



**DETERMINANTS OF WOMEN PARTICIPATION IN RICE PROCESSING MARKETING
IN MAKURDI LOCAL GOVERNMENT AREA OF BENUE STATE, NIGERIA**

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ABSTRACT

The study was carried out to analyse the determinants of women in rice processing marketing in Makurdi Local Government Area of Benue State, Nigeria. The sample size of 120 respondents was selected through a multistage sampling procedure. Data for the study were collected using a structured questionnaire through interviews on-the-spot methods. Data was analysed using descriptive and inferential statistics. The results on socioeconomic characteristics of women rice processors marketers revealed the mean age of 42years, most (85.0%) were married with a household size, farm size, years spent in school, farming experience of 7 persons, 3.5hectares, 7.45 years 28years respectively. Majority (67.5%) of respondents were traders, with a mean annual total stock of 2875 kg, an annual income of N363,458.33, 88.3% 76.7% has no access to credit extension services, respectively. The result on activities performed by women in rice processing marketing revealed majority (100%) performed transportation, soaking of rice for parboiling, parboiling of rice milling of rice. The semilog regression result on women participation in rice processing marketing showed that age (-0.243), educational qualification (0.905), quantity of paddy rice stock (1.012) consumers purchasing power (0.828) were statistically significant determinants ($P < 0.01$). The result on the benefit cost ratio on profitability of rice processing marketing by women showed total variable cost (TVC) of N556,382.474, total revenue (TR) of N619,841.67, gross margin (GM) of N63,459.196 benefit cost ratio (BCR) of 1.11 (> 1). The multiple response result on challenges encountered by women in rice processing marketing showed majority (100%) were price fluctuation, low quality paddy rice for milling, inadequate marketing infrastructure lack of capital. The study concluded that women play a vital role in rice processing marketing, actively engaging in key activities such as transportation, soaking, parboiling, milling. The findings also revealed that determinants of participation included age, education, paddy rice stock, consumer purchasing power. It is therefore recommended that women rice processors marketers should be given greater access to affordable credit facilities through microfinance institutions, cooperatives, government interventions to enhance their operational capacity.

Keywords: Analysis, Role, Women, Rice, Processing, Marketing

INTRODUCTION

Agriculture is a mainstay of Nigeria's economy, contributing significantly to employment, economic growth food security through the production, processing marketing of crops livestock products. Rice is a major staple crop cultivated consumed by each household (Abubakar *et al.*, 2020). The Food Agriculture Organisation (2024) reported that Nigeria produced about 8.5 million metric tons of rice in 2024, making it the top rice-producing country in Africa. The production efforts of both men women farmers have contributed immensely, with women playing significant roles in reaching this milestone (Kabiru *et al.*, 2024). The role of women in agriculture encompasses diverse activities across food production, processing, marketing. Their contributions span from cultivating crops to adding value through processing ensuring market accessibility for agricultural products (Obademi and Adikwu, 2015). Pinga *et al.* (2024) stated that, in most developing countries, women participate in farming activities such as 1 preparation, planting, weeding, harvesting, processing, marketing. The Food Agriculture Organization (FAO) (2024) opined that women are the backbone of the rural economy in the developing world due to the important roles they play in contributing towards food security through production, processing marketing. Abubakar *et al.* (2020) opined that women are responsible for about 60% to 80% of food production in developing countries. Kughur *et al.* (2024) mentioned that, women



farmers play important roles in the rural areas have made a remarkable contribution particularly towards rice farming, processing marketing.

The participation of women in rice farming embrace myriads of activities spanning from 1 preparation to post-harvest management activities such as transporting, storage, processing marketing. They are also involved in 1 clearing, soil preparation, seed selection transplanting, often using manual tools (Bilikisu, 2023). Also, women are actively involved in labor-intensive weeding to control unwanted plants enhance yields either manually or through use of knapsack sprayer to apply herbicides, likewise application of fertilizers to boost yield (Tijani Tijani, 2019). At harvest time, women use traditional tools such as sickles to cut rice stalks, followed by threshing, winnowing, drying to prepare the grains for further processing. Beyond production, women play a dominant role in rice processing, hling key activities that add value to the crop ensure its quality for consumption marketability (Muhammad *et al.*, 2021). According to Akinagbe Ayibiowu (2020) women participation spans several stages of rice processing including milling, parboiling, drying, sorting, packaging. About 5.2 million metric tons of rice was milled in 2024 embracing the milling activities of women who are most involved. In many rural communities, women are responsible for parboiling rice, a process that involves soaking, steaming, drying the grains to improve nutritional quality ease of milling. They also hle manual mechanical milling, where husks are removed to produce polished rice. Additionally, women engage in winnowing to separate grains from husks sorting to ensure uniform quality before packaging (Ufondu *et al.*, 2021).

Women's participation in rice processing marketing has improved their livelihoods by creating economic opportunities enhancing food security. Processing activities such as parboiling, milling, drying, packaging enable women to add value to rice, making it more marketable increasing their income (Abubakar *et al.*, 2020). Many women engage in small-scale rice processing businesses, which serve as a source of employment financial independence. These activities also contribute to household sustenance, as processed rice is stored for family consumption, reducing food insecurity improving nutrition. Furthermore, efficient rice processing helps minimise post-harvest losses, ensuring that women their families get the maximum benefit from their labour (Kabiru *et al.*, 2024).

According to Edeoghon *et al.* (2019), marketing of processed rice empowers women by allowing them to participate in local regional trade, where they can sell their products generate revenue. Women play a crucial role in negotiating prices, building trade networks, managing rice distribution within their communities. This involvement not only strengthens their financial status but also enhances their decision-making power within households farming groups (Ufondu *et al.*, 2021). However, challenges such as limited access to credit, modern processing equipment, formal markets hinder their full participation. Addressing these barriers through financial support, training, improved market access can significantly enhance the economic social well-being of women engaged in rice processing marketing (Tijani Tijani, 2019).

Rice is a staple food a major source of income for many households in Nigeria, particularly in Benue State, which is often referred to as the "food basket" of the nation. While significant attention has been given to rice cultivation, less focus has been placed on the post-harvest activities of processing marketing, where women play a dominant role. Despite their critical contributions, the roles of women in these segments of the rice value chain remain underexplored, leading to gaps in knowledge support systems that could enhance productivity economic outcomes. Women engage actively in rice processing marketing, often juggling these roles alongside household community responsibilities. However, they face numerous challenges, including limited access to credit facilities, inadequate processing equipment, poor market infrastructure, lack of training on modern processing techniques. These challenges not only affect the efficiency quality of rice products but also limit women's income-generating potential economic empowerment within the agricultural sector. Moreover, the gender dynamics within the rice value chain create barriers to women's full participation in decision-making processes related to agricultural policies resource allocation. Socio-cultural norms, combined with limited access to education extension services, further exacerbate these issues, leaving women marginalized despite their significant contributions. This marginalization not only affects the



livelihoods of the women involved but also hampers the overall growth competitiveness of the rice industry.

Several studies have been carried out concerning the role of women in rice farming. For example, Kabiru *et al.* (2024) examined “assessment of rural women participation in rice production, processing marketing in Zone A, Kano State, Nigeria”; Abubakar *et al.* (2020) studied “Women Participation: A Productivity Strategy in Rice Production value chain in Kebbi Sokoto State, Nigeria”; Tondo (2017) researched on “comparative economic analysis of rice processing methods in Benue State, Nigeria”; Kughur *et al.* (2014) on effect of socio-cultural practice on women in food production in Guma Local Government Area of Benue State, Nigeria; Obademi Adikwu (2015) on assessment of the contribution of women farmers to agriculture development in Benue State; Pinga *et al.* (2024) examined “gender based analysis of labour utilization for rice production in Guma Local Government Area of Benue State, Nigeria”. Despite the importance of women’s roles in rice production, there is dearth of knowledge concerning the role of women in rice processing marketing in Makurdi Local Government Area, a research gap which this current study seeks to bridge.

- i. describe the socioeconomic characteristics of women rice processors marketers in Makurdi Local Government Area of Benue State;
- ii. identify the specific activities performed by women in rice processing marketing in the study area;
- iii. identify the determinants of women participation in rice processing marketing in the study area;
- iv. describe challenges facing women participation in rice processing marketing

METHODOLOGY

The Study Area

The research was conducted in the Makurdi Local Government Area of Benue State. Makurdi, the capital city, was established in the early 1920s gained importance in 1927 when it became the headquarters of the Benue Province. In 1976, it became the capital of Benue State. The estimated population of Makurdi in 2023 was 500,797 (NPC, 2023). The major ethnic groups in the area are the Tiv, Idoma, Igede, Etulo.

Makurdi is located between latitudes 7°40’N 7°50’N longitudes 8°20’E 8°40’E, covering a total area of approximately 670 km². It falls within the guinea savanna vegetation zone, with some patches of forest. The Local Government shares boundaries with Guma to the north, Gwer to the south, Tarka to the east, Gwer West Local Government Area to the west. A prominent geographical feature of the area is the River Benue, which divides the Local Government into two parts: the northern part, called the North Bank, the southern part, called the South Bank (BNARDA, 2020).

The primary occupation in Makurdi is farming, with approximately 75% of the population engaged in subsistence farming. Other important occupations include fishing, civil services, artisans, marketing. Makurdi consists of eleven council wards, namely Mbalagh, Agan, North Bank I, North Bank II, Fiidi, Wailomayo, Baa, Modern Market, Ankpa/Wadata, Clerk Market, Central/South Mission.

Population Sampling Techniques

The study population comprised all women involved in rice processing marketing in the Makurdi Local Government Area. A sample of 120 respondents was selected from a multistage sampling technique. In the first stage, a stratified sample of four markets in the Markurdi Local Government Area, including Modern Market, Wadata Market, Wurukum Market, Northbank Market. In the second stage, a 10% proportionate sampling of women rice processors marketers. This led to a total of 120 respondents, who are representatives of the study.

Table 1: Sample Framework

Markets in Makurdi	Number of women rice processors marketers	Sample proportion	Selected women rice processors marketers
Modern market	253	0.1	25
Wurukum market	341	0.1	34
Wadata market	312	0.1	31
Northbank market	302	0.1	30
Total	1214		120

Source: Rice processors marketers association of Makurdi (2025)

Method of Data Collection

Data for the study were collected from women rice processors marketers through interviews on-the-spot observations. The questionnaires were administered to the respondents by the researcher trained enumerators. The questionnaire is divided into four (4) sections. Section A sought information on respondents' socioeconomic characteristics. Section B sought information on processing activities women are involved in, while Section C sought information on determinants of women's participation in rice processing marketing challenges facing women's participation in rice processing, respectively.

Method of Data Analysis

Data for the study were analysed using both descriptive inferential statistics. Specific objectives III were analysed using frequency, percentages mean. Objective III will be analysed using logit regression.

Model Specification

Logit regression

$$P(Y = 1) = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n}}$$

where P(Y=1) represents the probability of women participation in rice processing/marketing,

e is the base of the natural logarithm,

β_0 is the intercept,

$\beta_1, \beta_2, \dots, \beta_n$ are the coefficients of the independent variables

X_1 = age (years)

X_2 = marital status (married=1, otherwise=0)

X_3 = household size (number of persons in house)

X_4 = education (years spent in school)

X_5 = farm size (hectares)

X_6 = major occupation (farming=1, otherwise = 0)

X_7 = annual income (naira)

X_8 = member of cooperative (yes=1, otherwise = 0)

X_9 = Access to credit (yes=1, otherwise=0)

e = error term

RESULTS

Socioeconomic Characteristics of Women Rice Processors Marketers

The result on socioeconomic characteristics of women rice processors marketers in Makurdi Local Government is presented in Table 2. The result on age shows that most (54.2%) of respondents are between the age bracket of 36 to 45 years, 25% were less than 35 years, 14.2% were between 46 to 55 years, while 3.3% were between 56 to 65 years above 66 years respectively. The mean age of women rice processors marketers was 42.02 years. This indicates that most women engaged in rice processing marketing are in their economically active productive age group. The dominance of this age group suggests that rice processing marketing are sustained by women with the capacity to combine innovation with labor-intensive activities. Similar findings were reported by Bose *et al.* (2020), who noted that women farmers within 30–45 years are more involved in agribusiness activities due to their strength commitment. Likewise,



The result on marital status revealed that majority (85%) of the respondents were married while 10.8% were single 4.2% widowed. This suggests that married women rely on rice processing marketing as a means of supporting household welfare. Marital status plays a significant role in motivating women to engage in rice-related businesses as a livelihood strategy. The findings of the study were similar to Adam *et al.* (2018) who found that married women often engage in agricultural enterprises to supplement family income. Also, in line with Bose *et al.* (2020) who confirmed that marital responsibility influences women's involvement in rice value chains as they seek income diversification.

Regarding household size, majority (72.5%) of respondents had between 6 to 7 persons in the house, 24.2% had less than 5 persons while 3.3% has more than 8 persons in the house. The mean household size was 7 persons. The household size is thus reasonable enough to supply household labour which is opportunity cost to hired labour. By implication, a reasonable household sizes decreases women's expenditure on hired labor, influencing profitability in processing marketing of rice. This agrees with the findings of Oludayo *et al.* (2019) who reported that a household size of between 7-9 person in Benue State.

The result on farm size shows that most (39.1%) of respondents cultivates less than 3.5hectares, while 30% had between 1.51 to 2.50hectares, 24.2% hd between 2.51 to 3.50hectares, 6.7% had between 0.51 to 1.50hectares. The mean mean of 3.5 ha implies that women in rice processing are also relatively large-scale farmers. Larger farm holdings enhance processing activities by ensuring adequate raw material supply. These findings is in agreement with that of Ohen *et al.* (2013) who found that women with larger farm sizes have greater rice output for processing.

The results on years of schooling, revealed that, majority (76.7%) of respondents spent less than 9years in school while 11.7% spent between 10 to 13years more than 14years in school respectively. The mean years spent in school was 7.45 years, which indicates that, respondents has spent some time in school thus literate but not highly educated. This suggests that most women have only primary or junior secondary education. By implication, low educational attainment may hinder women's ability to keep business records, access credit, or utilize modern innovations effectively.

Farming experience findings revealed that most (52.5%) of respondents had spent more than 16 years in farming, 43.5% had spent about 6 to 15 years in farming, 4.2% had spent less than 5 years in farming. Respondents spent an average of 28.3 years in farming. This has shown that respondents have spent more time in farming have a high level of expertise in farming, which is very important for rice processing marketing. Farmers well underst the trends in production marketing due to their experience. This implies that, accumulated experience strengthens women's adaptation strategies in processing marketing with security in provision of raw materials for processing markets to sell their processed rice (milled rice) to achieve profitability.

The results of the major occupation showed that the majority (67.5%) of respondents are traders, 20.8% are farmers, 8.3% are artisans, 3.3% are civil servants. This has shown that most of the respondents are trading in rice. This implies that the majority of women who processed marketed rice were traders who pursued profit objectively. Trading is one of the most important occupations considered a tradition among women, as they lack control over most farming resources. This is consistent with the findings of Mafimisebi Ikuerwo (2018) Ohen *et al.* (2013), who reported that most women are traders. This was supported by Alkali *et al.* (2019), who found that most women are involved in the trading of agricultural produce in Benue State.

The result on access to credit reveals that the majority (88.3%) of respondents do not have access to credit, while only 11.7% having access to credit. This indicates that, even though there exist government schemes policies on granting credits/loans to small-scale enterprises, most of the credits do not reach the women involved in rice processing marketing. Most of these credits are diverted not monitored properly to ensure that rice processors marketers also get to it. This has negative implications for rice processors marketers because, without adequate credit, women face challenges in scaling up processing marketing enterprises. This agrees with the findings of Awotide *et al.*, (2019), who reported that the lack of credit hinders women's agribusiness expansion in Benue State. Likewise, Peter (2020) noted that stringent collateral requirements discourage women from formal financial institutions in Nigeria.



The result concerning annual total stock showed that most (38.3%) of respondents held between 501 to 2000kg of rice in stock, 27.5% held less than 500kg, 20.0% held between 2000 to 3500kg, 14.2% held more than 5000kg, while 3.3% held between 3500 to 5000kg. The average annual stock was 2,875 kg which reflects moderate levels of processing capacity. This has showed that most of the processors/marketers were small scale entrepreneurs with moderate stock for processing. With these smaller units of stock, most a times milled rice seems to be scarce thus triggering increase in market price. This is in line with the findings of Adebayo Lawal (2020) who reported that women involved in processing/marketing rice holds small quantity of stock due to the small-scale nature of the enterprise.

The result on annual income showed that most (43.3%) of respondents earn more than N350,001.00, 12.5% earn between N100,001 to N150,000.00 less than N100,000.00, 11.7% earn between N300,001 to N350,000, 10.0% earn between N150,000.00 to N200,000.00, 5% earn between N250,000 to N300,000.00 while 1.7% earn between N200,000 to N250,000.00. The mean annual income earned by respondents was ₦363,458.33, which indicates that rice processing/marketing are profitable ventures. Rice processing/marketing contribute significantly to income earned by women who participate in rice trading. These findings coincide with that of Eze Nwachukwu (2019) who reported that women processors generate substantial income that supports household expenditure in Benue State. The findings disagree with Oludayo *et al.* (2019) who reported the annual farm income of between N51,000 to N100,000.00.

The result on access to extension services showed that, majority (76.7%) of the respondents do not have access to extension services while only 23.3% of respondents accessed extension services. This indicates that, most of the rice processors/marketers do not have access to extension services. This implies that, limited extension contact may restrict women's access to improved technologies/market information. This finding is consistent with Kyaw *et al.* (2018), who reported low extension coverage for women. Likewise, Ayoola (2012) emphasized that women farmers are often marginalized in extension delivery.

Table 2: Socioeconomic Characteristic of Women Rice Processors Marketers

Socioeconomic characteristics	Frequency	Percentage	Mean
Age (years)			42.02
35.00	30	25.0	
36.00 - 45.00	65	54.2	
46.00 - 55.00	17	14.2	
56.00 - 65.00	4	3.3	
66.00+	4	3.3	
Marital status			
Married	102	85.0	
Single	13	10.8	
Widow/ed	5	4.2	
Household size			7.0
≤ 5.00	87	24.2	
6.00 - 7.00	29	72.5	
8.00+	4	3.3	
Farm size			3.5
.51 - 1.50	8	6.7	
1.51 - 2.50	36	30.0	
2.51 - 3.50	29	24.2	
>3.50	47	39.1	
Years spent in school			7.45
≤ 9.00	92	76.7	
10.00 - 13.00	14	11.7	
14.00+	14	11.7	
Farming experience			28.3
≤ 5.00	5	4.2	
6.00 - 15.00	52	43.3	
16.00+	63	52.5	
Major occupation			
Farming	25	20.8	
Trading	81	67.5	
Civil service	4	3.3	
Artisans	10	8.3	
Access to credit			
Yes	14	11.7	
No	106	88.3	
Annual total stock (kg)			2875kg
≤ 500.00	33	27.5	
501.00 - 2000.00	46	38.3	
2001.00 - 3500.00	24	20.0	
3501.00 - 5000.00	4	3.3	
>5000.00	13	14.2	
Annual income (naira)			N363,458.33
≤ 100000.00	15	12.5	
100001.00 - 150000.00	15	12.5	
150001.00 - 200000.00	12	10.0	
200001.00 - 250000.00	2	1.7	
250001.00 - 300000.00	6	5.0	
300001.00 - 350000.00	14	11.7	
>350,0001	56	43.3	
Access to Extension Services			
Yes	28	23.3	
No	92	76.7	

Source: Field Survey, 2025



Activities Performed by Women in Rice Processing Marketing

The result on activities performed by women in rice processing marketing is presented in Table 3. The result showed that majority (100%) of respondents hld activities such as transportation, soaking of rice for parboiling, parboiling of rice milling of rice, while 98.3% were involved in drying parboiled rice, 91.7% hle pricing, 85.0% hle selling 30.8% of respondents were involved in purchase of products from farmers/ assembly. This finding showed that, respondent were evenly distributed in all the activities pertaining processing marketing of rice in the study area. This is in line with the findings of Adam et al. (2018) who reported soaking, parboiling milling as activities in rice processing. Similarly, Bose et al. (2020) reported that pricing selling as activities of marketing.

Table 3: Activities Performed by Women in Rice Processing Marketing

Processing marketing activities	Frequency	Percentage
Purchase of product from farmers /assembly	37	30.8
Transportation	120	100.0
Soaking of rice for parboiling	120	100.0
Parboiling of rice	120	100.0
Drying of parboiled rice	118	98.3
Milling of rice	120	100.0
Pricing	110	91.7
Selling	102	85.0

*Multiple Response

Source: Field Survey, 2025

Determinants of Women Participation in Rice Processing Marketing

The result on determinants of women participation in rice processing marketing is presented in Table 4. Three functional forms were used in which were linear, semilog double log regression functions. The lead function was selected based on the highest R-square. Semilog function has the highest R-square of 0.478 which implies that, 478% of the variation in women participation in rice processing marketing is explained by independent variables. This was supported by the adjusted R-squared of 0.45(45.0%). The F-statistics was 17.25% statistically significant at 1% which implies that the explanatory variables jointly determine women participation in rice processing marketing. The null hypothesis which states that, there is no determinants of women participation in rice processing marketing is rejected the alternative hypothesis not rejected. Among the six variables included in the model, only age, educational qualification, quantity of paddy rice consumer purchasing power were statistically significant.

Age (-0.243)

The coefficient of age is negative (-0.243) statistically significant at 1% which implies that a unit increase in age respondents will rather reduce participation in rice processing marketing. This signifies that, as the age of respondents increases the tendency to reduced their participation in processing marketing. This could be because, rice processing is more fitting to able persons those who are aged could not fit in due to the activities such as parboiling drying which is energy consuming regarding small scale enterprise. This is in line with a priori expectation which states that increase n age decreases women participation in rice processing marketing. This finding aligns with the observations of Akintoye et al. (2019) Odoemenem and Obinne (2010), who noted that younger farmers are often more energetic, risk-taking, responsive to agribusiness opportunities

Educational qualification (0.905)

The coefficient of educational qualification was positive (0.905) statistically significant at 1% which implies that, increase in educational qualification by a year will increase women participation in rice processing marketing. This implies that, the more learned educated are women, the more they will participate in rice processing marketing. This entails that, education will impact knowledge in terms of improves processing technology marketing strategies which will propel women to increase their level of participation in rice processing marketing. Education likely improves managerial skills, record-

keeping, access to information, which boosts women’s efficiency in rice processing marketing. This is in line with a priori expectation which states that increase in knowledge increase participation in processing marketing. This corroborates findings by Kyaw et al. (2018) who stressed that education facilitates agribusiness participation income generation. This findings coincide with that of Bose et al. (2020) who reported that, education significantly influence marketing of agricultural produce.

Quantity of paddy rice (1.012)

The coefficient of quantity of paddy rice is positive (1.012) statistically significant at 1% which implies that, increase in quantity of paddy rice will lead to increase in women participation in rice processing marketing. This indicates that, the quantity of rice in stock will make women indulge in processing marketing of rice because the raw material is available. This relates to the a priori expectation which showed that, increase in quantity of rice will increase processing marketing. This agrees with the findings of Idu et al. (2022) who reported that paddy quantity influence processing marketing. Similarly, Akinbile et al. (2017), who found that access to farm produce significantly influenced women’s agribusiness engagement.

Consumer purchasing power (0.828)

The coefficient of consumer purchasing power is positive (0.828) statistically significant at 1% which implies that a unit increase in purchasing power of consumers will increase women participation in rice processing marketing. This indicates that, when rice supplied in the market is purchase timely due to the purchasing power of consumers, it triggers entry into business. This makes supply to be matched with dem thus even starters in the business of processing marketing will not fold up but rather continue with transactions. This is in line with the findings of Alkali et al. (2019) who reported that consumer purchasing power significantly influences the marketing of milled rice. This finding is supported by Ezeh et al. (2021), who noted that consumer dem affordability strongly influence women’s market participation in staple food crops.

Table 4: Determinants of Women Participation in Rice Processing Marketing

Women participation (revenue)	Linear		Semilog		Double log	
	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
Constant	1566936	591729.4	17.706***	1.760	18.88	1.795
Age	-83065.68	19060.09	-0.243***	0.056	-0.659	0.166
Educational qualification	207979.5	47903.2	0.905***	0.142	1.889	0.266
Quantity of paddy rice stock	-235275.5	83915.18	1.012***	0.249	-2.477	0.580
Lack of startup capital	-28729.14	32638.21	-0.089	0.097	-0.192	0.285
Pricing patronage	-41101.81	105265.8	-0.351	0.313	-1.177	0.843
Consumer purchasing power	-202013.2	56193.86	0.828***	0.167	-2.888	0.536
RSquare	0.355		0.478		0.458	
Adj. Rsquare	0.321		0.450		0.429	
Fstatistic	10.36		17.25		15.96	
Prob. F.	0.00		0.000		0.000	

***, **, * 1%, 5% 10% level of significance

Challenges Encountered by Women in Rice Processing Marketing

The result on challenges encountered by women in rice processing in marketing is presented in Table 6. The multiple response result was ranked in a descending order from first to last.

1st - Price fluctuation, low quality paddy rice for milling, inadequate marketing infrastructure, lack of capital (100%)

The result showed that price fluctuation, low quality paddy rice milling, inadequate marketing infrastructure, lack of capital (100%) were the most recognized challenges by respondents towards rice processing marketing in the study area. This indicates that women in rice processing marketing identify price fluctuation which affects dem supply, causing shortages glut in the market. Also, most paddy supply for processing has low quality which could be as a result of climate changes which affect the quality of paddy grains leading to loss when rice is parboiled. Likewise, inadequate market



infrastructure prevents marketer from getting appreciable prices improve technology to support processing marketing of rice. This is in line with the findings of Bose et al. (2022) Adam et al. (2018) who identify price fluctuation lack of infrastructure as challenges towards rice processing. Similarly, Inua (2021) reported that low quality paddy from local farmers as a challenge to rice processing marketing.

5th – Lack of improve processing technology (97.5%)

The result showed that lack of improved processing technology (97.5%) is a challenge to rice processing marketing. This indicates that most of the rice processors still base on traditional processing practices which include parboiling of paddy using firewood, manual drying under the sun these practices affect the quality of rice grains for consumption marketing. With this use of traditional practices, processing efficiency is not met and most a times processors run at a loss. This is in agreement with the findings of Ali Ajagbe (2021) Mafimisebi Ikuero (2018) who reported that lack of improved technology is a major problem in rice processing marketing in Southwest, Nigeria.

6th – Poor pricing policies (96.7%)

Another challenge encountered by women in rice processing marketing is poor pricing policies (96.7%). Poor pricing policies affects rice processing marketing. Most atimes when government wants to have buffer stock, prevailing market prices are set low which affects both processors marketers. This affects the dem supply of the product causing scarcity in the market. This is supported by Takele (2020) who both reported that low prices increases dem but reduces supply of rice in the market.

7th – High cost of milling (91.7%)

High cost of milling (91.7%) is another challenge towards rice processing marketing. This is accrued to cost of production. This indicates that most atimes, due to weather conditions unavailability of labour. Most of the milling activities are carried out a high cost. This cost could also be because of high cost of materials used in parboiling milling like water, firewood, mats, etc. this is in line with the findings of Takele (2020) who agreed that high cost of milling is a challenge to rice processin marketing.

8th – Shortage of paddy in the market (85.8%)

Another challenge to rice processing marketing is shortage of paddy in the markets (85.8%). This occurs when there is shortage of product in the market which is on the supply side. Most atimes when the prevailing market price is not appealing, farmers tend to hold on their surplus, this cause shortage in the markets for processors who do not produce but depend on the market to obtain their raw materials for processing. This is agreed by Bose et al. (2020) Adam et al. (2018) that shortage of raw materials is a challenge to processing industries in Nigeria.

9th – High market taxes (90.8%)

The issue of high market taxes (90.8%) is also a challenge to rice processing marketing. This is so because investors who want to indulge in rice processing face the challenge of been over taex by the community, local government states. These investors tend to fold up or not invest in rie processing again. Also, marketers who supply their goods for sell in the markets tend to withdraw if the market tax is high. This coincide with the findings of Mafimisebi Ikuero (2018) who reported that high tax is a challenge to small scale enterprises in Nigeria. This was supported by the findings of Takele (2020) that high market taxes sts as a challenge towards rice marketing in Nigeria.

10th – Activities of middlemen causing shortages in the market (52.5%)

The tenth ranked challenge was activities of middlemen causing shortages in the markets (52.5%). This indicates that most middlemen in rice value chain tend to hoard rice products in expectations of rice in market prices in the future. This has caused a lot of shortages in supply, increasing dem rise in market prices. This is tem with the findings of Bose et al. (2020) who reported that, middlemen cause shortage in market products.

11th – High cost of transportation (43.3%)

High cost of transportation (43.3%) is the least challenge towards rice processing nd marketing as identified by respondents. The rise in transportation cost could be due to bad roads, poor road network removal of fuel subsidy. This is an addition to variable costs which affects the profit revenue obtained. This is agreed by Hoq et al. (2022) as a challenge towards rice processing marketing.



Table 5: Challenges Encountered by Women in Rice Processing Marketing

S/No.	Challenges women face in processing marketing of rice	Frequency	Percentage	Rank
i.	Shortage of paddy in the market	103	85.8	8 th
ii.	Price fluctuation	120	100.0	1 st
iii.	Low quality paddy rice for milling	120	100.0	1 st
iv.	Lack of improve processing technology	117	97.5	5 th
v.	Inadequate marketing infrastructure	120	100.0	1 st
vi.	Poor pricing policies	116	96.7	6 th
vii.	Lack of capital	120	100.0	1 st
viii.	Activities of middle men causing shortage in the market	63	52.5	10 th
ix.	High market taxes	109	90.8	9 th
x.	High cost of transportation	52	43.3	11 th
xi.	High cost of milling	110	91.7	7 th

*Multiple Responses

Source: Field Survey, 2025

CONCLUSION AND RECOMMENDATION

The study concludes that women play a vital role in rice processing marketing, actively engaging in key activities such as transportation, soaking, parboiling, milling. The findings revealed that determinants of participation included age, education, paddy rice stock, consumer purchasing power, suggesting that improving women's access to education, credit facilities, extension services, market infrastructure would enhance their participation economic returns in rice value chains. The study recommended that;

- i. Women rice processors marketers should be given greater access to affordable credit facilities through microfinance institutions, cooperatives, government interventions to enhance their operational capacity;
- ii. Relevant agencies should strengthen extension service delivery by providing training in improved rice processing, storage, marketing techniques to boost productivity efficiency;
- iii. Policies should focus on stabilizing rice prices improving market infrastructure (e.g., storage facilities, processing centers, roads) to reduce risks associated with market fluctuations distribution.

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