



PROFITABILITY OF LOCALLY MILLED RICE MARKETING IN CENTRAL ZONE OF GOMBE STATE, NIGERIA

¹Adam, A. A., ¹Ya'u, A., ¹Bala, T., ²Jaafar, I. A.

¹Department of Agricultural Economics and Extension, Federal University Kashere, Gombe State, Nigeria

²Department of Agricultural Economics, Abubakar Tafawa Balewa University, Bauchi.

Corresponding Author's Email: aishaadam0535@gmail.com, **GSM:** 08031323786

ABSTRACT

The study was conducted to analyse the profitability of locally milled rice marketing in Central Zone of Gombe State, Nigeria. A multi-stage sampling technique was used to arrive at the sample size for the study. Data for the study were collected using a semi-structured questionnaire and analysed using descriptive and inferential statistics. The result revealed that the mean age of the respondents was 45.61 years, 85.9% of the respondents were male, 84.2% were married and 76.6% had at least primary education. Mean marketing experience was 17.6 years and mean household size was 9 persons. The result further revealed that most (81.5%) of the respondents belonged to marketing association and 84.8% had no access to formal sources of credit. The cost and return analysis of marketing 100kg bag of locally milled rice showed that purchase cost (₦135,913.04) was the most important cost component constituting 97.94% of total marketing cost, followed by cost of transportation (₦1,084.78), handling (₦631.58), Storage (₦600.22), loading and off-loading (₦391.3) and tax (₦145.90) constituting 0.78%, 0.43%, 0.46%, 0.28% and 0.11% of total cost respectively. Total cost of marketing services (CMS) was ₦2,853.78. The gross revenue, gross margin, marketing margin and marketing efficiency of marketing 100kg bag of locally milled rice were ₦144,497.55, ₦5,730.73, 3.97% and 483.11% respectively. Inadequate capital, inadequate credit facilities, price fluctuations and transportation were the major problems affecting locally milled rice marketing in the study area ranked 1st, 2nd, 3rd and 4th respectively. The study concluded that locally milled rice marketing is a profitable enterprise in the study area. It is therefore recommended that Government and financial institutions provide financial windows for marketers to easily acquire credit, marketers should leverage on existing market associations to demand necessary market facilities such as storage facilities from concerned authorities and Government should open up and rehabilitate rural roads to ease transportation and improve marketing efficiency.

Keywords: Profitability, Cost, Returns, Constraints, Marketing, Rice

INTRODUCTION

Rice is one of the major staple foods in Nigeria, consumed across all geopolitical zones and socio-economic classes. There is an ever-increasing trend in rice consumption in Nigeria despite the steady increase in production and importation of milled rice. This trend demonstrates a huge potential market for locally produced rice exists in urban centres if quality, standards, and grading are addressed. Increasing local rice production means that scarce foreign exchange used to import rice can be used to develop the local rice sector (Philip *et al.*, 2018). The federal government in a move to boost domestic production and consumption, banned the importation of rice in Nigeria in 2015. This move placed a rise in the demand of locally produced rice and as a result, increased local production is being clamoured for every day. However, achieving self-sufficiency in rice production and consumption is not a function of only planting large hectares of land with rice neither does it end at producing millions of tonnes of paddy rice. The quality and quantity of processed Nigerian rice available in the market and having the quality desired by consumers closes the rice import gap (Gabdo *et al.*, 2020).

Agricultural marketing has been summarily defined by Bassey *et al.* (2012) as a performance of all activities involved in moving farm produce from the point of production to the final consumer. The concept of agricultural marketing arises as a result of the need for commodities to be transferred from the point of production to the region of need through a system of activities, channels and actors to the final consumer. Sometimes this process of transmission involves transforming the produce in to a



form that is most desirable or useful to the end user or storage of the product within a period to increase shelf life. All these activities come at a cost to the farmer or supplier as the case may be, in form of transportation cost, storage cost, and cost of processing, advertisement cost, packaging and so on. Most rice traded in Nigeria is milled (94%) (Cadoni & Angelucci, 2013). The marketing chain of rice (paddy and milled alike, especially milled) is often short and has few role players (Ebukiba & Ogbole, 2020). Oyejide *et al.* (2013) highlighted five main channels that supply rice to Nigerian consumers; Channel that serves the rural village market and is supplied by traditional farmers, Channel that serves rural market towns and is a highly disaggregated channel that accounts for the majority of all marketed domestic rice, Channel that serves the middle-end urban market and includes medium-sized mills, the large-scale Channel, directed, industrial mill channel targeting import substitution with high-quality locally grown rice and the imported rice channel, predominantly serving a high-end urban market.

The rice marketing system in Nigeria is characterized by inadequate knowledge of post-harvest handling, processing and marketing, harvesting skills, poor means of transportation, and lack of industrial drive. Others are poor government policy and high production cost, poor market information and inadequate credit facilities. These coupled with poor market conduct and structures translate to poor market performance in the Nigerian rice industry (Ajala & Gana, 2015). Dauna *et al.* (2018) and Emeka & Ugwu, (2015) also reported that rice marketing is set back by a weak marketing system and low margins owing to challenges such as government taxes, unfavourable policies, rice importation and price fluctuation. Profitability is one of the important tools for the efficient performance of any enterprise. According to Ebukiba & Ogbole (2020), every firm is concerned with its profitability. Profitability indicates how well management of an enterprise generates earnings by using the resources at its disposal. Jaafar *et al.* (2023) claims that profitability is an index of efficiency and it is regarded as a measure of efficiency and management guide to greater efficiency. Market economy requires profitability in the enterprise, after paying taxes, not just to cover all its costs, but also to ensure expanded reproduction and prosperity (Bose *et al.*, 2024). He further asserts that if the income generated is greater than the input cost, that is simply profitability, but if the income is less than the input cost, it can lead to poor performance. Therefore, it can be concluded that every business should earn sufficient profits in order to survive and grow over for a long period.

Efficiency in marketing encourages the participation of a large number of individuals at various types of market and exchange points where the marketing services of assembling, storage, processing, transportation, and break-of-bulk are performed. The effects of an efficient market can go a long way in influencing positively the supply response of agricultural products. Hence this study was conducted to:

- i. describe the socio-economic characteristics of locally milled rice marketers in the study area.
- ii. determine the profitability of locally milled rice marketing in the study area.
- iii. identify the constraints to locally milled rice marketing in the study area.

MATERIALS AND METHODS

The Study Area

The study was carried out in the Central zone of Gombe State. The State is located in the North-eastern part of Nigeria and lies at latitude 10⁰15' North and longitude 11⁰10 East. The State has 11 Local Government Areas and has two distinct climates, the dry season (November-March) and the rainy season (April-October) with an average rainfall of 850mm. Gombe Central Zone comprises of Yamaltu-Deba and Akko local government. Yamaltu-Deba has its headquarters in Deba town, southeast of the State capital. It is inhabited by mainly Tera and Fulani people, it covers a total 1,981km² (765sqmi) land mass and a projected population of 473,000 as at 2025 with annual growth rate of 3.3%. The Southern part of Lake Dadin Kowa lies within the area. While, Akko Local Government is the largest LGA in Gombe State by Landmass, its headquarters is located in Kumo town southward of the State capital. Akko LGA is made up of three major districts and eleven wards, it covers 2,627km² and has a projected population of 626,000 as at 2025. There are more than 30 different tribes in Akko ranging from the dominant Fulani to Tangale, Tera and Hausa. Farming is the main occupation of majority of the indigenes.

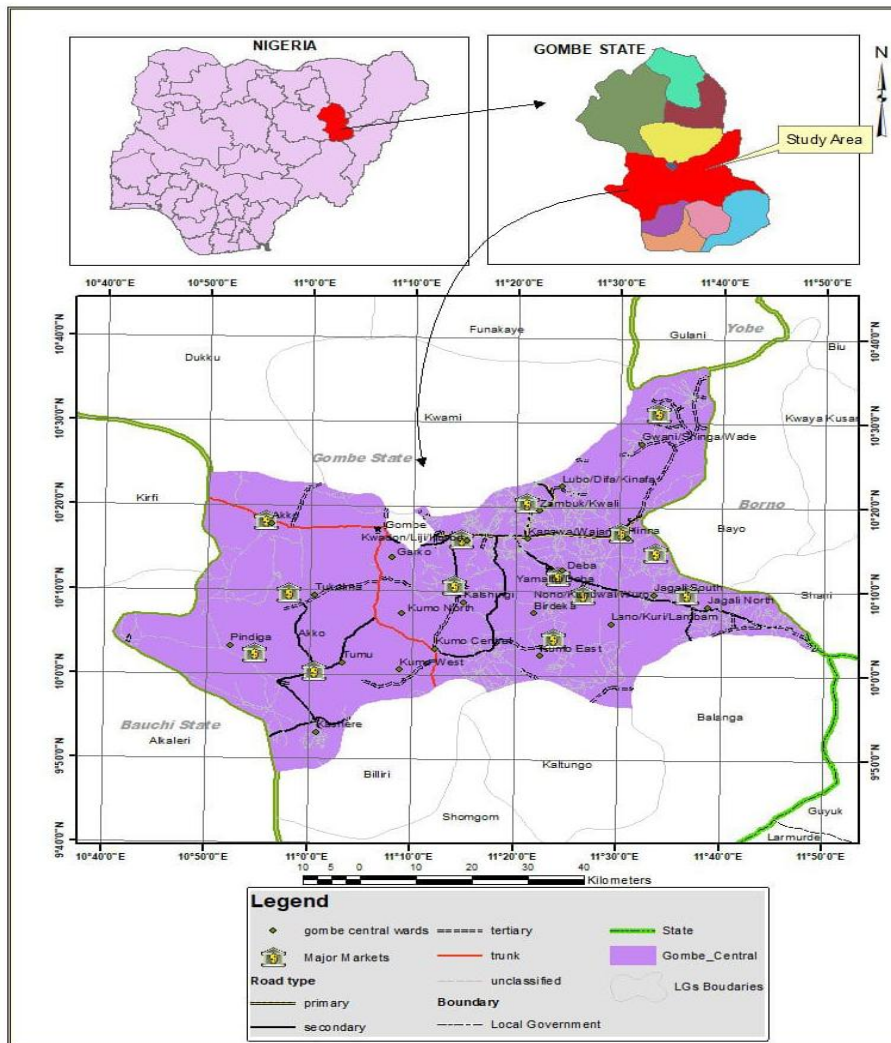


Figure 1: Map of Gombe State Showing the Study Area

Sampling Technique and Sample Size

A multi-stage sampling Procedure was used to arrive at the sample size for the study. In the first stage, Gombe Central Zone comprises of two (2) Local Government Areas, namely; Akko and Yamaltu-Deba. Two (2) major grain markets were purposively selected from each Local Government Area, making a total of four markets. In the second stage, the sampling frame was obtained from the representatives of rice marketers association in each market from which the sample size was drawn using Taro Yamane sample formula. In the third and final stage, respondents for the study were selected through a simple random sampling technique. The sample size and sampling procedure were presented in Table 1.

Table 1. Sampling Procedure and Sample Size

LGAs	Markets	Sampling Frame	Sample Size
Akko	Kumo	74	62
	Kashere	52	48
Yamaltu-Deba	Dadin kowa	68	58
	Kuri	44	40
Total	4	244	208

Source: Reconnaissance survey, 2022



Method of Data Collection

Primary data were collected from rice marketers using a semi-structured questionnaire, data collected include socio-economic characteristics of rice marketers, information on marketing conduct and structure, cost and return parameters and problems affecting local rice marketing. Validity of the questionnaire was tested through pre-test data collection. A total of 208 questionnaires were administered and 184 were successfully retrieved and analysed.

Method of Data Analysis

Data for the study were analysed using descriptive statistics and budgetary models. Descriptive statistics in form of frequencies, percentages and means were used to analyse specific objectives i, Gross margin analysis, Market Margin and Marketing efficiency were used to analyse specific objective ii and problem confrontation index (PCI) was used to analyse specific objective iii. The models are expressed in the following equations 1 – 4:

Gross Margin

The cost and return of marketing locally milled rice was estimated using Gross margin analysis.

The formula is expressed as follows:

$$GM = TR - TVC \quad \dots (1)$$

Where:

GM = Gross margin (₦)

TR = Total Revenue from locally milled rice (₦)

TVC = Total Variable cost of locally milled rice marketing (₦)

Marketing Margin and Marketing Efficiency

$$MM = \frac{Sp - Cp}{Sp} \times 100 \quad \dots (2)$$

Where:

MM = Marketing margin

Sp = Selling Price in Naira

Cp = Cost Price in Naira

$$M.E = \frac{VA}{CMS} \times 100 \quad \dots (3)$$

where;

M.E = Marketing efficiency

VA = Value added by Marketing

CMS = Cost of marketing services

Problem Confrontation Index (PCI)

PCI was used to assess constraints to locally milled rice marketing. 4-point rating scale was used to assess the severity of each constraint as follows: high = 3, medium = 2, low = 1 and not at all = 0. The problem confrontation score was thereafter calculated by summing the weights of the problem's responses as used by Hossein and Miah (2011):

$$PCI = (PH \times 3) + (PM \times 2) + (PL \times 1) + (PN \times 0) \quad \dots (4)$$

Where;

PH = Total number of marketers expressed problem as high;

PM = Total number of marketers expressed problem as medium;

PL = Total number of marketers expressed problem as low; and

PN = Total number of marketers expressed problem as not at all.

RESULTS AND DISCUSSION

Socio-economic Characteristics

The Socio-economic characteristics of the respondent is presented in Table 2. The result of age distribution of the respondents revealed that 32.0% of the respondents were between the age bracket of 31 – 40, 22.3% were between the ages of 41 – 50 and 26.6% were between the ages of 51 – 60, while 8.2% and 10.9% were between the age brackets of 20 – 30 and 61 – 70 years respectively. The mean age of the respondents was 45.61 years. This indicates that rice marketing enterprise in the study area



is dominated by persons who are active and in their productive ages. Young marketers are characterized with higher potentials of adopting new and improved marketing strategies and techniques effectively and efficiently. This agrees with the findings of Bose *et al.* (2020) and Ebukiba & Ogbole (2020) and who also reported that rice marketing enterprise was dominated by youth in Bauchi and Federal Capital Territory respectively.

The sex distribution of the respondents revealed that majority (85.9%) of the respondents were male and only 14.1% were female. This implies that rice marketing is a male dominated enterprise in the study area. The reason for the male dominance may be connected with the religion and tradition of people in the area which restrict women from outdoor activities. This is in line with the findings of Dayyabu *et al.* (2021) and Gaya *et al.* (2020), who reported less female participation in rice and cowpea marketing in other Northern states.

The marital status of the respondents indicated that majority (84.2%) of the respondents were married and 7.1% were single. Divorced and widow constituted only 8.6% of the respondents. This is expected given that majority of the respondents fall within marriageable age of 31–50 years and is in agreement with the findings of Bose *et al.* (2020) and Zalkuwi (2019) who reported that majority of their respondents were married.

Educational level of the respondents revealed that 14.1% of the respondents had primary education, 49.5% had secondary education and 13.0% had tertiary education, only 23.4% had no formal education. This implies majority of the respondents are educated and capable of taking rational decisions regarding their enterprises. High level of education is also expected to influence the adoption of improved and better marketing practices. Abdulhakeem *et al.* (2020) stated that though the ability to trade in agricultural produce is not necessarily a function of one's level of education, it however helps in the efficient performance of all the marketing functions like loan application, effective communication, record keeping and devising strategies on how to enhance efficient marketing activities and survive during different period by either diversifying or evolving new approach that ensure keeping the marketer in business without necessarily encountering losses.

The result of marketing experience showed that majority (52.7%) of the respondents had a marketing experience of 11 – 20 years. 31.5% had a marketing experience of 21 – 30 years, 1.1% had a marketing experience of more than 30 years and only 14.7% had a marketing experience of less than 10 years. The mean marketing experience was 17.6 years. This implies that the respondents were not new to the enterprise. Bose *et al.* (2020) asserted that the number of years spent in marketing could be an indication of the practical knowledge which has been acquired overtime. Abdulhakeem *et al.* (2020) added that having good knowledge of a market allow marketers to derive their own competing strategies to withstand potential competitors.

The distribution of respondent according to household size showed that majority (64.7%) of the respondents had a household size of 6 - 10 persons, 23.3% had a household size of 11 – 15 persons, 9.8% had a household size of 1 – 5 persons and only 2.2% had a household of more than 16 persons. The average household size was 9. Thus, the marketers can be said to have adequate household size. Ebukiba and Ogbole (2020) postulated that household size could either have a positive (if household members are part of the marketing process) or negative effect (if the head of the household/respondent has to cater to the needs of other household members) on marketing the commodities.

The distribution of respondents according to type of market participants showed that there are three main type of market participants in the study area; those who only retail, those who only wholesale, and those who engage in both wholesaling and retailing. Out of the respondents, 25.0% were retailers only, 29.3% were wholesalers only, while 45.7% were wholesaler-cum-retailers. Soe *et al.* (2015) affirmed that the choice of marketing channel is an important factor for producers because different channels are characterized by different profitability and cost. The result confirmed the assertion of Ebukiba, & Ogbole (2020) that the marketing chain of milled rice is often short and has few role players.

The result of membership of market association showed that majority (81.5%) of the respondents belonged to a marketing association and only 18.5% do not belonged to any association. The main benefits derived by marketers from being members of these associations were access to credit,



business network, market information and protection of market interest with 48.0%, 42.7%, 10.7% and 2.6% respectively. This indicates that there is a strong market association in the study area and most marketers subscribe to its membership. This is also so because support from governments cannot be accessed by an individual marketer except through cooperatives and/or associations. This conforms with the finding of Aiyedun *et al.* (2021) and Ebukiba & Ogbole (2020) that most rice marketers belong to market associations.

Table 2: Distribution of Respondents According to Socio-economic Characteristics

Variables	Frequency	Percentage	Mean
Age			
21 – 30	15	8.2	45.61
31 – 40	59	32.0	
41 – 50	41	22.3	
51 – 60	49	26.6	
61 – 70	20	10.9	
Sex			
Male	158	85.9	
Female	26	14.1	
Marital status			
Single	13	7.1	
Married	155	84.2	
Divorced	8	4.3	
Widow	8	4.3	
Level of Education			
Non-formal	43	23.4	
Primary	26	14.1	
Secondary	91	49.5	
Tertiary	24	13.0	
Marketing Experience			
1 – 10	27	14.7	17.6 years
11 – 20	97	52.7	
21 – 30	58	31.5	
31 – 40	2	1.1	
Household Size			
1 – 5	18	9.8	9 persons
6 – 10	119	64.7	
11 – 15	43	23.3	
16 – 20	2	1.1	
21 – 25	2	1.1	
Market Participants			
Retailer	46	25.0	
Wholesaler	54	29.3	
wholesaler/retailer	84	45.7	
Membership			
Yes	150	81.5	
No	34	18.5	

Source: Field survey, 2024

Profitability of Locally Milled Rice Marketing

Table 3 shows the average cost and return of marketing 100kg bag of locally milled rice in the study area and presents the profitability indices. The result showed that purchase cost (₦135,913.04) was the most important cost component constituting 97.94% of total marketing cost, followed by cost of transportation (₦1,084.78), handling (₦631.58), Storage (₦600.22) and loading and off-loading



(₦391.3) constituting 0.78%, 0.43%, 0.46% and 0.28% respectively. Tax (₦145.90) was the least cost component constituting 0.11% of total marketing cost. Total cost of marketing services (CMS) was ₦2,853.78. Gross revenue generated from marketing 100kg bag of locally milled rice was ₦144,497.55 and gross margin was ₦5,730.73. Marketing margin and marketing efficiency were 5.94% and 300.81% respectively. This indicates that locally milled rice marketing is profitable and efficient in the study area. This is in line with the findings of Bose *et al.* (2020), Ebukiba & Ogbole (2020) and Obinna, *et al.* (2020) who all reported rice marketing to be profitable and efficient.

Table 3: Cost and Return of Marketing 100kg bag of Locally Milled Rice

Variables	Amount (₦)	Percentage
Variable Cost		
Purchase	135,913.04	97.94
Transportation	1,084.78	0.78
Loading and off-loading	391.30	0.28
Storage	600.22	0.43
Handling	631.58	0.46
Tax	145.90	0.11
Total Variable Cost (TVC)	138,766.82	100
Gross Revenue	144,497.55	
GM (GR - TVC)	5,730.73	
MM	5.94	
M.E	300.81	

Source: Field survey, 2024

Constraints to Locally Milled Rice Marketing

Constraints to locally milled rice marketing in the study area were assessed using a four-point rating scale, and problem confrontation index (PCI) of each was determined and ranked accordingly. The result presented in Table 4 showed that the foremost problems affecting locally milled rice marketing were inadequate capital, inadequate credit facilities and price fluctuations ranked 1st, 2nd and 3rd respectively. Transportation problem, Supply shortage and Poor rice quality rice were next and ranked 4th, 5th and 6th respectively. Other problems were inadequate Storage facilities and inadequate market information ranked 7th and 8th respectively. Imported rice competition was the least problem encountered by the marketers. In recent years, rice marketing in Nigeria has become a capital-intensive enterprise due to high inflation resulting in high cost of rice and other food commodities, this has rendered many marketers' capital insufficient to acquire high volume of rice for marketing, this is further worsened by the inability of most marketers to acquire their required capital through formal sources. Prices of agricultural commodities, particularly grains, have also been very volatile in recent times, with prices changes within very short moments. This has also been a strain to efficient rice marketing. Transportation constraints was also reported to be severe due to poor road network and high cost of transportation bedevilling almost all Nigerian rural areas which are the major producers of agricultural commodities. Also reported was shortage of rice supply in the market, this is probably due to high demand, seasonal nature of production in Nigeria and unwanted practices such as hoardings. Similar constraints were reported by Bose *et al.* (2020), Dayyabu *et al.* (2021), Zulkuwi (2019), Dauna *et al.* (2018) and Ebukiba & Ogbole (2020) in their respective States.



Table 4: Distribution of Respondents According to Access to Credit

Constraints	3	2	1	0	PCI	Rank
Inadequate capital	76(41.3)	94(51.1)	14(7.6)	-	430	1 st
Transportation Problem	34(18.5)	102(55.4)	42(22.8)	6(3.3)	348	4 th
Inadequate market information	-	30(16.3)	66(35.9)	88(47.8)	126	8 th
Inadequate Storage facilities	2(1.1)	59(32.1)	90(48.9)	33(17.9)	214	7 th
Supply shortage	26(14.1)	80(43.5)	46(25.0)	32(17.4)	284	5 th
Price fluctuations	68(37.0)	82(44.6)	24(13.0)	10(5.4)	392	3 rd
Poor rice quality	4(2.2)	58(31.5)	102(55.4)	20(10.9)	230	6 th
Imported rice competition	-	5(2.7)	57(31.0)	122(66.3)	67	9 th
Poor credit facilities	67(36.4)	95(51.6)	20(10.9)	2(1.1)	411	2 nd

Figures in parenthesis represent percentages

Source: Field survey, 2024

CONCLUSION AND RECOMMENDATIONS

The study concluded that locally milled rice marketing is profitable and efficient in the study area as indicated by all the profitability indices. Inadequate capital, inadequate credit facilities, transportation problem and price fluctuation were the major constraints to efficient marketing in the study area.

Based on the findings of the study, the following recommendations were made:

- i. Government and financial institutions should provide financial windows for rice marketers to acquire required capital and improve their overall marketing efficiency.
- ii. Rice marketers should leverage on existing market associations to demand necessary market facilities from concerned authorities.
- iii. Government should open up and rehabilitate rural roads to ease the movement of goods to urban markets and reduce transportation cost.
- iv. Effort should also be made by government and concerned authorities to ensure adequate supply of rice and stabilize market price.

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