.400) positively

influenced the level of information needs on rice processing. Also, annual income realized from rice processing (0.067), years of experience (0.024), and contact with extension (0.028) positively influenced the level of information needs on rice processing. Increase in the number of extension contacts will make the level of information needs



increase. This finding is consistent with report of Kayode *et al* (2019).

CONCLUSION AND RECOMMENDATIONS

The sources of information explored by the respondents were mobile phones, fellow processors, radio and extension agents. Information needed were most crucial in; adequate steaming, proper hygiene, market linkage, destoning and milling of paddy rice. Adequate and timely information should be disseminated through the appropriate source such as extension agents, research institute and other relevant agencies on improved parboiling methods and should be targeted at the identified information needs for better improved quality of rice.

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