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GENDER ROLES IN CASSAVA PROCESSING FOR INDUSTRIALIZATION AMONG FAMILIES IN BENUE STATE, NIGERIA

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Abstract: *The study focused on gender roles in cassava processing for industrialization among families in Benue State Nigeria. A multistage sampling procedure was used to draw sample of 200 male and female cassava farmers. Data collection was with the aid of a structured questionnaire. Descriptive and inferential statistics were used to analyse the data. Results on socio economic characteristics showed that majority of the respondents were aged 29-38 years, 36.5% were between the age range of 39-48 year. The married constituted the majority (86.0%) of the respondents, the mean household size of respondents was 9 persons, 42.0% of the respondents had primary education, 31.5% had tertiary education and 26.5% had secondary education. The study revealed that the main occupation of the respondents was farming (80%), it also revealed that majority (72.5%) of respondents had no access to credit. The study shows the distribution of respondents on gender roles in cassava processing among families in the study area. The study revealed that male respondents were mostly involved in harvesting □ = 2.71 female had □ = 0.20, they were also involved in grating men □ = 2.57 while female had □ = 1.45, pressing □ = 2.24 and transportation □ = 2.18. In Benue State, gender roles in cassava processing are distinctly defined, with men primarily handling tasks such as land preparation and harvesting, while women dominate processing activities, including peeling, fermenting, and sieving. This division of labor reflects traditional societal norms, economic necessity, and access to resources. Despite women's significant contributions, they often face challenges such as limited access to financial support, modern processing equipment, and market opportunities. Addressing these disparities through targeted interventions, including improved technology, credit access, and capacity-building programs, can enhance productivity and promote gender equity in cassava value chains. Based on the findings of the study the following recommendations are made: Cassava value addition should be enhanced by the concerned agencies across gender roles. For the men provide training and resources for improving cassava ethanol and chip production processes, including quality enhancement and meeting industrial standards. They should be encouraged to invest in small-scale ethanol and chip processing technologies to increase efficiency and profitability. For women: offer support for scaling up the production of garri, abacha, fufu, akpu, cassava flour, pap, and starch. Facilitate training on packaging, branding, and marketing to boost the competitiveness of these products in local and international markets.*

Key words: *Gender, gender roles, production, process, cassava.*

1.0 INTRODUCTION

1.1 Background to the Study

Cassava (*Manihot esculenta Crantz*) is a major staple crop in many tropical and subtropical regions, particularly in sub-Saharan Africa, Latin America, and Southeast Asia. It serves as a primary source of carbohydrates for millions of people and plays a vital role in food security and rural livelihoods (FAO, 2021). Cassava processing is an essential post-harvest activity that transforms the root into various consumable and marketable products such as *garri, fufu, flour*, and starch. The process includes peeling, washing, grating, fermenting, pressing, drying, and packaging, each stage requiring significant labor input (Adebayo & Akinbile, 2020). Cassava is also a source for starch used in the textile industry for sizing and finishing fabrics. It provides stiffness to the fibers and improves the weaving process. Paper and Pulp Industry: Cassava pulp, a by-product of starch extraction, can be used in the paper and pulp industry (Admase, Mersha, and Kebede, 2024).

Gender roles in cassava processing and textile production share similarities in labor division, resource access, and skill application, particularly in rural and agricultural communities. In many societies, women play a crucial role in cassava processing, handling labor-intensive tasks such as peeling, fermenting, drying, and milling. In Benue State, women are the primary labour force in cassava processing, particularly in manual activities such as peeling, grating, fermenting, and drying, while men are more involved in mechanized processing, transportation, and marketing (Okoh et al., 2021). This gendered division of labor reflects broader socio-economic structures where men control income-generating aspects of the value chain, whereas women's contributions are often undervalued and informal (Ezeibe et al., 2019). Similarly, in textile processing (especially traditional textile crafts like dyeing, weaving, and printing), women are often responsible for intricate, time-consuming processes requiring dexterity and attention to detail. Women involved in cassava processing can extend their roles into textile applications, adding value to agricultural by-products. Despite their significant involvement, women face numerous challenges, including limited access to processing technologies, financial capital, and organized markets, which hinder their productivity and economic benefits (Odebode, 2020)

Extension services can play a pivotal role in bridging these industries, providing training on how cassava could be processed, thereby promoting economic empowerment, waste reduction, and innovative rural enterprises. Several studies highlight the gender disparities in cassava value chains. According to Odebode (2022), women contribute over 70% of cassava processing activities in Nigeria, yet they earn less due to unequal access to resources and market linkages. Similarly, a study by Kinkingninhoun-Mêdagbé et al. (2018) in Benin found that gender-based labour division affects efficiency, as women engage in labor-intensive manual processing while men benefit from mechanization. The lack of formal recognition of women's roles in cassava processing further exacerbates gender inequalities, reinforcing economic dependency and limiting their empowerment (Quisumbing et al., 2021).

Research has shown that gender disparities in cassava processing impact household income and overall productivity. A study by Akinpelu et al. (2022) found that women in Benue State contribute over 65% of cassava processing labour, yet they earn significantly less than their

male counterparts due to unequal access to credit and mechanized equipment. Similarly, Agada and Igbokwe (2018) highlighted that women's reliance on traditional processing methods, such as hand grating and sun drying, reduces efficiency and product quality, affecting their competitiveness in larger markets. The limited inclusion of women in decision-making processes within cassava cooperatives and agricultural extension programs further exacerbates gender inequalities (FAO, 2020). Addressing gender disparities in cassava processing requires policy interventions aimed at improving women's access to resources, credit, and technology. The adoption of gender-sensitive policies and the promotion of inclusive value chains can enhance productivity and equity in cassava processing sectors (FAO, 2021). Understanding these gender roles is essential for designing effective interventions that empower women and ensure sustainable agricultural development.

1.2 Problem Statement

Cassava processing plays a crucial role in the agricultural economy of Benue State, Nigeria, where it serves as a primary source of food and income for rural households. However, the division of labor in cassava processing is highly gendered, with women predominantly engaged in labor-intensive tasks such as peeling, grating, fermenting, and drying, while men dominate the mechanized aspects, transportation, and marketing (Agada & Igbokwe, 2018). This unequal labor distribution reflects deep-rooted socio-cultural norms and economic barriers that limit women's access to modern processing technologies, financial resources, and market opportunities, ultimately affecting productivity and income distribution (Akinpelu et al., 2022).

Despite their significant contributions to cassava processing, women in Benue State face challenges such as poor access to credit facilities, limited ownership of land and equipment, and exclusion from decision-making in agricultural cooperatives (Ezeibe et al., 2019). These challenges hinder their capacity to improve efficiency, scale production, and maximize financial gains. Additionally, traditional processing methods used by women are often less efficient compared to mechanized approaches employed by men, leading to lower yields and reduced competitiveness in the market (Okoh et al., 2021). The lack of gender-responsive policies further exacerbates these disparities, limiting efforts to promote inclusive agricultural development in the state.

Given the critical role of cassava in rural livelihoods and food security, it is imperative to examine the gender roles in its processing and the socio-economic implications for men and women in Benue State. Understanding these gender disparities will help identify key constraints and inform policy interventions aimed at promoting equitable access to resources, improving productivity, and enhancing women's economic empowerment in the cassava value chain. This study seeks to address these gaps by analyzing the gender-specific challenges in cassava processing and recommending strategies for achieving gender-inclusive agricultural development in Benue State.

1.3. Objectives of the Study

The broad objective of the study was to analyse gender roles in cassava processing among families in Benue state. The specific objectives of the study were to:

i. describe the socio-economic characteristics of cassava farmers in study area;
ii. describe roles of gender in cassava processing in the study area;

iii. identify the various cassava products processed by males and females in the study area:
iv. identify the constraints to effective cassava processing by male and female respondents in the study area.

1.4. Research questions

1. What are the socio-economic characteristics of cassava farmers and processors in the study area?
2. What are gender roles of male and female in cassava processing in the study area?
3. What are the various cassava products processed by male and female respondents in the study area?
4. What are the constraints to effective cassava production and processing by male and female respondents in the study area?

The study will contribute to extension workers and agricultural trainers in understanding the gender dynamics in agricultural systems, fostering a more equitable distribution of resources and responsibilities. It will align with global efforts to achieve gender equality, such as the United Nations' Sustainable Development Goal (SDG) 5, which emphasizes empowering women and girls. The study will provide evidence-based insights that can guide policymakers in developing gender-sensitive agricultural policies and programs. Governments and NGOs can use the findings to implement interventions that address specific gender needs in cassava production, such as training programs, credit schemes, and access to modern processing technologies

2.0 METHODOLOGY

2.1 Study Area

This study was conducted in Benue State. The state was carved out of the former Benue-Plateau State and part of the present Kwara State. It derived its name from the Benue River. It is located in the north central geo-political zone of Nigeria with 23 Local Government Areas and Makurdi as its capital.

2.2 Sampling Techniques and Sample Size

The target population for this study consists of all cassava farmers in Benue **State**. A multi-stage sampling technique was used to select respondents for this study.
Stage 1 Involved the purposive selection of three (3) Local Government Areas (LGAs) in Benue State. These included Gwer East, Logo and Okpokwu LGAs. These Local Government Areas were selected due to high cassava production and processing.

Stage 2 This stage involved the purposive selection of three (3) communities from each of the selected LGAs in Benue State. The selected communities are known for high cassava production and processing activities. In Gwer east (Ikpayongo, Aliade and Taraku), in Logo (Ugba, Anyiin and Abede), and in Okpokwu (Aidogodo, Agene and Amuju) communities were used for the study. These made upthe nine (9) communities that were used for the study.
Stage 3 This stage involved the random (balloting) selection of 60% of cassava producers who are also involved in processing from list of 334. These comprised 110 males and 90

female's cassava producers and processors. This was obtained from the office of Value Chain Development Programme (VCDP) in Benue State.

Table 1. Distribution of sample size

LGA	Selected communities	registered cassava producers		60% randomly selected cassava producers	
		Men	Women	Men	Women
Gwer East	Ikpayongo	21	18	13	11
	Aliade	17	15	10	9
	Taraku	22	16	13	10
Logo	Ugba	20	14	12	8
	Anyiin	21	20	13	12
	Abede	19	14	11	8
Okpokwu	Aidogodo	25	19	15	11
	Agene	19	15	11	9
	Amuju	20	20	12	12
Sub-total		**184**	**151**	**110**	**90**
Total = 3	**9**	**334**		**200**	

Source: Value Chain Development Programme Office, Benue state, 2024

2.3 Method of Data Collection

This study used primary data. A structured questionnaire was used to collect data from respondents in the study area.

2.4 Method of Data Analysis

The data collected for the study were analyzed based on the specific objectives of the study was to evaluate roles of males and females in cassava processing (objective i), the various cassava products processed by male and female (objective ii), and constraints to effective cassava processing by male and female respondents (objective iii) were analyzed using descriptive statistics such as frequencies, percentages and mean. Hypotheses was tested using t-test.

2.5 Gender Roles in Cassava Processing in the Study Area

Table 2 shows the distribution of respondents on gender roles in cassava processing among families in the study area. The study revealed that male respondents were mostly involved in harvesting$\bar{x}$ = 2.71 female had $\bar{x}$ = 0.20, they were also involved in grating men $\bar{x}$ = 2.57 while female had $\bar{x}$ = 1.45, pressing $\bar{x}$ = 2.24 and transportation $\bar{x}$ = 2.18.

Harvesting cassava is a labor-intensive activity that requires significant physical strength to uproot the tubers from the soil. Studies reveal that this task is primarily carried out by men in most cassava-producing regions due to its strenuous nature and the cultural association of men with heavy agricultural labor. Men's involvement in harvesting is often tied to their perceived physical capability to handle labor-intensive tasks, particularly in areas with poor soil conditions or where mechanized tools are unavailable (Adebayo *et al.,* 2020). In patriarchal societies, men often control access to farmland, which influences their dominance in harvesting activities (Ewusia *et al*., 2021).

Grating cassava, a critical step in processing, involves breaking down the tubers into smaller particles, often using manual or mechanized equipment. This stage is frequently handled by men, especially where mechanization is involved.

Mechanized graters are often operated by men due to their familiarity with machinery or the cultural view that technical work is male-oriented (Nwosu *et al.,* 2020). In commercial-scale processing, grating is typically taken over by men who dominate cooperative processing plants or are hired as laborers (Ogundipe & Fasina, 2018). In some communities, the introduction of mechanical graters has reduced women's participation in grating activities, with men assuming control of this vital stage (Agwu *et al.,* 2017)

From the results of the findings men are fully involved in pressing ($\bar{x}$ = 2.24), this involves removing excess water from grated cassava pulp, a step that requires either physical effort or mechanical pressing equipment. This activity is also largely undertaken by men.

It was noted that manual pressing, which involves squeezing liquid out of the cassava pulp, is regarded as a masculine task due to its physical intensity (Ewusia *et al*., 2021). Adebayo *et al*., 2019 revealed that with the advent of hydraulic or screw presses, men have increasingly dominated this phase because of their access to and control over processing equipment. Pressing is often allocated to men in settings where cassava is processed in groups, with women taking on lighter roles such as sieving or peeling (Okeke *et al.,* 2018).

The female respondents were mostly involved in washing $\bar{x}$ = 2.76, frying of garri $\bar{x}$ = 2.69, sieving $\bar{x}$ = 2.49 and fermentation $\bar{x}$ = 2.14. Washing cassava tubers which was revealed from the study to be one of the major processing activities involved by the female ($\bar{x}$ = 2.76) is a critical step to remove dirt and impurities before further processing. This activity is predominantly carried out by women due to its association with domestic tasks and attention to detail. Washing is traditionally seen as an extension of women's roles in household activities, as they are typically responsible for food preparation (Agwu *et al.,* 2017). While labor-intensive, washing is often performed manually without requiring complex tools, making it accessible for women even in resource-constrained environments (Okeke *et al.,* 2018). Nwosu *et al.,* 2020 said in rural areas, washing is sometimes carried out collectively by women, especially during group processing for community markets (Nwosu *et al.,* 2020

Findings of the study also revealed that women were fully involved in frying as the final stage in preparing cassava products like garri and is traditionally carried out by women. This

process requires significant skill and constant attention. Frying involves prolonged exposure to heat and demands skill to stir continuously without burning the product. Women are often praised for their ability to multitask and manage such intense processes (Ogundipe & Fasina, 2018). According to Adebayo *et al.,* (2019) in some communities, women fry cassava in bulk for sale in local or urban markets, often working long hours to meet demand. Frying is crucial to ensuring product quality, and women's expertise in achieving the desired texture and color is highly valued in cassava-processing value chains (Ewusia *et al*., 2021).

From the findings Sieving was mostly done by the women. It involves separating coarse particles from fermented or grated cassava pulp to achieve a smooth texture, particularly for products like garri. Sieving is a task that demands patience and manual dexterity, traits often culturally attributed to women (Agwu et al., 2017). Women typically spend long hours performing this task, often as part of group activities, while engaging in conversations or social bonding (Okeke *et al.,* 2018).Nwosu *et al.*,(2020*)* noted that in some cases, the tools used for sieving, such as woven baskets or sieves, are considered part of women's household tools, further reinforcing their role in this stage.

Table 2. Gender roles in Cassava Processing

cassava production activities	**Male**	**Female**	**Both male and female**
	Mean	**Mean**	**Mean**
Harvesting	2.71*	0.20	1.42
Peeling	0.76	0.86	2.78*
Washing	0,42	2.76*	0.81
Grating	2.57	1.45	0.10
Fermentation	1.32	2.14*	0.07
Pressing	2.24*	1.40	0.82
Sieving	0,99	2.49*	0.31
Transportation	2.18*	0.61	0.04
Frying (*Garri*)	1,28	2.69*	0.00

Note: Any mean ≥ 2 meant high involvement, whereas any weighted mean of < 2 meant low involvement

* = high involvement

2.6 Various Cassava Products Processed by Male and Female in the Study Area

The study revealed that male respondents processed cassava roots into ethnaol ($\bar{x}$ = 2.24) as against ($\bar{x}$= 0.36 for the female) and cassava chips (male $\bar{x}$ = 2.18, female $\bar{x}$ = 0.71) as compared to the female respondents who processed cassava roots into *garri* ($\bar{x}$ = 2.79 and their male counterpart had $\bar{x}$ =0.02, *abacha* (female $\bar{x}$ = 2.69, male $\bar{x}$ =1.28, *fufu* (female $\bar{x}$ = 2.49 while male $\bar{x}$ =0.99, *akpu* (female $\bar{x}$ = 2.20 while male $\bar{x}$ =.62), cassava flour (female $\bar{x}$ = 2.16), male $\bar{x}$ =0.07, cassava pap (female $\bar{x}$ = 2.14, male $\bar{x}$ =0.00) and starch (female$\bar{x}$ = 2.02, $\bar{x}$ =0.22). Both male and female respondents were jointly involved in cassava processing cassava roots into cassava flour ($\bar{x}$ = 2.10).

This shows that male respondents were mostly involved in processing cassava into ethanol and chips. Studies show that men are heavily involved in the industrial production of cassava

ethanol due to the capital-intensive nature of the process. Men typically manage cassava farms, oversee bulk production, and operate ethanol distilleries (Akoroda and Ikpi, 2022).

Cassava ethanol is a high-demand product used in biofuel, cosmetics, pharmaceuticals, and food industries. It is particularly important in countries like Nigeria, where government policies promote biofuel as a renewable energy source (FAO, 2020). Their involvement in ethanol production provides opportunities for large-scale income generation and export earnings. However, the benefits are often limited to those with access to capital and processing infrastructure. This can boost local economies and create job opportunities, products like ethanol are part of broader international markets (biofuels), giving men involved in this industry the opportunity to tap into global supply chains, improving economic returns. Nweke *et al*., (2021) noted that limited access to credit facilities and high operational costs hinder many male processors from scaling up production

On the other hand, women processed cassava roots into *garri, abacha, fufu, akpu,* cassava flour, cassava pap, and cassava starch. Processing cassava into food products like *garri, fufu*, or cassava flour is often an important livelihood activity for women, especially in rural areas. These products are staple foods in many parts of Africa, leading to consistent demand. Women who process cassava for local consumption can grow their businesses through small-scale or medium-scale enterprises. Processing cassava into food products can provide women with financial independence and a source of empowerment within their communities. The findings of the study are in agreement with Adebayo *et al*., (2021) in his findings that reveal that *garri* production is one of the most important income-generating activities for rural women in Africa. It is highly marketable due to its long shelf life, ease of preparation, and wide acceptance across socioeconomic, women often process *garri* in small-scale settings, using traditional roasting pans, which limits their capacity for large-scale production.

FAO, (2020) noted that cassava starch is widely used in food, textile, and pharmaceutical industries, making it a highly valuable product. Women dominate small-scale starch production, supplying both local consumers and industries. However, research highlights that women often lack the necessary infrastructure, such as drying facilities, to produce high-quality starch suitable for industrial use. Nweke *et al., (*2021) also noted that women engaged in *abacha* production and rely on local markets to sell the product, which is popular for its cultural significance during ceremonies and events. However, the short shelf life of *abacha* presents challenges for women who lack access to preservation technologies. Beyond its economic significance, *abacha* serves as a symbol of tradition and identity in some communities, further emphasizing women's contributions to preserving cultural heritage (Eke-Okoro and Njoku, 2022).

The involvement of both male and female respondents in processing cassava into cassava flour might be for family consumption It is also similar to the findings of Mgbakor (2015) in a study conducted on processing technologies available to cassava processors and range of products derivable from cassava processing in Enugu State, Nigeria, who reported that majority (89.1%) of the cassava processors processed cassava into cassava flour and *garri*. Ezeibe *et al.* (2015) in a study in Abia State, Nigeria, revealed that both gender processed

their cassava into the different products however, it was observed that more of females than the males were involved in processing of cassava into various food forms.

Table 3: Various Cassava Products Processed by Male and Female in the Study Area

cassava production activities	Male Mean	Female Mean	Both male and female Mean
Garri	0.02	2.79*	0.31
Fufu	0.99	2.49*	0.04
Starch	0.22	2.02*	0.82
Cassava flour	0.07	2.16*	2.10*
Abacha	1.28	2.69*	0.14
Cassava flakes	0.00	1.60	0.00
Akpu	0.62	2.20*	0.00
Cassava chips	2.18*	0.71	0.30
Cassava ethanol	2.24*	0.36	0.40
Cassava pellets	1.32	0.78	1.17
Cassava pap	0.00	2.14*	0.00

Note: Any mean ≥ 2 meant high involvement, whereas any weighted mean of < 2 meant low involvement
* = high involvement

The null hypothesis stated that there was no significant difference between male and female roles in cassava processing among respondents in the study area. The values of mean roles of cassava processors for male cassava producers were 11.7364and 8.8333 for female cassava processors. The results of the t-test showed that t-calculated value was 6.198and was greater than (> 0.005) indicating that there was significant difference in roles of cassava processing between male and female cassava processors in the study area. Thus, the null hypothesis was rejected in favour of the alternative hypothesis. Consequently, there was significant difference between male and female roles in cassava processing among respondents in the study area.

Table 4: Summary results of t-test of roles of male and female respondents in cassava processing in the study area

Source of variance	N	Mean	SD	DF	T-cal	Decision
Male roles in cassava processing	110	11.7364	7.42260	198	6.198	Reject
Female roles in cassava processing	90	8.8333	6.41321			

2.7 Constraints to Effective Cassava Processing by Male and Female in the Study Area

The results of constraints to effective cassava processing by male and female in the study area are presented in Table 4.10. The results revealed that male respondents had severe constraints in high cost of bulking and transportation ($\bar{x}$ = 2.91 compare to female $\bar{x}$=2.17),

inadequate capital ($\bar{x}$ = 2.76 while female $\bar{x}$ =2.07), poor linkages between markets, producers and processors (male $\bar{x}$ = 2.58 while female $\bar{x}$ = 0.98), lack of support from government and NGOs ($\bar{x}$ = 2.15 while female $\bar{x}$ =0.34), limited access to credit (male $\bar{x}$ = 2.14 female $\bar{x}$=2.07) and inadequate extension services ($\bar{x}$ = 2.13). The female respondents had severe constraints in Inadequate extension services ($\bar{x}$ = 2.39 while male were $\bar{x}$=2.13), Problem of intermediary (female $\bar{x}$ = 2.38 while male $\bar{x}$=1.69), High cost of bulking and transportation ($\bar{x}$ = 2.17), Limited access to modern processing technologies (female $\bar{x}$ = 2.16 while male $\bar{x}$ 1.69), Lack of support from government and NGOs ($\bar{x}$ = 2.10), Limited access to credit and Inadequate capital ($\bar{x}$ = 2.07) respectively. The study revealed that male and female cassava processors in the study area were faced with many challenges that could lead to low income from cassava processing.

2.8 High Cost of Bulking and Transportation

The high cost of bulking and transportation leads to increased processing costs, reducing the profit margins of farmers. It may also limit their ability to sell to distant markets, leading to oversupply in local markets and potentially lower prices for processors. It was found out that Farmers lose a significant portion of their income to transportation, which reduces their profit margins in cassava processing (Ezedinma *et al.,* 2007)

2.9 Inadequate Extension Services

A lack of access to extension services means that processors can miss out on valuable information on best practices, new technologies, and market trends. This limits their ability to improve processing activities. Ogunlela and Mukhtar, (2009) observed that limited access to extension services deprives farmers, particularly women, of critical knowledge about improved processing techniques and value addition. This hinders their ability to maximize profits from cassava processing.

2.10 Limited Access to Modern Processing Techniques

The limited access to modern processing technique increases the manual labour required, making processing less efficient. Traditional processing techniques may not be able to meet the growing demand for processing cassava products. Modern processing techniques would allow processors to increase processing and improve competitiveness. This is in agreement with the findings of Ezeibe *et al*., (2015) who revealed that the lack of access to modern cassava processing equipment, such as mechanized peelers, graters, and dryers, results in high labor costs and inefficiency. Women, who dominate cassava processing, often rely on traditional methods, which are time-consuming and less productive.

2.11 Limited Access to Credit

Limited access to credit prevents processors from investing in necessary equipment and facilities needed for expanding their operations. Without credit, processors may be forced to rely on traditional, low-input methods, further reducing their competitiveness and productivity.

2.12 Inadequate Capital

Inadequate capital limits can limit processing ability of both male and female to make improvements or investments in their processing business. This could result in inability to scale production to meet market demand. Insufficient capital limits the purchase of high-quality raw materials, processing tools, and packaging supplies. This particularly affects small-scale female processors, who face income inequality and higher financial constraints (Adebayo *et al*., 2013)

2.13 Poor Market Linkages

Without effective market linkages, there will be poor linkages between cassava producers and processors who may struggle to sell their processed cassava at competitive prices. Limited access to formal markets and a reliance on local buyers may lead to exploitation by middlemen, implying that processors may fail to secure fair returns on their investments. Ajayi *et al., (*2013) observed that farmers often struggle to find reliable markets for processed cassava products. Women face additional barriers due to limited mobility and weaker market networks, which reduce their bargaining power.

2.14 Problem of intermediaries

Intermediaries often take advantage of processors by offering lower prices than the market rate, leaving processors with minimal profit. This can also reduce the overall income of cassava processors. Middlemen dominate the cassava value chain, often exploiting farmers and processors by offering low prices for raw and processed cassava products. This disproportionately affects women, who typically have less direct access to markets (Barrett, 2008). The results indicated that both male and female cassava farmers experienced similar constraints in cassava production and processing.

Table 5: Constraints to Effective Cassava Processing by Male and Female in the Study Area

Constraint	Male Mean	Female Mean
High cost of bulking and transportation	2.91*	2.17*
Limited access to credit	2.14*	2.07*
Inadequate capital	2.76*	2.07*
Poor market linkages	1.80	1.94
Problem of middlemen	1.69	2.38*
Limited access to modern processing technologies	1.69	2.16*
Poor linkages between markets, producers and processors	2.58*	0.98
Lack of government or institutional support for market development	2.15	0.34
Weak market information	1.08	1.80
Inadequate electricity supply	1.47	1.88
Poor access to water	1.62	1.77
Poor road network	1.66	1.74
Limited technical knowledge and skills	1.22	1.58
Problem of post-harvest loss limiting processing business	1.44	1.94
Inadequate demand for processed cassava products	1.33	1.50
Inadequate extension services	2.13*	2.39*
Lack of support from government and NGOs	2.15*	2.10*

Note: Any mean ≥ 2 meant serious constraint, whereas any weighted mean of < 2 meant serious constraint

* = Serious constraint

3.0 Conclusion

In Benue State, gender roles in cassava processing are distinctly defined, with men primarily handling tasks such as land preparation and harvesting, while women dominate processing activities, including peeling, fermenting, and sieving. This division of labor reflects traditional

societal norms, economic necessity, and access to resources. Despite women's significant contributions, they often face challenges such as limited access to financial support, modern processing equipment, and market opportunities. Addressing these disparities through targeted interventions, including improved technology, credit access, and capacity-building programs, can enhance productivity and promote gender equity in cassava value chains.

4.0 Recommendations

Based on the findings of the study the following recommendations are made:

Cassava value addition should be enhanced by the concerned agencies across gender roles. For the men provide training and resources for improving cassava ethanol and chip production processes, including quality enhancement and meeting industrial standards. They should be encouraged to invest in small-scale ethanol and chip processing technologies to increase efficiency and profitability. For women: offer support for scaling up the production of *garri, abacha, fufu*, *akpu,* cassava flour, pap, and starch. Facilitate training on packaging, branding, and marketing to boost the competitiveness of these products in local and international markets.

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