



Commentary

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Women in Small and Medium Scale Agricultural Enterprises and Poverty Reduction in Yobe State: A Logistic Regression Approach



Okpachu AS*

Department of Agricultural Education, Federal College of Education (T), Nigeria

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*Corresponding author: Okpachu AS, Department of Agricultural Education, Federal College of Education (T), Potiskum, Nigeria, Email: steve_okpachu@yahoo.com

Abstract

This study is an attempt to determine the impact of Women participation in Small and Medium Scale Agricultural Enterprises (SMEs) on poverty reduction in Yobe State. The study used interview and questionnaire to elicit information from the respondents. A total of 100 women respondents who participated in various small and medium scale agricultural enterprises were purposively selected for the study. The study used descriptive statistics and Logit regression model to analyse the data collected. The result from the study shows that women are involved in SMEs to earn income that will enable them take care of their families. The logistic regression shows that SMEs have impacted significantly on women in the study area. The study therefore recommends that women should be enlightened to participate in agricultural SMEs and government should create an enabling environment through the provision of facilities such as farming equipments, land to construct shops and funds to carry out their businesses so that women can venture into SMEs.

Introduction

In Nigeria, about 70% of the populace live in the rural areas and are engaged in agriculture at peasant level. However, the growing demands for increased agricultural production in Nigeria offers opportunities for farmers to relief the negative impact of traditional agricultural practices and underutilization of inputs in the new farming order of mechanization tagged 'precision agriculture [1]. One way by which this negative impact can be reversed is through the integration of the Small and Medium Scale Enterprises (SME). The small and medium scale enterprises are seen as keys to integrated growth, alleviation of poverty and reduction of unemployment in the country [2]. Since small and medium-sized enterprises (SMEs) are the backbone of growth in production, employment and innovation it is crucial to provide an enabling environment for agricultural SMEs in Africa. Small and Medium Enterprises (SMEs) occupy a place of pride in virtually every country or state. Because of the significant roles SMEs play in the growth and development of various economies, SMEs have aptly been referred to as "the engine of growth" and "catalysts for socio-economic transformation of any country". SMEs represents a veritable vehicle for the achievement of national economic objectives of employment generation and poverty reduction at low investment cost as well as the development of entrepreneurial capabilities including indigenous technology [3]. Nigeria is endowed with vast productive arable land which can be harnessed for the development of SME agricultural projects. It stands to reason that if the country is to show serious

commitment to the development of the SMEs in the agricultural sector, the economy must witness meaningful transformation and prosperity. A dynamic SMEs sub sector in the agricultural sphere is vital and imperative for the overall economic development of the nation. Apart from providing opportunities for employment that enhances poverty alleviation, SMEs help to provide effective means for curtailing rural urban migration and the utilization of local raw materials. It is against the back drop of the positive roles of SMEs in an economy that this paper proposes the rapid development of SMEs in the agricultural sector [1].

In Nigeria, there is increasing realisation of the critical role of women in agriculture and food production and of the fact that the empowerment of women is necessary for bringing about sustainable development at a faster pace. Various studies have shown that women produce between 60 to 80 per cent of the food in most developing countries and are responsible for half of the world's food production (Ukeje, 2004). No country can achieve its potential without adequately investing in and developing the capabilities of women. In the interest of long term development it is necessary to facilitate their empowerment. Given the multiples roles that a woman is expected to play in her family and society, SME's do provide a critical opportunity for empowerment and poverty reduction amongst rural women.

The need to enhance the growth and development of an economy through the activities of women in the participation of

SMEs has gained tremendous support in development literature [4,5]. This is because of the supportive role women played in the involvement and enhancement of welfare status and poverty reduction. According to Stupnytska, Koch, Macbeath, Lawson & Matsui [6] the greater the involvement of women in SMEs, the more likely the increase in per capital GDP, increase in the propensity to use their earnings and increased bargaining power to buy goods and services as well as support the development of human capital.

The supportive role of women in SMEs is not well documented. Saikou & Wen-Chi [7] observed that there is also lack of sufficient research on women's role in small and medium enterprise development on women entrepreneurs. This is even more so in the rural area where their insufficient information on women participation in SMEs. This paper is significant because it contributes to the existing literature on women in SMEs especially now that there is renewed emphasis of the Nigerian government anchored on diversification of the economy through the promotion of SMEs and entrepreneurship development. This paper focuses on how the participation of women in agricultural SMEs can impact on employment generation and poverty reduction in Yobe State.

Conceptual Framework

Small scale enterprises in Nigerian and in the less developed countries have come a long way in contributing significantly to economic growth and development. The preponderance of small scale enterprises in Nigeria is because it requires little capital to set up. It can easily be seen in some one's house, compound, or in front of a company or building sit. They can be found in the rural or urban centre's with goods such as soap, sweet, rice, oil, sugar, detergent, block making etc displayed. In fact the essence of setting up a small business is to take care of one's immediate needs such as food, clothing, school fees, house rent etc.

There are various definitions of Small and Medium Scale enterprises depending on the authors' perspective. The definitions are a function of the culture and peculiar circumstances of the person attempting the definition. The definitions in use depend on the purposes and the policies which govern the SME sector in a particular country. However, the three parameters that is generally applied by most countries, singly or in combination are: capital investment, volume of production or turnover of business. According to Aremu [8] Small and Medium Scale Enterprises is defined on the basis of employment, in micro/cottage industries (1-10 workers), small scale industries (11-100 workers), medium scale industries (101-300 workers) and large scale industries with (301 and above). The Nigeria Minister for Industry noted that "Enterprises employing less than 500 workers are generally regarded worldwide as SMEs". Based on the foregoing, the major component is the annexation of resources and overall contribution to the economic well being of developing nations across the globe. In a developing country like Nigeria, the importance of SMEs in the process of social economic

development cannot be overlooked. The importance of SMEs in the development of the country has been summarized in Nigeria third national development plan 1975-1980 as the generation of employment opportunities, stimulation of indigenous entrepreneurship, facilitation of effective mobilization of local resources including capital and skill as well as reduction in regional disparities [9].

According to Ireghan [10], SMEs constitute the very basis of the national economy in terms of development of local technology, stimulation of indigenous entrepreneurship, mobilization and utilization of domestic savings, employment creation, structural balancing of large and small industry sectors in both rural and urban areas, supply of high quality intermediate products thereby strengthening the international competitiveness of manufacturer's goods, stimulate technological development and innovations, provide the capacity to expand export possibility and substitute import effectively. Discovery has also shown that the expected role contribution by the large scale enterprise to the economy in terms of improvement in the GDP, employment generation, increasing local value added, technological development among others are been resolved by SMEs (Nwoye, 2010).

Theoretical Framework

This study was guided by Pearson's gender relations theory, this theory was developed by Ruth Pearson in [11]. This is where the society views all activities that are carried out to be based on social roles and interactions of men and women. The society seems to have ultimate authority on the precise nature of what women and men actually do, and their real contribution on production and reproduction which turn out to prejudice women (Orodho, 2004). Pearson gender relations theory is appropriate for this study because it emphasizes the various socio-cultural and economic norms which must be considered for women to take the opportunities to participate in business. In traditional setup, the family is headed by household head; a position held by a male parent, that is, the patriarchal ideology is thus dominant. The roles assigned to women are narrowly defined. They are expected to be good wives and mothers. Women are seen as subordinates and their involvement in business less important. Gender related challenges affecting women in business include multiple roles, gender socialization, boys' education preference, access and control of assets. These are related to socio-cultural and economic consideration.

Small Scale Enterprises and Women Welfare

The engine of growth and economic transformation is now on small and medium scale enterprises which have a high potential in generating significant employment. At various times since the 1970s, the government has designed and introduced measures to promote SMEs in order to support employment generation thereby reducing poverty among the citizens [12].

Self-employment in small-scale businesses presents a constructive option for income generation. In many developing

countries, a high percentage of small-scale businesses that cater to local needs are controlled or owned by women. Women's enterprises tend to be relatively small, have informal structures, flexibility, low capital needs, modest educational requirements, high labour intensity, and depend on local raw materials. They are also characterized by their dependence on family labour and limited technical and managerial skills [8]. Commonly, these enterprises are not registered, maintain no business records and do not have access to credit from formal credit institutions. Rural women are active participants in retail trade and marketing, particularly where trade is traditional and not highly commercialized. In many parts of Nigeria, women market foods such as vegetables; they distribute most major commodities; and account for nearly all local marketing. Through their marketing efforts, women provide valuable links among farmers, intermediaries and consumers. Petty traders, often thought of in the past as non-productive, in fact serves to stimulate the production and consumption linkages in the local economy [13].

Women operate a major segment of trade and market enterprises in the informal sector, making about 91% of the labour force in that sector. Their enterprise activities lie mostly within a wide range of informal activities such as agricultural production, food processing, extractive industries, fish smoking, garment/textile, soap making, hairdressing, rural craft and petty trading. Adekoya [14] argues that women usually combine farming activities with a wide variety of agro based processing activities especially in the rural areas. Women play a crucial role in the distribution and marketing of agricultural and many other industrial goods such as textile/garments, foot wears, household provisions, among others. Women who sell the above mentioned goods in large quantities had to commute between community markets and other major market centers in order to get market for their products. Other economic activities women engaged in are cooked food selling, weaving, and dressmaking/seam stressing. All these mentioned activities are seasonal in nature; women do them at certain time of the year during which, it is easy to come by the raw materials. Also, market for such activities reach its peak at certain period of the year; that is, during the harvesting season when there is money in the pockets of the local folks. All these are manoeuvring styles adopted by these women in order to cope with situations. The urgency exercised by these women is their ability to actively engage in shaping their own world, rather than their actions being determine beforehand by capital or the intervention of the state [9].

Methodology

Study area

Yobe State is located in the north-east geopolitical zone of Nigeria; Yobe State was created out of the old Borno State in 1991 and has seventeen local government areas. With an estimated population of about 2.5 Million, Yobe State's ethnic composition has a rich and diverse historical and cultural heritage. There are five major ethnic groups in the state which

include the Kanuri, Fulani, karekare, Bade and Hausa. Yobe State Covers a total of 54, 428sq km land area, the state borders the Nigerian states of Bauchi, Borno, Gombe, and Jigawa and to the north Niger Republic. Annual rainfall ranges from 500mm-1000m and the rainy season is normally from June to September in the North and May to October in the South. The two vegetation zones in the state, namely, the Sahel in the north and the Sudan Savannah in the south have been severely under threat of desert encroachment thereby creating arid and semi-arid conditions.

Sampling procedures

This study examined the participation of women in small and medium scale agricultural enterprises in the study area. This study adopted purposive and simple random sampling procedures. Three Local Government Areas namely Potiskum, Nangere and Fika were purposely selected because of their proximity to the researchers' place of abode and high agricultural activities. 100 women involved in agricultural enterprises were purposively selected and data was obtained using structured questionnaires.

Techniques of Data Analysis

Following Adekoya [14] descriptive and inferential statistics were used in the study. The descriptive statistics included the use of tables and simple percentages while Log it regression was used as part of inferential statistics.

Logit model

A log it model is a probability function which uses poverty status as a dic dichotomous dependent variable. The model use socio-economic variables to determine the factors influencing poverty. The model is implicitly expressed as:

$$P_1 = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)}} \dots \dots \dots 1$$

Where P_1 is probability that poverty reduced, β_0 is constant term, β_1 is coefficient to be estimated, X is independent variable and k is number of independent variables

$$\text{Let } Z = \beta_0 + \sum \beta_k X_k \dots \dots \dots 2$$

$$P = \frac{1}{1 + e^{-z}} \dots \dots \dots 3$$

As Z ranges from $-\infty$ to $+\infty$, P ranges from 0 to 1 and P_1 is non-linearly related to Z_i . The logit of the unknown binomial probabilities, that is, the logarithms of the odds, are modeled as a linear function of the X_i . In estimated form, the model is expressed as:

$$\text{Logit}(P_1) = \ln \frac{P_1}{(1 - P_1)} = \beta_0 + \beta_1 X_{i1} + \dots + \beta_k X_{ki} + U \dots \dots \dots 4$$

The unknown parameters β , are usually estimated by maximum likelihood. Thus, the model is explicitly expressed as:

$$POVSTAT = \beta_0 + \beta_1 EXPEDU + \beta_2 EXPFD + \beta_3 AVINC + \beta_4 HLTFAC + \beta_5 CAPBASE + \beta_6 HHHED + \beta_7 CLTHSLF$$

where:

POVSTAT = Poverty status (equal to 0 if poverty has reduced and 1 if poverty has not reduced).

β_0 = Constant term;

β_i = Coefficient of the parameters to be estimated;

EXPEDU = Impact of the business on children education (equal to total annual expenditure on education) (N);

EXPFD= Expenditure on food (N);

AVINC = Average Annual income of respondents (N);

HLTFAC = Access to a health facility (equal to 1 if the family has access to health and 0 if otherwise);

CAPBASE = Business size (capital base of the business);

HHHED = Household head (equal to 1 if headed by a woman and 0 if otherwise);

CLTHSLF = Access to clothing (1 if at least one new cloth involvement in SME, 0 if otherwise).

From the apriori expectation, it is expected that women involvement in small scale businesses should have a significant impact on their welfare. It is thus expected that from the estimated model, the β_1 and β_2 are expected to be negative while $\beta_3, \beta_4, \beta_5$ and β_7 are expected to be positive. This is because increases in $\beta_3, \beta_4, \beta_5$ and β_7 will increase the probability that poverty will reduce whereas increases in β_1, β_2 and β_6 will reduce the probability of one being poor.

The model was estimated to ascertain the effect of participation of women in SMEs on poverty status of the sampled respondents.

Presentation and Discussion of Results

Socio-economic characteristic of the respondents

Tables 1 present the socioeconomic characteristics of respondents in the study shows. The table shows that 20% of between 21- 30years, 25% fall within 31-40years, 35% were within 41- 50years and 20% are within the 31- 60years age bracket. The household size reveals that 86% of the respondents have a family size of between 1 to 20 persons. Table 1 also reveals that the experience of the respondents in their various enterprises. 91% of the respondents have between 1 to 15years experience in their various enterprises.

The average farm size holding in the study area is 0.98 hectares. This is an indication that the land cultivated by farmers is still within small scale which largely affects their productivity in the face of impaired health situation. Table 1 reveals that majority of the respondents (83%) did not progress beyond primary school. Education also enhances the adoption and application of innovation. Table 1 also shows that 30% of the

respondents are involved in crop production enterprise, 23% participate in animal production, 17% are engaged to agro-allied enterprise and 30% are involved in marketing enterprise.

Table 1: Socio-economic characteristics of the respondents.

Variable	Frequency	Percentage
Age		
21-30	20	20
31-40	25	25
41-50	35	35
51-60	20	20
Mean	41	
Household Size		
01-10	49	49
11-20	37	37
21-30	14	14
Mean	12	
Experience		
01-05	44	44
06-10	32	32
11-15	15	15
16-20	9	9
Mean	8	
Farm Size		
0.1-1.0	56	56
1.1-2.0	29	29
2.1-3.0	13	13
Mean	0.98	
Educational Level		
Quaranic education	54	54
Primary	29	29
Secondary	13	13
Tertiary	4	4
Types of Enterprise		
Involved in:		
Crop production	30	30
Animal production	23	23
Agro allied enterprise	17	17
Marketing enterprise	30	30
Source: Field Survey, 2016		

Regression estimate of impact of SMEs on poverty status of respondents

The results from Table 2 indicate that the coefficient of the EXPEDU variable (i.e. Expenditure on education of the sampled respondents) is negative (-0.787) correctly signed and statistically significant at 10% level of significance. This implies that EXPEDU of the respondents has influence on the probability of a sampled respondents being non-poor. The Exp. (β) of 0.916 indicates that a unit change (increase) in expenditure on

education of the sampled respondents from SMEs would reduce their likelihood of being poor by 91.6%. The parameter estimate for the expenditure on food (EXPFD) with income generated from SME is negatively-correctly signed (-0.780) and statistically at 5% level of significance. This implies that the number of times a household spends on food in a day with income obtained from SMEs, indeed does have influence on the odds or probability of a respondent being non-poor. The Exp (β) or odds ratio of 0.197 indicates that the odds or probability of a sampled respondent being non-poor can be explained 19.7% by a unit increase in the expenditure on food the respondent undertakes. The results from Table 2 further indicate that the coefficient of the AVINC (Average income of the respondents) is negatively-correctly signed and statistically significant at 10 percent level of significance. This implies that average annual income has influence on the probability of a sampled respondent being non-poor. The Exp. (B) of 0.300 indicates that a unit change in the average annual income of the respondents from SMEs would reduce their likelihood of being poor by 30%. The parameter estimate of HLTFAC (health facility accessed) of the respondent is positively incorrectly signed (0.020), but it is statistically significant at 10% level of significance. This implies that access to 'improved' health facilities by a sampled respondent will tend to increase her poverty status. This may be due to the fact that 'improved' health facilities in the study area are in short supply and very expensive, and hence access to them will rather impoverish those patronizing them. This implies that respondents who visit 'improved' health facilities for medical attention will be left with little income which will make them absolutely poor. The Exp (β) of 0.002 indicates that the odds of a sampled respondent being non-poor are a minimal 0.2%.

Table 2: Regression Estimate of impact of SMEs on poverty status of respondents

Variables	β	SE	p-value	Exp (β)
EXPEDU	-0.787	0.165	0.050*	0.916
EXPFD	-0.78	0.755	0.040**	0.197
AVINC	-0.991	0.556	0.055*	0.31
HLTFAC	0.02	0.507	0.070*	0.021
CAPBASE	-0.699	0.581	0.097*	0.05
HHHED	0.203	0.086	0.018**	0.0223
Constant	-53.483	0.701	0.997	
Log-likelihood	170.819			
R2	80			

Table 2 also indicates that the capital base (CAPBASE) of a sampled respondent is negatively-correctly signed (-0.699) and statistically significant at 10% level of significance. This implies that an increase in the capital base of a respondent involved in SMEs can reduce poverty. The Exp (B) of 0.050 indicates that a unit change in CAPBASE can reduce poverty by 5%. The parameter estimate of HHHED is positively-correctly signed and statistically significant at 5% level of significance. Even

though economics theory is not explicit about this position, but the research assumed a household head that is a woman would have a positive relationship with the respondents' poverty status. The Exp (B) of 0.223 indicates that a unit change in the HHHED to a woman would increase her poverty by 22.3%. Thus, given that the likelihood ratio (LR) is 170.823 and its P-value at classification cut-off of 0.5, we observe very clearly that LR (170.823) is greater than 0.5. Therefore, we reject the null hypothesis that all β 's are not significantly different from zero, that is, the participation of women in SMEs have significantly alleviated poverty in Yobe State. The Nagelkerke R² of 0.800 (80.1%) shows that participation of respondents in SMEs tends to influence their poverty status.

Conclusion and Recommendation

The study concludes based on the findings that women participation in agricultural SMEs has significantly reduced poverty in Yobe State. This is because women involved in agricultural SMEs earn income that is used to take care of their families. Based on the findings of this study, it is therefore recommended that efforts should be made to involve women in agricultural SMEs to encourage other women through provision of financial resources to help them establish their own small businesses. Gender sensitivity is essential when carrying out programmes, training and workshops in rural settings. More research should be conducted on rural women's poverty and female farmers' relationship with their husbands in farm productions. There is the need to ensure involvement of full participation of women who are poor and are less educated in agricultural business.

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