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Gender Disparities among Cocoa Farmers in Oyo State: An Empirical Evidence of the Need for Women Empowerment

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Abstract

Many developing countries exhibit considerable gender inequality in health, employment and education. These inequalities manifest in low resource control among women. This study examines the effects of the resource level on the technical efficiency of the women cocoa farmers in Oyo state, since increased production and productivity are direct consequence of production resulting from efficiency of input combination, given the available technology. Moreover, efficiency index is a factor that may determine involvement of women in agriculture since they have other occupational options. Data collected from 271 farmers in Oyo state in which 33 of them are female farmers, were analyzed using stochastic frontier production methodology to determine their technical efficiencies. The study shows that female farmers are 76% efficient, while male farmers are 81% efficient in the use of combination of their inputs. The difference in the technical efficiency of male and female farmers is due to their differences in resource levels, especially farm size, credit, education and experience, the study discovered that while farm size, credit, education and farming experience will enhance the efficiency of the women farmers; family size will increase inefficiency of the women farmers. Any step to increase the resource supplies to the female farmers will increase their efficiencies. It may therefore be necessary to liberalize land market, evolve loan scheme that will be mainly for women farmers. Mass literacy campaign should be more female focused. Promotion of effective modern contraceptive should also be encouraged among the rural women farmers in Oyo state to encourage family planning. All these steps will increase their participation in agriculture and the efficiency of their agriculture performance.

Keywords: Gender, Cocoa, Farming, Women, Empowerment.

Introduction

Many developing countries exhibit considerable gender inequality in health, employment and education. For example, girls and women in Asia including China suffer from higher mortality rates than do men-creating what Amaryta Sen. called "missing women" (Klasen and Wink, 2002 and Sen, 1989). Employment opportunity and pay also differ greatly by gender in most developing regions as well as most industrial regions (UNDP, 1995 and World Bank, Food and Agriculture Organization, and International Fund for Agricultural Development 2009). There are larger gender disparities in education, particularly in South Asia, the Middle East and North Africa and sub Saharan Africa (Peterman, *et al* 2010). Given the long and protracted period of Nigeria's socio-economic crisis and the resulting lack of sustainable human development and fundamental structural transformation, it was inevitable that inequality and disparities in market opportunity, in economic growth and income distribution should become more pronounced, both in scope and magnitude. Income disparities have thus, become commonplace among individuals (UNDP, 1997).

The average household income for 1992/93 stood at about N1250. The National consumer survey from which, this figure was derived also shows that there was little or no difference in average income across the sectors. The average for urban and rural respectively was #1345 and #1140. When disaggregated by the gender of the head of household, the average becomes about #1000 for female-headed households and #1300 for male headed-household (FOS, 1995). The survey found education as major determinant of the significant difference in the income of workers, particularly secondary education (Adamu, 1993). Female farmers in general and female headed farm households in particular have also been widely reported to have limited access to production resources (Panin and Brummer, 2000., Anselm *et al*, 2002 and Palmer, 1991). A rich literature illustrates the existence of structural socio-economic barriers for women's ability to access land, markets, education and networks which often add more time pressure on the complex work load of women in rural areas. Moreover, several studies have explained how these constraints impact women farmers uptake of lower levels of input use and their lack of technology adoption (World Bank, Food and Agriculture Organization, and International Fund for Agricultural Development, 2009., Doss, 2001 and Quisumbling, 1994).

A recent review of the literature that assesses the use of fertilizer, sprays, and new varieties of seeds (Peterman, *et al* 2010) shows that whilst rates of adoption tend to be lower for women than half of the studies reviewed, differences in human capital, access to credit, extension and networks help to explain these differences. The empowerment of women is central to the objectives of development. It is argued that there is compelling empirical evidence that attention to opportunities for girls and women does not only improve them but also has a major impact on development effectiveness.

This study examined the effects of resource level on the technical efficiency of the women cocoa farmers in Oyo State, since increased production and productivity are direct consequence of production resulting from the efficiency of input combination, given the available technology. Moreover, efficiency index is also a factor that may determine involvement of women in agriculture since they have other occupational options.

Materials and Methods

This empirical study was conducted in Oyo state Nigeria. Oyo state is one of the 36 states of Nigeria and is located in South Western part of the Country. Oyo state is divided into four ecological zones. Ibadan/Ibarapa was purposively selected because of concentration of cocoa farms there. Five local Government Areas (LGAS) were randomly selected from the six LGAS that make up Ibadan/Ibarapa Zone. Three communities were randomly selected from each LGA. Twenty farmers were drawn from the list of cocoa farmers from each community to make a total sample of 300. Farm level information was collected with the use of questionnaire and interview schedule from the 300 farmers. The questionnaire were designed to collect information on total value of output of the farmers quantities of input used, prices of input and output, socio-economic variables of the farmers, as well as other relevant information. Only 271 of the questionnaire were found useful, as others did not provide the necessary information. The 271 of the questionnaire were divided into two groups according to gender (male and female); 33 farmers are women, while the rest were men. Out of 33 women only three of them were widows, others are the owners of their farms. This is contrary to the view of Anselm *et el*, (2002) who opined, that women are mere labourers in tree farms of their husbands.

Data collected were analyzed using stochastic frontier production methodology to determine their technical efficiencies.

Results and Discussion

Table 1 shows that male farmers have more resources than female farmers, such as farm land and volume of credit. Male farmers are more educated than female farmers. They are more experienced, they have more farm credit than female farmers. All these may explain the differentials in their annual income. This is in conformity with the opinion of Mehra, (1991) that women, especially those who are in rural areas are resource poor, a factor that may affect their efficiency and active participation in agriculture.

Table 2 shows that labour (family and hired labour) and chemical + fertilizer cost, are the significant determinants of output of the male cocoa farmers, while labour is positive, chemical and fertilizer cost is negative . This implies that increase in labour supply on the farm will increase the output of the male farmers, while decrease in cost of chemical and fertilizer will increase the output of the farmers. It is interesting to note that none of these specified inputs has significant relationship with the output of the women farmers, which indicates that they have limited access to these inputs. The fact that women have limited access to productive inputs has been documented by Due and Gladwin, (1991)., Anselm *et al*, (2002) and Peterman, *et al* 2010).

Inefficiency estimate shows that education, experience and innovation adoption have negative relationship with efficiency of the farmers while family size and age of the farmers have positive relationship with inefficiency of the farmers. This means that increase in education, experience and number of innovation adopted will reduce inefficiency of the women cocoa farmers, while increase in family size and age of the cocoa farms will increase inefficiency of the farmers. The reason why family size has significant and positive effect on the inefficiency of women farmers can be due to the fact that meager resources of the women are expended on feeding and caring for the children with little left for the farming business . Since male farmers have more of technical efficiency enhancing factors than female farmers. In fact the gamma (y), which indicates the presence of inefficiency in the data shows that inefficiency effect is higher (0.92) among female cocoa farmers than male farmers (0.86).

The technical efficiency of male farmers varied from 0.48 to 0.96 with mean of 0.81, while the technical efficiency of female farmers varied from 0.19 to 0.93 with mean of 0.76. This means that, while male farmer are 81% efficient in the use of combination of their inputs with the given technology, female farmers were just 76% efficient. There is also wide gap among the technical efficiencies of female farmers than male farmers.

Conclusion and Recommendations

This study shows that woman farmers are resource poor and that none of the specified variable of farm size, labour, chemical, fertilizer and   implement is significant determinant of the output of the women farmers. They are only 76% efficient, while men are 81% efficient. The major determinants of inefficiency of the women cocoa farmers are family size and number of innovation adopted. While innovation adopted increase the efficiency, family size reduces it. Any step taken to increase the resource supplies to the female farmers will increase their output and efficiencies, which may encourage their participation in farming. Therefore, it may be necessary to examine our land tenure system, the study also advocates for a new loan scheme that will be mainly for women farmers. Mass literacy campaign should be more female focused. The use of modern family control methods should be encouraged among the women farmers so that they can be relieved of the burden of large mouth to feed and have enough time and material resources to participate in agricultural activities

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Table 1: Resource levels of men and women cocoa farmers in Oyo state.

Resources	Men	Women
Years of formal education (Y)	8.11	3.18
Farming experience (years)	19.09	14.64
Farm size (ha)	3.03	1.72
Volume of farmers credit (₦)	10668.00	4000.00
Farm income (₦)	127019.00	99106.45

Source: Field survey data, 2002.

Table 2: Maximum Likelihood Estimate of Equation 1and 2

Variable	Women Coefficient	t - ratio	Men Coefficient	t - ratio
b_0	4.94	33.79*	113281.29	1916.74*
b_1	0.11	1.74	395.66	1.27
b_2	0.08	0.60	160.32	30.72*
b_3	-0.03	-0.40	-1434.44	-16.41*
b4	0.03	0.89	29.23	0.71
Inefficiency Parameters				
a_1	-2.10	-3.42	-127.64	-1.11
a_2	-4.05	-1.75	-176.53	-1.13
a_3	6.98	3.46*	-715.92	0.97
a_4	-4.65	-2.14*	-484.47	0.97
a_5	1.34	1.56	355.63	0.80
y	0.92	17.55*	0.86	16.65*
Log likelihood	-36.62		-644.70	

*Significant at 5%.

Source: Field survey data, 2002.

Table3: Technical Efficiency of Male and Female Famers

	Men	women
Minimum	0.48	0.19
Maximum	0.96	0.93
Mean	0.81	0.76

Source: Field survey data, 2002.