



Impact of Empowerment on Women's Livelihood in Oyo State, Nigeria

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Received: 01-06-2025

Reviewed: 01-07-2025

Accepted: 15-08-2025

Abstract

Women's empowerment plays a vital role in driving economic and social development, especially in agriculturally driven communities. In Nigeria, despite women's substantial contributions to agriculture and household welfare, gender-based constraints persist—limiting their access to productive resources, credit, and decision-making. This study explores the impact of women's empowerment programs on livelihood outcomes in Oyo State, Nigeria. It specifically examines women's participation in empowerment initiatives, assesses the relationship between empowerment indicators and livelihood improvements, and identifies barriers to effective participation. A cross-sectional design was employed, drawing primary data from 100 respondents—including beneficiaries of the Women Development Fund (WDF) and key informants—through structured questionnaires, interviews, and document reviews. Data were analyzed using IBM SPSS Version 25. Descriptive statistics (frequencies and percentages) and inferential methods such as multiple regression and chi-square tests were applied to assess relationships among variables and test hypotheses. The results showed that participation in empowerment programs significantly improved women's access to credit (95.6%), savings (90.0%), and income-generating opportunities (97.8%). Positive livelihood outcomes included increased income (98.9%), business expansion (97.8%), property ownership (74.7%), better healthcare access (96.7%), and improved food security (95.6%). Regression results revealed that increased income, property ownership, business growth, and decision-making autonomy significantly influenced women's empowerment at the 1% significance level ($p < 0.01$). Empowerment programs substantially enhance women's economic independence and household welfare. Nonetheless, barriers such as limited education, financial exclusion, and cultural norms hinder full participation. Addressing these through improved financial inclusion, supportive policies, and capacity-building initiatives is essential to unlocking the full potential of women in rural development and ensuring sustainable livelihood outcomes.

Keywords: Women Development Fund, Gender roles, Empowerment, financial inclusion, food security

Introduction

Women are disproportionately affected by gender incongruence in society (Adeosun & Owolabi, 2021). According to the World Bank (2011a), women are more likely to experience poverty than men, primarily because they are denied equal rights and opportunities across various spheres of life. Osunmuyiwa & Ahlborg (2022) further emphasized that women often face the negative effects of gender disparities when attempting to access or control essential means of production, such as land, capital, and infrastructure. Additionally, they are frequently excluded from key decision-making processes in development initiatives (Mwaipopo & Dauda, 2020). Munoz Boudet *et al.*, (2018) assert that gender inequality remains a significant factor in the persistence of global poverty. Women constitute the invisible and often unrecognized backbone of agriculture in Nigeria, their contributions extend beyond their high levels of participation in rural and agricultural development to their deep connection with rural customs, traditions, and values (Ayoade *et al.*, 2015). Women perform diverse roles, ranging from agricultural laborers to managers of their homesteads (Mwaipopo & Dauda, 2020). However, women have historically been overlooked in the planning, design, and implementation of development programs and policies that directly impact them (Malamsha, 2023). According to the National Population Commission (NPC) and the World Bank, Nigeria's total population was estimated at approximately 223 million people in 2023. Of this number, females accounted for about 49.3%, which translates to over 110 million women (World Bank, 2023; NPC, 2023). A significant proportion of these women reside in rural areas and are actively engaged in agricultural activities. Indeed, women in Nigeria contribute up to 70% of the agricultural labor force and are responsible for about 60–80% of food production, especially in smallholder farming systems (FAO, 2022; NBS, 2021). This highlights their critical role in national food security and rural household economies. They are responsible for approximately 60% of food crop production and 90% of food processing activities. In addition to these economic contributions, they also raise children, manage households, fetch water and fuel, tend livestock, and engage actively in commodity trading (Egwurube, 2022). Despite these extensive contributions, their work is often unrecognized and unrecorded. The role of women in agriculture and agro-related activities continues to expand. One of the primary reasons for this increase is the rising trend of male-selective migration from rural areas to towns and cities in search of better opportunities. As a result, women are stepping in to fill labor shortages in agricultural fields, taking on roles as cultivators and agricultural laborers.

Women's empowerment has become a focal point in local and international discussions over the past two decades (British Council, 2022). Their participation in empowerment processes is largely influenced by social, cultural, political, and economic factors, which have historically hindered their active involvement in development initiatives, thereby increasing their vulnerability (Cullen *et al.*, 2020). Women are central to household well-being in rural areas of developing countries, including Nigeria, where they play a crucial role in ensuring household livelihood outcomes (Bain *et al.*, 2018). They manage households while pursuing

multiple livelihood strategies. Okpoko (2010) asserts that when women are empowered, they transit from being merely visible to having their voices heard. However, as Okoi et al. (2021) observed, women's empowerment in Nigeria is often narrowly interpreted by politicians as merely a poverty alleviation initiative, rather than as a multi-dimensional concept that encompasses both social and economic independence. According to United Nations Economic Commission for Europe UNECE (2012), empowerment is a broader process that enables individuals to gain control over their lives in multiple contexts. Gender disparities also extend to food security (Ovute *et al.*, 2015). Food security is gender-biased, because women experience higher levels of food insecurity than men (Sundar, 2017). Food insecurity refers to the lack of adequate and appropriate nutrition, including energy and micronutrients necessary for survival (Akter *et al.*, 2017). In developing countries, women bear the brunt of food insecurity due to limited engagement in sustainable livelihood initiatives (Spielfoch, 2011). Their continued marginalization perpetuates a vicious cycle in which they remain in low-paying, menial jobs, ultimately undermining their self-sufficiency and economic independence (Fukuda-Parr, 2016). Women's participation in rural livelihood activities has significantly contributed to sustainable development by fostering progress and reducing poverty. However, agricultural research and technology development are often regarded as gender-neutral, despite gender playing a crucial role in determining access to and control over technological advancements. The increasing neglect of farming activities by rural men due to migration to urban centers in search of alternative employment has further burdened women with additional responsibilities. In many cases, they are left to manage households single-handedly, ensure proper nutrition for their children, and cover educational expenses to secure their children's future. Beyond household responsibilities, women also engage in socio-cultural activities, which their limited income often cannot support (Ayoade & Adeola, 2011). In Nigeria, women encounter significant socio-economic and cultural barriers that hinder their active engagement in economic activities. Despite their essential contributions to household welfare and national development, they remain largely marginalized due to deep-rooted gender inequalities and structural limitations. Women's empowerment programs aim to address these challenges by improving women's access to resources, enhancing their decision-making autonomy, and creating expanded economic opportunities. Although women's empowerment has gained attention globally, significant research gaps remain at the sub-national level, particularly in regions like Oyo State, Nigeria. Most existing studies overlook the diverse local realities affecting women's participation and the actual impact of empowerment programs on their livelihoods. Empowerment is often narrowly framed as poverty alleviation, ignoring broader aspects such as autonomy, decision-making, and access to resources. Despite women's increasing role in agriculture due to male migration, their contributions remain undervalued and underreported. Additionally, agricultural policies often ignore gender-specific barriers to technology access. The link between empowerment and food security, as well as the influence of socio-cultural barriers, remains underexplored. This study seeks to address these gaps by assessing the effectiveness of women's empowerment programs on livelihood outcomes in Oyo State, Nigeria. Specifically, the study investigates the extent of women's participation in empowerment initiatives and examines the relationship between key empowerment indicators and their livelihood outcomes. The results generated evidence-based insights to support

policymakers and development practitioners in designing more effective and locally relevant empowerment interventions.

According to Sen (1999) in *Development as Freedom*, empowerment is about giving people greater options within society and goes beyond only advancing economically. The study presents the idea of 'human freedom' in five important dimensions: social opportunity, political freedom, economic empowerment, security, and transparency. Economic expansion acts as a tool to accomplish these goals, which are the cornerstone and ultimate objective of development. In a similar vein, Suharto (2010) stated that empowerment entails creating robust institutions in addition to enhancing individuals. Fostering contemporary cultural values like diligence, independence, effectiveness, transparency, and accountability is part of this process. Furthermore, empowerment aims to uplift marginalized groups who experience powerlessness, whether due to internal factors, such as self-perception, or external factors, such as oppression within unjust social structures. Women's empowerment is an effort to strengthen their ability to overcome challenges, achieve independence, and develop self-reliance (Elizabeth, 2007). It is a transformative process that drives changes in the allocation of economic resources, distribution of benefits, and accumulation of wealth to enhance production and household income. A key factor in successful empowerment programs is women's active participation. This involves engaging in the formulation of their initiatives, determining implementation strategies, managing activities according to self-established regulations, and evaluating outcomes. Women's empowerment is integral to participatory development, ensuring that women have agency in shaping their economic and social progress (Diirro *et al.*, 2018).

Women's empowerment is widely recognized as a key driver of positive livelihood outcomes, including increased income, enhanced well-being (such as self-esteem, improved health status, access to services, and a sense of social inclusion), reduced vulnerability, improved food security, and more sustainable use of natural resources through secured property rights (Welwel, 2022). It also contributes to better child nutrition and greater self-reliance. Governments at various levels have adopted empowerment as a strategic tool to harness women's potential as active contributors to national development (Ayodeji *et al.*, 2021). Women's empowerment encompasses the expansion of women's social, economic, political, environmental, and legal capacities, with the ultimate goals of achieving gender equality, strengthening their confidence in asserting their rights, and enabling their effective participation in decision-making processes (Adeosun & Owolabi, 2021). When women have access to decision-making roles, they can leverage legal, economic, social, and political capital to shape their lives and influence those around them (Welwel, 2022). Encouraging women's participation in economic activities is akin to unlocking a vast reserve of untapped human potential. This dual advantage not only lifts a significant number of women out of poverty but also strengthens the labor force, driving economic growth and national development (Adeosun & Owolabi, 2021).

Previous studies by Hubeis (2010), stated that women's empowerment is influenced by both internal factors and external factors. Meanwhile, Chen & Mahmud (1995) arguing that empowerment is a structural transformation, while Kabeer (2005) said women empowerment is offering institutional transformation, namely a transformation process that requires

movement or struggle in various arenas of 'power', such as from individuals to collectives, private negotiations to public action, informal to formal domain. Kabeer's ideas for some people are considered alternative answers, taking into account three interrelated aspects/dimensions, namely: agency, resources, and achievement. Gender inequality remains one of the biggest threats to women's health and happiness throughout the world.

Mosedale (2014) defined livelihoods as a way of making or securing a living or necessities of life such as farming, fishing, and hunting. It can be viewed as acquiring assets and capabilities as well as activities needed to ensure worthwhile living.

Women play a pivotal role in ensuring household well-being in rural areas across many developing countries in Sub-Saharan Africa, including Nigeria. They are central to household livelihood strategies, often managing domestic responsibilities while engaging in multiple economic activities (Das & Singh, 2020). As food producers and agricultural entrepreneurs, rural women invest their time, income, and decision-making power to enhance food and nutritional security within their households and communities. Their contributions are particularly vital during economic hardships, as they help maintain stable food supplies (Diouf, 2012). Beyond agriculture, rural women engage in diverse non-farm income-generating activities, including fetching water, and firewood, overseeing basic education, and healthcare for their families (Oxfam, 2022). Given their multifaceted roles, they are crucial agents of transformational economic, environmental, and social change necessary for sustainable development (Ogunlela & Aisha, 2009). However, to fully realize their potential, they require greater access to and control over resources—key elements of empowerment that can significantly improve their livelihoods. Women's empowerment is thus essential, as it provides them with the means to meet their needs and achieve sustainable livelihood outcomes. The status and development of women are fundamental to national growth. "Women should be uplifted for the betterment of the nation; if a woman is uplifted, society and the nation are uplifted." Since the mid-1980s, women's empowerment has gained prominence, leading to policy shifts from welfare-based approaches to development-focused strategies. In recent years, it has been recognized as a central factor in determining the status of women in society. Literature on women's empowerment reflects a wide range of perspectives, terminologies, and conceptual frameworks. Common themes include choice, power, options, control, and agency (Adeosun & Owolabi, 2021). Kabeer (1999) describes empowerment as both a process and an outcome enabling women to gain power and resources to achieve self-reliance. Many scholars define empowerment as overcoming barriers that hinder self-confidence (Adeosun & Owolabi, 2021; Ovute, 2015). Keller and Mbwewe (1991) and Rowland (1997) further conceptualized it as a process through which women enhance self-reliance and expand their control at both personal and collective levels. A widely accepted perspective on empowerment is that it follows a bottom-up rather than a top-down approach (Das & Singh, 2020). United Nations Development Programme (UNDP) (1995) stated that empowerment is both a process and an outcome and emphasized that participation is a means to empowerment (Scrutton & Luttrell, 2007).

According to Oxfam (2013), key indicators of improved livelihoods include the adoption of enhanced agricultural practices, increased income from product sales, improved

household income and nutrition, greater asset ownership, and heightened self-confidence and participation in community activities. Notably, there is a symbiotic relationship between economic empowerment and improved livelihoods, particularly through access to and ownership of land. However, despite these potential benefits, the persistent marginalization of women remains a significant barrier that continues to hinder their full economic participation and access to livelihood resources. Singh *et al.*, (2015) and IFAD (2016), empowering people involves increasing as well as diversifying people's means of survival, which is their livelihood. As it stands, there is a proportional relationship between people's livelihoods and their empowerment such that they either affect each other negatively or positively. Mosedale (2014) pointed out that livelihood is a means of making a living. It encompasses people's competencies, assets, income, and undertakings required to obtain the provisions of life. A livelihood is sustainable when it empowers individuals to manage and recuperate from shocks and stresses. McBride (2014) noted that key elements of sustainable livelihoods include five important types of capital assets, which are human, natural, financial, social, and physical assets. From these elements, it is clear that only effective economic empowerment can bring about sustainable livelihoods. However, before reaching sustainable livelihoods, the poor or marginalized live a life of poverty with limited capital assets.

Literature Review

Genda (2024) examined the impact of the Women Development Fund (WDF) scheme on women's livelihoods in Tanzania using a cross-sectional research design. Data were collected from 85 respondents, including loan beneficiaries and key informants, through questionnaires, interviews, and documentary reviews. Analysis using SPSS revealed that WDF loans significantly improved beneficiaries' livelihoods by enabling them to engage in small businesses such as tailoring, livestock keeping, and horticulture, leading to increased income. The study also highlighted a shift in gender perceptions, as men increasingly acknowledged women's economic contributions alongside household responsibilities. However, challenges such as delayed loan access, insufficient funds, limited entrepreneurship skills, and difficulties balancing business and family duties were identified. To enhance the scheme's effectiveness, the study recommended increasing loan amounts and grace periods, providing entrepreneurship training, and improving the business environment.

In the study by Kappelman (2016), a nationally representative sample of women in South Africa, estimated to include approximately 3,000 to 4,000 respondents, was used to examine the influence of gender inequality on women's subjective and emotional well-being. The analysis drew on data sourced from large-scale national surveys such as the South African General Household Survey (GHS), which include information on empowerment, household decision-making, and well-being. Key metrics employed in the study included indicators of pure empowerment, defined as women's autonomy and decision-making power while holding consumption constant. Subjective well-being was measured using self-reported levels of happiness and life satisfaction, often rated on a Likert scale, while emotional well-being indicators captured the respondents' psychological and emotional states. In addition, the study considered variables related to social support and community integration, which encompassed

aspects such as trust in others, community participation, and the presence of social networks. The results, derived from regression model Ordinary Least Square (OLS) indicated that higher levels of empowerment were associated with a slight, though statistically insignificant, reduction in women's welfare ($\beta = -0.13$, $p > 0.10$). However, when variables capturing social support and community integration were included in the models, the negative effect of empowerment on well-being disappeared, suggesting that the outcomes of empowerment may be context-dependent and influenced by the surrounding social environment.

Ayoade *et al.* (2015) examined women's participation in rural livelihood activities in Ibarapa East, Ibarapa North, and Ibarapa Central within the Ibadan Ibarapa Agricultural Zone of Oyo State. The study aimed to identify the socio-economic characteristics of women, the specific livelihood activities they engage in, the factors influencing their participation, and the constraints they face. A simple random sampling technique was used to select 120 respondents across the three local government areas. The findings revealed that 55.5% of the respondents were between the ages of 21 and 40, with a mean age of 36.21 years. The majority (79.2%) were married, while 20.8% were single. Additionally, 47.5% had a household size ranging between 6 and 11 members, and 32.5% had attained tertiary education. Petty trading emerged as the most common livelihood activity among the respondents. The study also found that inadequate income (mean score: 1.78) was a major factor driving participation in livelihood activities. Moreover, 60.8% of respondents identified competition within specific trades as a significant constraint. A significant relationship was established between women's participation in livelihood activities and their marital status, household size, education level, primary occupation, and income level. Based on these findings, the study recommends organizing and strengthening existing women's groups to enhance access to credit. Additionally, women should be educated on alternative trade opportunities to reduce competition in specific sectors, thereby increasing income levels and fostering rural economic growth for improved women's empowerment.

Adeyeye *et al.* (2019) investigated the impact of women's empowerment on agricultural productivity in Northern Nigeria, using data from the 2018 Nigeria Country Baseline and Varietal Monitoring Survey (NIBAS) funded by the Bill & Melinda Gates Foundation. The study analyzed responses from 3,600 rural households across six northern states spanning three agro-ecological zones. Employing a cross-sectional instrumental variable regression model, the study found that overall women's empowerment had a statistically significant positive effect on maize yield ($\beta = 0.37$, $p < 0.01$). Among the empowerment dimensions examined, participation in production decisions showed a strong positive association with productivity ($\beta = 0.29$, $p < 0.01$), as did access to and ownership of assets ($\beta = 0.25$, $p < 0.05$), group membership ($\beta = 0.22$, $p < 0.05$), and reduced workload, measured through a time burden index ($\beta = 0.31$, $p < 0.01$). In contrast, access to and decision-making power over credit was negatively correlated with maize yield ($\beta = -0.18$, $p < 0.05$), potentially due to challenges such as loan mismanagement or insufficient financial literacy among women. Additionally, the dimension related to control over income use showed no statistically significant effect on productivity ($\beta = 0.04$, $p > 0.10$). These findings emphasize the importance of adopting a multidimensional approach to measuring women's empowerment in agriculture, as not all empowerment domains contribute equally to agricultural outcomes. The study concludes that

empowerment components linked to production control, asset access, and cooperative engagement are particularly critical for enhancing agricultural productivity among rural women.

Stanley (2019), conducted a study on the significance of women empowerment on rural livelihood outcomes among irrigation and dry-land farming households in Msinga, South Africa. This study investigated the multidimensional nature of women's empowerment and its impact on livelihood outcomes, specifically self-reliance, food security, and vulnerability to food insecurity among 300 rural women farmers in Msinga, KwaZulu-Natal. A capabilities-based framework was employed, with empowerment measured using Principal Component Analysis (PCA), while livelihood outcomes were analyzed through k-means clustering, multinomial logit, ordered logit, and binomial logit models. The findings revealed that dimensions such as economic agency, human and physical capital, vocational skills, and water-use security significantly influence women's self-reliance. However, due to socio-cultural perceptions, young, educated women with vocational and psychological empowerment were less inclined toward self-driven agricultural livelihoods. Household food security was most strongly associated with husband's income, economic agency, physical capital, and farm financial management skills, while high social capital and socio-cultural hindrances reduced food security. Similarly, vulnerability to food insecurity decreased with higher economic agency and physical capital, but increased among women dependent on social grants and those facing cultural barriers to agriculture. The study concluded that a holistic, multidimensional approach to measuring and enhancing women's empowerment focusing on capabilities is essential for achieving distinct livelihood outcomes. Specific empowerment interventions tailored to targeted outcomes are necessary, and socio-economic factors such as income levels and cultural norms must also be addressed to ensure sustainable rural development and food security.

Empirical research has consistently shown that women's empowerment significantly contributes to poverty reduction and household food security. For instance, Akter *et al.* (2021), sampled 1,200 rural households in Bangladesh, and found that women's increased control over income and assets was significantly associated with reduced multidimensional poverty levels ($\beta = -0.68$, $p < 0.01$). Similarly, in a cross-sectional study of 850 households across three Nigerian states, Adeyanju *et al.* (2021) reported that empowered women were 34% less likely to report severe household food insecurity (Odds Ratio = 0.66, $p < 0.05$). However, the study cautioned that excessive borrowing through microcredit could lead to negative welfare outcomes without accompanying financial literacy. These findings align with Kabeer's (1999) conceptual model of empowerment, which highlights access to resources, agency in decision-making, and achievement of well-being outcomes as central elements of empowerment.

Access to productive resources has also been positively linked with women's empowerment and food security. Islam *et al.* (2024) employed structural equation modeling on data from 1,500 women in rural Bangladesh. The study found that access to financial and informational resources had a significant positive effect on women's empowerment ($\beta = 0.557$, $p = 0.001$), and that empowered women were more likely to ensure household food security ($\beta = 0.836$, $p < 0.001$). Similarly, Bekele *et al.* (2023) conducted a study involving 960 women in

Ethiopia's Gamo Zone, where the Abbreviated Women's Empowerment in Agriculture Index (A-WEAI) was applied. The analysis revealed that empowerment, especially in terms of control over production decisions and income use, was significantly associated with improved food security ($\beta = 0.49$, $p < 0.01$).

Digital tools are increasingly being leveraged to promote women's empowerment, particularly in entrepreneurship and agricultural livelihoods. Chisala and Baada (2021), in a study involving 400 female micro-entrepreneurs in Malawi, observed that women who utilized information and communication technologies (ICTs) reported a 23% increase in business income and enhanced access to market information ($p < 0.05$). Despite these benefits, the broader impact was limited by challenges such as low ICT literacy and unreliable electricity access. In Nepal, Paudel *et al.* (2022) evaluated a mobile-based training program for 350 rural women trained as community animal health workers, finding that participants experienced a 32% average increase in household income ($t = 2.84$, $p < 0.01$) and reported greater autonomy in household resource allocation decisions.

Participation in livelihood support programs has also produced mixed outcomes for women's well-being. Mudombi *et al.* (2017), analyzing data from 620 women in rural Zimbabwe, found that those engaged in multiple livelihood strategies were significantly more likely to report increased household income ($\chi^2 = 18.42$, $p < 0.01$). However, structural barriers—including limited access to training, credit, and output markets undermined the full realization of benefits. In South Africa, Dube and Moyo (2023) examined women's roles in irrigation schemes across five provinces, noting that although 67% of women held leadership positions, only 41% had access to income generated from scheme activities, indicating a persistent disconnect between nominal participation and actual empowerment.

While previous studies have established the importance of women's empowerment in enhancing agricultural productivity, poverty reduction, and household food security across various African contexts including Bangladesh, Nigeria, Ethiopia, Malawi, Zimbabwe, and South Africa, few have empirically explored the direct link between structured women's empowerment programs and livelihood outcomes in Southwestern Nigeria, particularly in Oyo State. Most existing research focused on singular empowerment indicators (e.g., access to assets or decision-making autonomy) or broad national-level datasets, often neglecting localized program-specific analyses that incorporate both quantitative metrics and lived experiences of beneficiaries.

The current study contributes a novel subnational perspective by assessing the impact of women's empowerment programs, such as development fund loans, on multiple dimensions of livelihood outcomes (income, decision-making autonomy, asset accumulation, and food security) using primary data from 100 women in Oyo State. Unlike broader studies, it also investigates the barriers to effective participation in empowerment initiatives, integrating statistical and qualitative insights to provide a holistic understanding of what facilitates or hinders program success at the community level. The application of both multiple regression and chi-square tests adds methodological rigor, enabling the study to quantify relationships between empowerment indicators and livelihood improvements in a way that informs context-specific policy and intervention design. Therefore, the study investigated the impact of

women's empowerment on the improvement of women's livelihood in Nigeria with special focus on Oyo state.

Research Method

Study Area

The research was conducted in Oyo State, located in the South-West geopolitical zone of Nigeria. Geographically, Oyo State lies between latitudes 7°00'N and 9°12'N and longitudes 2°30'E and 4°30'E, with a total land area of approximately 28,454 square kilometers. As of 2023, the state had a projected population of about 8.4 million people (World Population Review, 2023). Predominantly occupied by the Yoruba ethnic group, the state comprises 33 Local Government Areas (LGAs) and four agricultural development zones. Farming is the major occupation in the area, involving the cultivation of food crops such as maize, cassava, yam, and okra, and cash crops like cocoa, mango, cashew, and orange (Daud *et al.*, 2018). . Livestock rearing is also practiced at a subsistence level.

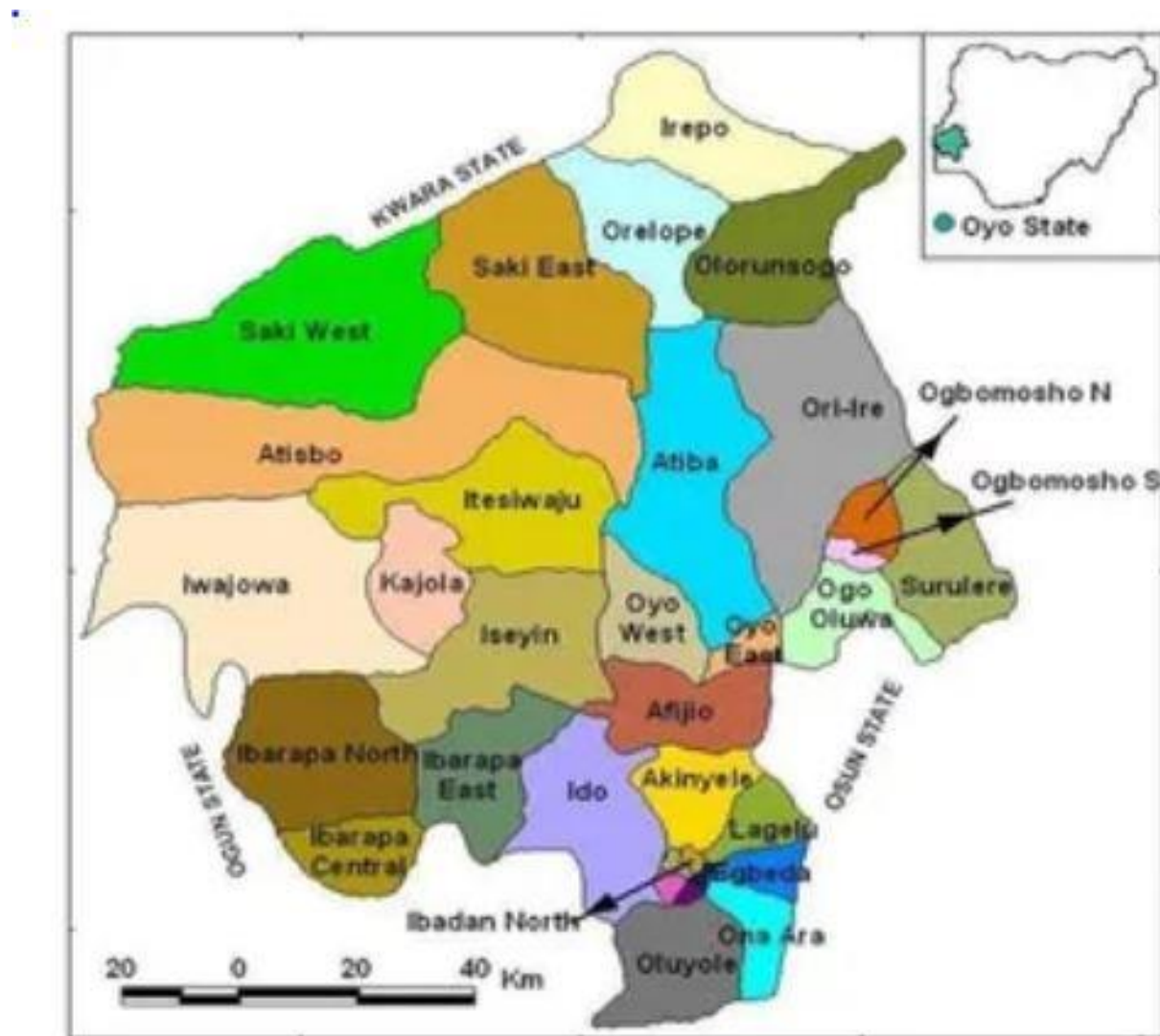


Figure 1: Map of Nigeria showing the study area, Oyo State

Impact of Empowerment on Women's Livelihood in Oyo State, Nigeria

Research Design

This study employed a quantitative cross-sectional survey design. The approach allowed for the collection of standardized data from a representative sample, enabling statistical analysis of the relationship between socio-economic variables and livelihood outcomes among rural farming households. The choice of a quantitative design was informed by the objective to generalize findings and test hypotheses through inferential statistical procedures.

Sampling Procedure and Sample Size

A multi-stage sampling technique was adopted to select respondents. In the first stage, two LGAs, **Ibarapa Central** and **Surulere** were purposively selected due to their predominantly rural settings and significant concentration of female farming households. In the second stage, communities within the selected LGAs were stratified into urban and rural categories, and only rural communities were retained for the study. The third stage involved the random selection of five villages from each LGA, resulting in ten villages: Oke-Ado, Isale-Oba, Idofin, Oke-Oba, Iberekodo, Aiyetoro, Iresaadu, Arolu, Gbede, and Egbeda. In the final stage, ten households were randomly selected from each village, yielding an intended sample size of 100 households. However, only 91 completed responses were used for analysis.

The sample size was calculated using Cochran's formula for finite populations at a 95% confidence level and a 10% margin of error. This ensured adequate statistical power and aligns with methodological standards in related rural livelihood studies.

Data Collection Techniques

Primary data were collected using a semi-structured questionnaire administered through face-to-face interviews, ensuring the inclusion of participants with varying literacy levels. The instrument was developed based on a thorough review of the literature and was validated by subject matter experts in agricultural economics and rural development to ensure face and content validity. A pilot test was conducted on 10 rural women farmers in a non-sampled community to assess the clarity and relevance of the questions. The instrument's internal consistency was tested using Cronbach's alpha, resulting in a coefficient of 0.82, indicating a high level of reliability.

Measurement of Variables

The dependent variable, livelihood outcomes, was measured through indicators such as increased income, improved food consumption, enhanced decision-making ability, and access to healthcare. Each outcome was rated on a two-point Likert scale (Yes = 2; No = 0), simplifying responses for participants with limited education. Independent variables included key socio-economic characteristics such as age, educational attainment, household size, marital status, and farming experience.

Data Analysis Techniques

Data were analyzed using descriptive and inferential statistical techniques via SPSS (Version 25). Descriptive statistics included frequency counts, means, and percentages. Inferential statistics involved the use of multiple regression analysis to examine relationships

between the dependent and independent variables, and chi-square tests were used for categorical data associations. Statistical significance was set at $p < 0.05$. The coefficient of determination (R^2) was used to assess model strength in regression analyses.

Assumption Testing

Before conducting inferential analyses, necessary statistical assumptions were tested to ensure the validity of the results:

- a. Normality of residuals was confirmed using histograms, P-P plots, and the Shapiro-Wilk test ($p > 0.05$).
- b. Linearity and homoscedasticity were assessed through scatterplots and residual plots, respectively.
- c. Multicollinearity was evaluated using the Variance Inflation Factor (VIF), with all values below the threshold of 5.
- d. Chi-square assumptions were met, as all expected cell frequencies were ≥ 5 .

Ethical Considerations

Ethical approval for the study was granted, and informed consent was obtained from all participants. Respondents were clearly briefed on the study's objectives, benefits, and their right to voluntary participation, including the option to withdraw at any point. Anonymity and confidentiality of data were strictly maintained. All data collected was securely stored and used solely for academic purposes.

Result and Discussion

Socio-economic Characteristics

According to Collins (2016), age and sex are fundamental characteristics that influence individual's decision-making abilities and their capacity for independent action, making them crucial in understanding a population. Table 1 reveals that approximately 88.0% of the respondents fell within the age a group of 26- 45 years, while those aged 46 and above accounted for 12.1%. This suggests that women at their old ages are less likely to participate fully in livelihood activities compared to those in their middle ages; it might due to declining in their physical strength, stamina, or health-related issues, making it more difficult to engage in physically demanding livelihood activities such as farming, trading, or manual labor. The findings highlight the importance of fostering empowerment among young and productive individuals as it can improve their living standards and benefit their communities. This aligns with a study by Munoz Boudet *et al.*, (2018) which found that poverty rates for women surpass those of men by 69% during their prime childbearing years and again for women aged 75 and above. The response of sampled women on their marital status and is shown in Table 1. The finding reveals that 85.7% of sampled women were married while the remaining 7.7% and 6.6% were single and widowed respectively. In an in-depth interview, it was revealed that married women were more confident, happy, and doing better in terms of businesses and participating in the empowerment programs compared to other categories. The higher percentage recorded for the married women is an indication that empowerment programme is

one that is welcomed by responsible individuals and it has gained popularity in the study area. This implies that the married were saddled with more household responsibilities, which might warrant their involvement in their livelihood activities apart from their primary occupation. This concurs with the study by Ravina-Ripoll *et al.*, (2022), which indicated that married people have a higher perception of contentment in conducting business compared to other categories. The level of education of the respondents was investigated, and found that the beneficiaries' experiences and education level have an imperative impact to their business. When the respondent's level of education was examined, the findings as shown in Table 1, slightly lower than half 40% and 33% have primary and secondary education. In contrast, the remaining 27.5% of respondents have no formal education. This means that the majority of them have enough skills and could understand how to utilize the economic importance of empowerment and livelihood. These findings are consistent with studies that concluded an entrepreneur's level of education is positively associated with business success (Mahmood *et al.*, 2021; Boldureanu *et al.*, 2020).

Regarding membership size, the highest proportion of respondents (40.1%) belonged to groups with 20 members, while 23.1%, each reported membership sizes of 21 and 22. A smaller percentage belonged to groups with 23 (7.8%) and 25 (5.5%) members. The mean group size was 20 members, indicating a preference for relatively small, manageable group structures, which may enhance cohesion and ease of coordination in collective agricultural or empowerment efforts.

Table 1: Distribution of Respondents based on Socio-Economic Characteristics

Selected variables	Frequency(n=91)	Percentages (%)	Mean
Age			
26-35	39	42.9	43
36-45	41	45.1	
46-55	11	12.1	
Marital status			
Single	7	7.7	6.6
Married	78	85.7	
Widowed	6	6.6	
Educational Level			
No formal education	25	27.5	32.9
Primary	36	39.6	
Secondary	30	32.9	
Membership size			
20	37	40.1	20
21	21	23.1	
22	21	23.1	
23	7	7.8	
25	5	5.5	

Source: Authors' Compilation, 2025

Level of Women's Participation in the Empowerment Programme

Figures 2a and 2b illustrate the level of women's participation in the program. A significant majority (78%) of respondents reported that all group members often attended meetings, although there was never a time when every member was present at once. Furthermore, 79% of participants indicated full attendance during training sessions, which covered topics such as savings and credits, gender and life skills, loan procurement, financial education, and gender-based violence, among others. This high level of training participation aligns with findings by Buvinic and Donnell (2016), who observed that women's active involvement in rotating credit and savings associations is often driven by their need for a socially accepted savings mechanism. Such groups allow women to safeguard their earnings from family members, particularly in cultural contexts where their financial independence is constrained by societal norms. The analysis also reveals that beneficiaries showed greater enthusiasm for training sessions compared to general group activities. Overall, 98% of respondents expressed satisfaction with the program, citing its relevance and benefit to their lives. Only 2% reported dissatisfaction, primarily due to their recent inclusion in the group, which limited their access to the full range of program benefits at the time of the study. Moreover, the results show that a substantial proportion of the participants (93.3%) had already benefited from the program, while only 6.7% had yet to experience any tangible gains (see Figure 2b). These findings underscore the positive reception and perceived impact of the program on women's socio-economic empowerment.

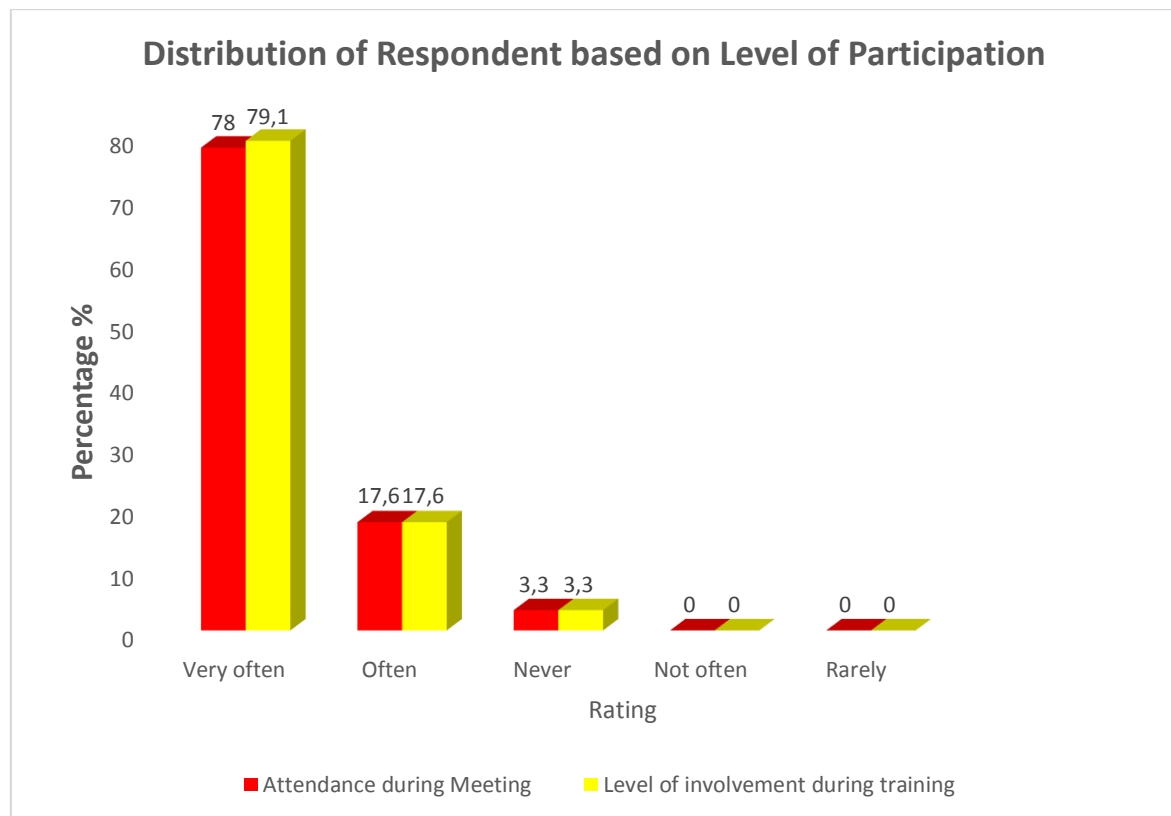


Figure 2a: Distribution of Respondents based on Level of Participation

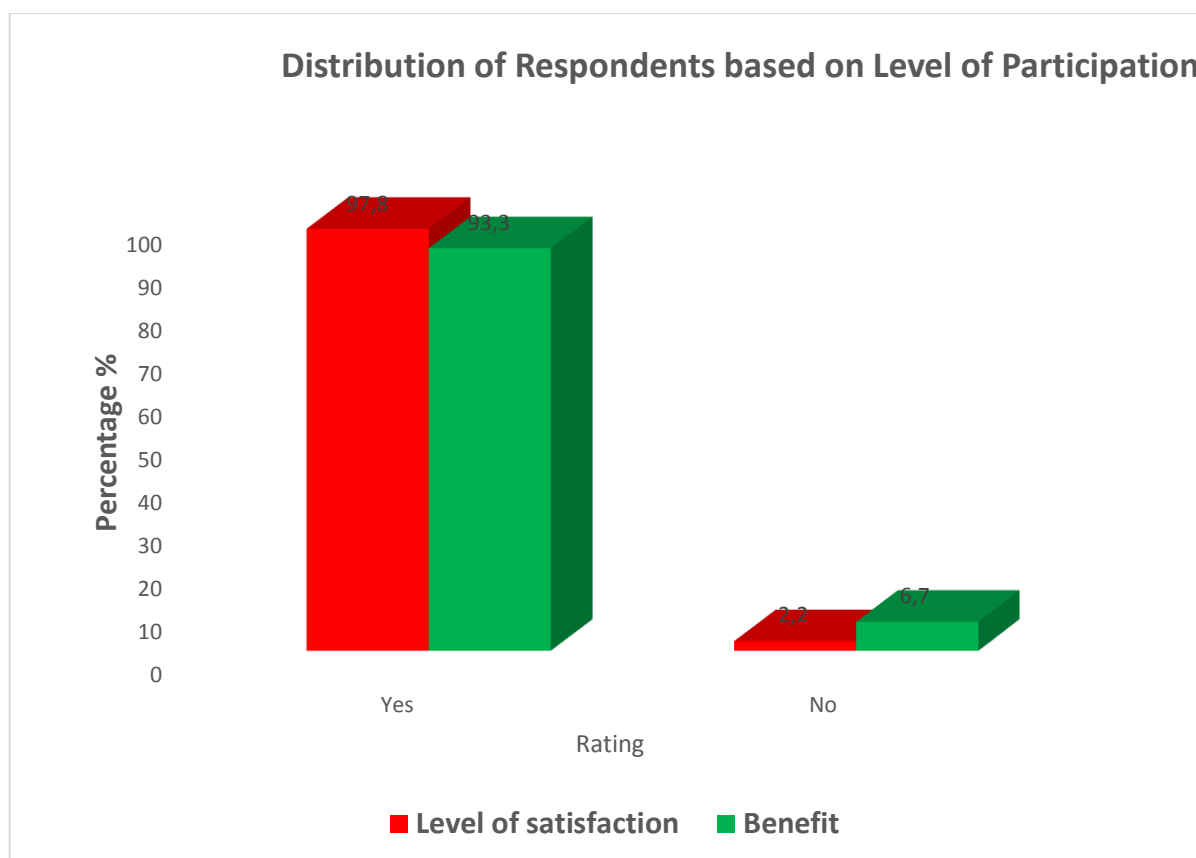


Figure 2b: Distribution of Respondents based on Level of Participation

Women's Empowerment Indicators and Their Livelihood

Figure 3 presents the findings on the impact of Women's Agricultural Groups (WAG) on women's empowerment across four key indicators: access to credit, savings, social interactions, and income-generating activities. The findings suggest a positive influence of WAG participation on economic and social empowerment. Most respondents (95.6%) reported increased access to credit after joining WAG, while only 4.4% indicated no improvement. This suggests that WAGs play a crucial role in facilitating financial access, possibly through microfinance initiatives, group lending schemes, or partnerships with financial institutions. Increased access to credit can enable women to invest in agricultural inputs, expand their businesses, and improve household welfare. Beneficiaries reported that the support from the program enabled them to meet some basic family needs, including food, school fees, clothing, and healthcare expenses, with the extent of support varying based on the type of business undertaken. The key to all these success stories, as mentioned by the key informant is the trust established among group members and between the groups, which is the constituent part of social capital. Thus, the findings corroborated that of Kirori (2015), who asserted that social capital contributes to wellbeing or livelihood improvement. Social capital is about community networks, norms, and trust among the people.

About 90.0% of the respondents acknowledged that their savings improved after joining WAG, compared to 9.9% who did not experience any change. This implies that WAG participation encourages financial discipline, savings culture, and possibly access to structured

savings mechanisms such as cooperative savings schemes or rotating credit associations. Improved savings enhance financial security, reduce vulnerability to economic shocks, and support long-term investments. A significant proportion (86.8%) of the respondents stated that they know and interact with more people since joining WAG, while 13.2% reported no change. This indicates that WAG membership fosters social capital by expanding women's networks, enhancing knowledge-sharing, and creating opportunities for collaboration. Increased social interaction can also contribute to personal development, access to market information, and collective bargaining power. The highest percentage of respondents (97.8%) reported engaging in more income-generating activities after joining WAG, while only 2.2% did not. This highlights the economic empowerment potential of WAGs, as they may provide training, financial resources, and business opportunities that enable women to diversify their income streams. Increased engagement in income-generating activities can improve women's livelihoods, household food security, and financial independence.

These results concur with the studies (Welwel, 2022; Malamsha, 2023) that loans given to women's groups have improved household welfare by increasing the number of meals in families with some additional vegetables and fruits, WDF microcredits have a significant positive impact on household well-being, particularly concerning settlement and children's education.

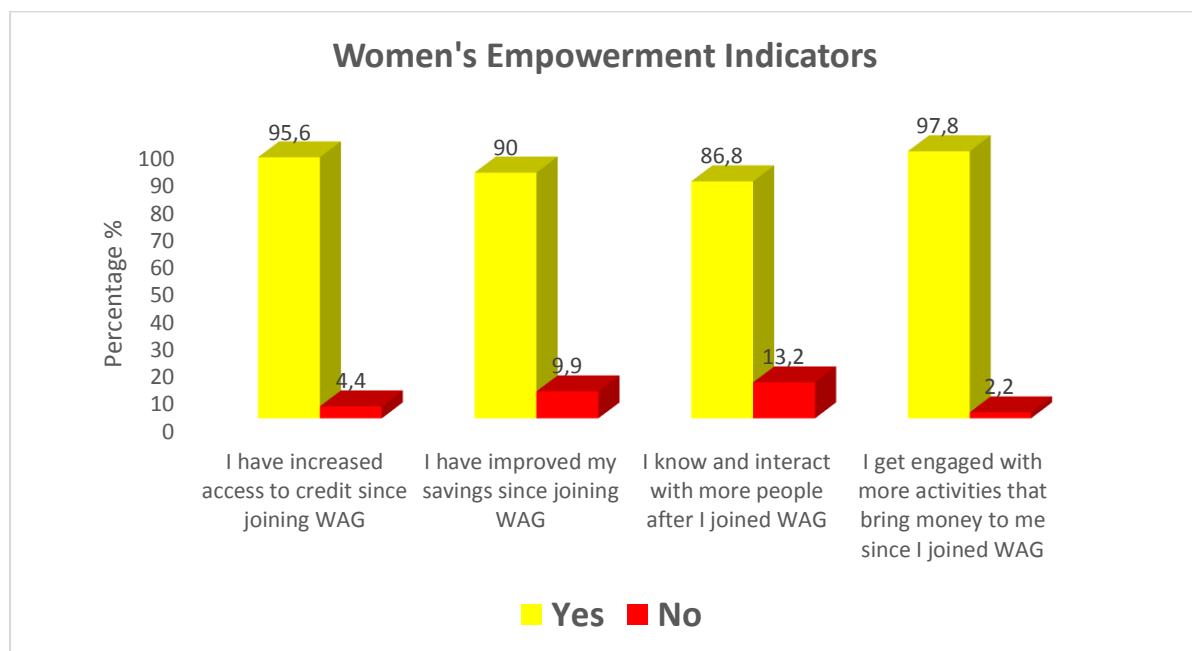
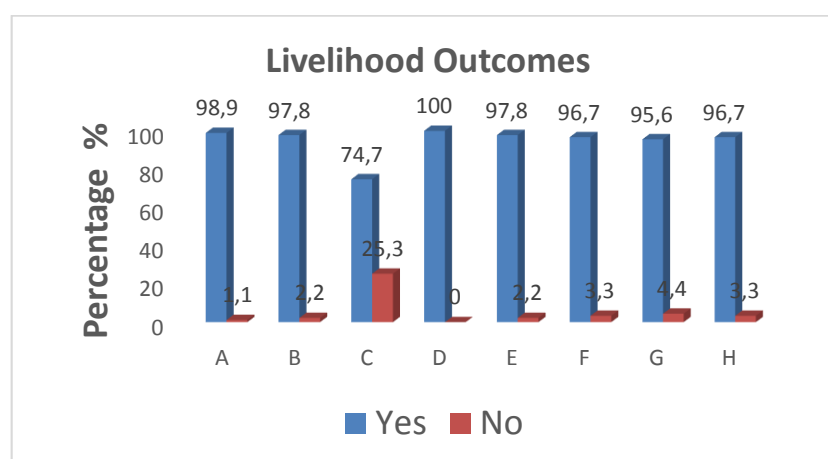


Figure 3: Distribution of Respondents based on Women's Empowerment Indicators

Livelihood Outcomes of Respondents

Figure 4 presents data on the livelihood outcomes of respondents who participated in Women's Agricultural Groups (WAG). The findings suggest that WAG membership significantly contributes to economic empowerment, financial inclusion, and improved well-being. A vast majority (98.9%) of respondents reported increased income since joining WAG, while only 1.1% did not experience any change. This indicates that WAG participation has a direct impact on income levels, likely due to enhanced access to financial services, business

opportunities, and economic activities. Higher-income levels contribute to improved living standards and financial security. Approximately 97.8% of respondents expanded their businesses after joining WAG, while only 2.2% did not. This suggests that WAGs play a critical role in promoting entrepreneurship by providing access to capital, business training, and market linkages. Business expansion leads to job creation, increased household income, and economic resilience. About 74.7% of respondents acquired property after joining WAG, while 25.3% did not. Property ownership is a significant indicator of economic empowerment and financial independence. This result suggests that WAGs enable women to accumulate wealth and invest in long-term assets, which enhances their economic security. All respondents (100%) reported improved access to financial services, highlighting the critical role of WAGs in financial inclusion. This could be attributed to group savings schemes, credit facilities, and financial literacy training provided by WAGs. Enhanced access to financial services empowers women to manage their finances effectively and invest in productive ventures. Approximately 97.8% of respondents acknowledged an improvement in their entrepreneurship skills, while only 2.2% did not. This suggests that WAGs provide valuable training and mentorship in business management, marketing, and financial planning, equipping women with the skills needed to run successful enterprises. A significant majority (96.7%) of respondents reported improved access to healthcare, whereas 3.3% did not. Increased income and financial stability from WAG participation likely enable women to afford better healthcare services, thereby improving their overall well-being and that of their households. About 95.6% of respondents reported an improvement in their consumption of nutritious food, while 4.4% did not. This suggests that higher income levels and financial security from WAG participation contribute to better household nutrition, reducing malnutrition risks and enhancing overall health. A majority (96.7%) of respondents stated they were more involved in decision-making, while 3.3% reported no change. This indicates that WAG participation enhances women's agency in household and community decisions, reinforcing gender equality and empowerment. These findings concur that despite its challenges, Women's Agricultural Groups (WAG) are making significant contributions to improving the livelihoods of disadvantaged rural communities (Fenton *et al.*, 2017).



Note: A: Increased income; B: Business expansion; C: Owning property; D: Improved access to Financial services; E: Improved entrepreneurship skills; F: Improved access to healthcare; G: Improvement in nutritious food consumption; H: Involvement in Decision Making

Figure 4: Distribution of Respondents based on their livelihood outcomes

Regression Results for Women's Empowerment Indicator and their Livelihood outcome

Table 2 shows the multiple regression analysis examines the relationship between women's empowerment (dependent variable) and various livelihood outcomes (independent variables). The model's R^2 value is 0.619, indicating that approximately 61.9% of the variance in women's empowerment is explained by the included variables. Importantly, all the variables report a P -value of 0.01, implying that each predictor is statistically significant at the 1% level. This signifies strong evidence that these indicators of empowerment have a meaningful impact on the livelihoods of the women surveyed. The findings demonstrate that all examined indicators of empowerment are positively associated with women's livelihood outcomes, and that the model provides strong evidence at a 99% confidence level ($P < 0.01$) that these empowerment dimensions matter. A one-unit increase in income is associated with a 0.291 increase in the women's empowerment indicator, holding other factors constant. This positive relationship suggests that higher income contributes to greater empowerment. While a one-unit increase in business expansion is associated with a 0.087 increase in the women's empowerment indicator, holding other factors constant. This positive association indicates that expanding business activities may contribute to women's empowerment, though the effect size is relatively small. Owning property is associated with a 0.169 increase in the women's empowerment indicator, holding other factors constant. This positive relationship suggests that property ownership contributes to women's empowerment. A one-unit increase in food consumption is associated with a 0.493 increase in the women's empowerment indicator, holding other factors constant. This positive relationship suggests that better food security contributes significantly to women's empowerment. Improved access to healthcare is associated with a 0.225 increase in the women's empowerment indicator, holding other factors constant. This positive association indicates that better healthcare access contributes to women's empowerment. Enhanced decision-making ability is associated with a 0.569 increase in the women's empowerment indicator, holding other factors constant. This positive relationship highlights the importance of decision-making autonomy in promoting women's empowerment. . This finding is in line with that of Tsiboe *et al.*, (2018) and Sraboni *et al.*, (2014), where it was found that an increase in the level of women's empowerment in agriculture is positively associated with dietary diversity and calorie level at the household level.

Table 2: Estimated regression results for women's empowerment indicator and their livelihood outcome

Variables	Coefficient	t- ratio	P value
Constant	0.016	0.059	0.01*
Increased income	0.291	0.787	0.01*
Business expansion	0.087	0.255	0.01*
Owning property	0.169	0.523	0.01*
Improved Entrepreneurship skills	0.054	0.172	0.01*
Increased food consumption	0.493	1.541	0.01*

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Improved healthcare access	0.225	0.783	0.01*
Decision Making	0.569	1.787	0.01*

$R^2 = 0.619$

* indicates significance at the 1% level ($P < 0.01$).

Source: Author's Compilation, 2025

Hypothesis

Null Hypothesis (H_0): There is no significant relationship between the socio-economic characteristics of the women and their participation level in livelihood activities.

Alternative Hypothesis (H_1): There is a significant relationship between the socio-economic characteristics of the women and their participation level in livelihood activities.

The Chi-square test results in Table 3, indicated that five out of six socio-economic characteristics (marital status, household size, primary occupation, education level, primary education, and level of income ($P = 0.00, 0.00, 0.02, 0.00, 0.00$ respectively) show statistically significant relationships with participation level at the 5% level ($P < 0.05$), while only age was not statistically significant ($P = 0.078$).

Conclusion: Since the majority of the socio-economic variables tested are statistically significant ($P < 0.05$), **the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) was accepted.** This indicates that there is a significant relationship between selected socio-economic characteristics and the level of participation in livelihood activities among women.

Table 3: Relationship between selected socio-economic characteristics encountered and participation level

Variable	Chi square	Df	P- value	Decision
Age	51.750	38	0.078	NS
Marital status	130.170	2	0.000*	S
Household size	58.229	13	0.000*	S
Primary occupation	68.70	3	0.002*	S
Education level	85.122	6	0.000*	S
Primary education	258.000	20	0.000*	S
Level of income	310.323	30	0.000*	S

S = Significant ($P < 0.05$), NS = Not Significant ($P > 0.05$)

* Indicates significance at the 5% level ($P < 0.05$)

Source: Author's Compilation, 2025

Conclusion

The study assessed the impact of women's empowerment on their livelihoods in Oyo State, Nigeria. The findings highlight the significant role of women's empowerment programs

in improving economic and social outcomes for women in agricultural communities. Women who participated in empowerment initiatives experienced increased access to credit (96.5%), improved savings (90.0%), expanded social networks (86.5%), and greater involvement in income-generating activities (97.8%). These benefits translate into tangible livelihood improvements, including higher income levels, business expansion, property ownership, enhanced access to financial services, better healthcare, improved food security, and increased decision-making power. Furthermore, the regression analysis confirmed that key livelihood indicators such as income growth, business expansion, food security, healthcare access, and decision-making autonomy significantly contribute to women's empowerment. However, the study also identified constraints such as socio-economic barriers, lack of formal education, and limited access to resources, which continue to hinder the full potential of women's empowerment initiatives. Overall, the study underscores the importance of targeted empowerment programs in enhancing women's livelihoods and promoting sustainable development in rural communities. Addressing existing challenges and strengthening support mechanisms will further enhance the impact of such initiatives.

Recommendation

1. **Strengthening Women's Access to Credit and Financial Services:** Financial institutions and government agencies should expand microcredit and loan schemes tailored to women's needs. Moreover, cooperative savings groups should be encouraged to enhance financial inclusion. **Enhancing Training and Capacity Building:** More training programs on entrepreneurship, financial literacy, and modern agricultural techniques should be implemented. Also, skill acquisition programs should be diversified to accommodate various livelihood activities beyond agriculture.
2. **Improving Policy Support and Implementation:** Government policies should integrate gender-sensitive strategies to ensure women's equal access to land, credit, and other productive resources. More awareness campaigns should be conducted to promote the rights of women in decision-making and economic activities.
3. **Addressing Socio-Cultural Barriers:** Community engagement programs should be designed to challenge traditional norms that limit women's participation in economic activities. In addition, Sensitization programs should target men and community leaders to support women's empowerment.
4. **Enhancing Market Access and Value Chain Participation:** Women should be linked to larger markets and value chains to maximize their economic gains. Support for agro-processing and value addition should be increased to improve profitability.
5. **Sustaining and Expanding Empowerment Programs:** Existing empowerment initiatives should be scaled up and monitored to ensure sustainability. Also, Public-private partnerships should be encouraged to mobilize resources for women's development programs.

Conflict of Interest

The authors declare that there are no conflicts of interest related to this research.

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