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Effect of Time Allocation on the Poverty Status of Rural Women in Ogun State, Nigeria

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ABSTRACT

The imbalance in time allocation on productive activities contributes to higher vulnerability to poverty among rural women in Nigeria. This study examined the effect of time allocation on the poverty status of rural women in Ogun State, Nigeria. Multistage sampling technique was used to select 120 rural women from the study area. Primary data was collected with the aid of a semi structured questionnaire complemented with an interview guide. Descriptive statistics, FGT poverty index and probit regression model were the analytical tools used for data analysis. Analysis revealed that majority (96.7%) of the rural women were within their productive age, (79.2%) of them had low level of education, (65.0%) were married with a mean household size of 4 persons. Findings also revealed that rural women spent less productive time (5.49 hours per day) on income generating activities compared to time spent on unpaid family work (7.51 hours per day). Furthermore, analysis on poverty status of the rural women indicates that most (58.9%) of the rural women sampled in the study area were poor with the poverty incidence being 0.589700. Factors such as time spent on farming activities ($p<0.1$) and non-farming activities ($p<0.05$), time spent on household chores ($p<0.1$) and other socio-economic factors such as education ($p<0.01$), income ($p<0.1$) and household size ($p<0.05$) significantly influenced the poverty status of the rural women. Therefore, the study recommends that government initiatives, programme and policies should provide increased access and usage of labour-saving technologies for rural women in order to reduce their workload on house chores thereby giving them more time to engage in productive activities in order to alleviate their poverty status.

INTRODUCTION

Time is an important and most valuable resource which is available to individuals and families (Adekunle *et al.,* 2019). Unlike other resources, it has an equal distribution, although allocation varies. Time allocation refers to the process of assigning specific amounts of time to various tasks, activities, or projects based on their priority, importance, and the resources available. However, it involves deciding how much time to dedicate to each task in order to efficiently manage one's workload and accomplish goals within a given timeframe. According to Kes and Swaminathan (2006), time allocation to diverse activities is impacted by both economic and non-economic factors, one of which is gender.

Gender inequalities exist in time use with women spending more time on unpaid work (non-market work) activities, while men spend more time on leisure and paid work (market work) (Antonopoulos & Memis, 2009). This is because in most societies, women are usually responsible for most of the household and child-rearing activities. Depending on the household structure and size, these tasks may be extremely time intensive. As a result of this, women are less likely to participate in the labour force, those who do are also much more likely to engaged in self-employment activities rather than higher-paying wage employment. According to Lanjouw and Lanjouw (2001), time scarcity forces many women to start-up cottage industries, such as handicrafts, which are often characterized by low returns and limited potential for expansion.

Time use issues have strong gender dimensions, as African women often have to work long hours for domestic chores and the collection of water and wood apart from working in the fields or in other labor market activities. Although women do more total work, they have less access to money, measured in terms of either own income or assets, have less wealth, and less control over the economic processes they have contributed to (Ironmonger, 1996). In sub-Saharan Africa countries like Ghana, Tanzania, Zambia and Uganda, women spend many hours for household chores as unpaid activities being their responsibilities (Nkengla-Asi, 2019; Dinkelman and Ngai, 2022). For instance, previous time-allocation studies have shown that in Ghana, women carry a much heavier burden for household chores despite working outside the home almost as much as men (Brown, 1994). Also, in Uganda, women spent more time looking after their families, working in their husbands' gardens and producing food for their households. Similarly, in Tanzania, women, and in particular women from low-income groups and living in areas with limited facilities, spend long hours on water and fuel collection, food preparation and other domestic and childcare activities to compensate for poor infrastructure (Fontana & Natali, 2008). In Nigeria, evidence by the National Bureau of Statistics (NBS, 2005) indicated that, women devote more of their time to unpaid activity in this order: childcare (17.2%), cooking (10.1%), care of the elderly (9.8%) and recreation (8.3%) while men used their time too on childcare (9.9%), recreation (8.2%), care of the elderly (8.2%), going to market (6.67%) and cooking (6.62%). Recent study by Olawuyi *et al.* (2021) confirmed that the average weekly time spent on various activities by females is higher (17.9 hours) compared to their male counterpart (15.9 hours).

In rural communities, women make up the bulk of the poor, and their plight is exacerbated by the fact that they are more frequently responsible for family tasks such as providing basic necessities for close and extended family members (Adepoju, 2004). The burden of household chores consumes many hours which hinders women to take part effectively in profits generation activities hence increasing their vulnerability to chronic poverty (Abdullahi *et al.*, 2015; Ochola *et al.*, 2021; Dutta, 2022). According to Emefesi and Yusuf (2014) and NBS (2022**),** about 80% of the poor population live in rural areas with 70% of the poor population being women. However, in an effort to curb poverty in Nigeria, the Federal Government designed and implemented many poverty alleviation programmes since independence. Some of these programmes include Operation Feed the Nation (1976), Green Revolution Program (1980), Family Support Program (1980), National Directorate of Employment (1986), the Directorate of Food, Roads and Rural Infrastructure (DFRRI) for rural development (1986), Better Life for Rural Women (1987), National Poverty Eradication Programme (2001) and recently, the IFAD Assisted Livelihood Improvement Family Enterprise (LIFE) (2017). However, in spite of these initiatives, poverty remains high in Nigeria and women are most affected (Alese, 2013; Onwuka *et al.*, 2019).

Several studies have examined the determinants of poverty status of rural women in Nigeria (Ayanwale & Adisa, 2012; Oladimeji, 2013; Oladimeji *et al*., 2014; Fakayode *et al.*, 2015; Falola *et al.*, 2015; Pelemo *et al.*, 2020). However, these studies did not examine the influence of time allocation on the poverty status of rural women. A recent study by Adekunle *et al*. (2019), examined

the effect of gendered time allocation on household poverty, however this study was only limited to Osun and Oyo State in South Western Nigeria. Therefore, this study aims to contribute to the limited empirical studies by examining the effect of time allocation on the poverty status of rural women in Ogun State. The specific objectives of this study are: describe the socio-economic characteristics of the rural women in the study area; determine the amount of time allocated to different activities by the respondents in the study area; determine the poverty status of the rural women in the study area and also examine the effect of time allocation on the poverty status of the rural women in the study area.

METHODOLOGY

The study was carried out in Ogun State, Southwest Nigeria. Ogun State famously known as the "Gateway to State" is bounded in the south by Lagos State and bounded in the north by Oyo Sate. According to the 2006 National Population Census (NPC), the state had a total population of 3,751,140 residents, ranking it as the 16th most populated state in Nigeria. The climate in the region is classified as tropical wet and dry or savanna, with an average annual temperature of 29.34°C (84.81°F), slightly lower than Nigeria's overall averages. As regards the land area, Ogun State ranks as the 24th largest state in Nigeria, covering approximately 16,762 square kilometres. Sub-ethnic groups found in Ogun State include the Egbas, Ijebus, Yewas and the Eeguns, immigrants from ethnic groups such as the Igbos, Hausas e.t.c while there are only few foreigners in the state. Predominant occupations of the inhabitants of the state are farming, civil service, transport services, artisanship and trading. Farmers in the state grow food crops (e.g. cassava, yam, maize, beans, vegetables etc.) while very few others grow cash crops, such as cocoa, kola nut, rubber, coffee among many others.

Multistage sampling technique was used to select one hundred and twenty (120) rural women in Ogun state. The choice of rural areas in the study area was due to higher prevalence of poverty among women in the rural areas compared to those in the urban areas (Ali and Thorbecke, 2017; World Bank, 2019a; National Bureau of Statistics, 2020a).

Stage I involved the random selection of two out of the four Agricultural Development Project (ADP) zones in Ogun State which are Abeokuta and Ilaro zones. In stage II, three (3) blocks from each zone were randomly sampled making a total of six (6) blocks. Stage III involved the random selection of two cells per block to give a total of twelve (12) cells. In Stage (IV), one village per cell was randomly selected to give a total of twelve (12) villages while the last stage (Stage V) involved the random selection of 10 households per village. However, since the focus of the study is on women's time allocation, one woman from each rural household was purposively selected as the respondents for the study. Thus, a total of one hundred and twenty (120) rural women were interviewed.

Primary data was collected from the respondents with the aid of a semi-structured questionnaire complemented by interview guide. Descriptive statistics, Foster-Greer-Thorbecke (FGT) poverty index and Probit Regression Model were the analytical techniques used for data analysis.

Model Specification

Foster-Greer-Thorbecke (FGT) poverty index

Foster-Greer-Thorbecke (1984) index was used to measure the poverty status of the rural women in the study area. This technique was chosen due to its simplicity and ease of computation. Following Falola et al. (2015), Pelemo et al. (2020) and Mukaila et al. (2022), the FGT index is given as:

$$P\alpha = \frac{1}{N}\sum_{i=1}^{q}\left(\frac{Z-Yi}{Z}\right)\alpha$$

Where,

N is the sample size, q is the number of poor women, that is rural women below the poverty line. Z is the poverty line which was constructed as the two-third of the mean per capita income of the rural women (2/3 × mean per capita income). *Y*i is the income of i-th women. ∝ is the FGT parameters (degree of poverty aversion) which takes a value of 0 to measure poverty incidence or headcount, 1 to measure poverty depth or gap and 2 to measure poverty severity. In this study, no weight was attached to poverty, hence we consider only when α is 0, which is P_0.

Probit Regression Model

The probit model was used in analyzing the effects of time allocation on the poverty status of the rural women in the study area. The probit regression model was used due to binary response (Idowu et al., 2011; Adekunle et al., 2019). The specification is designed to analyze qualitative data reflecting a choice between two alternatives, which in this case, are the poor and the non-poor. The dependent variable takes the value of zero or one, where one represents being poor and zero otherwise. Therefore, given the dichotomous nature of the poverty status of the respondents in the study area and the cumulative normal probability distribution of the probit model, the probit regression model was therefore considered appropriate for this study (Liao, 1994; Uzunoz and Akcay, 2012). Following Oyekale et al. (2012), the probit regression model is specified as

$$Y = \alpha_0 + \alpha_j\sum_{j=1}^{8} Xj + ei$$

Where *Y* is the poverty status of the rural women (Poor = 1, 0 = otherwise), j = 1...8 and X are the explanatory variables. The choice of explanatory variables is informed from various studies on the determinants of poverty status among rural women (Adekunle et al., 2019; Onwuka et al., 2019; Mukaila et al., 2022; Muhammad et al., 2022).

The independent variables are:

X_1 = Time spent on farming activities (hours)

X_2 = Time spent on non-farming activities (hours)

X_3 = Time spent on house chores (hours)

X_4 = Age of the respondents (years),

X_5 = Marital status of the respondents (married = 1; otherwise =0)

X_6 = Educational level (no education =1, primary =2, secondary =3, Tertiary =4)

X_7 = Income of the respondents (₦)

X_8 = Household size (number of household members),

e_i = stochastic error term.

RESULTS AND DISCUSSION

Socioeconomic Characteristics of the Rural Women in the Study Area

The result of the socio-economic characteristics of rural women in the study area is presented in Table 1. Findings revealed that the mean age of the respondents is 36 years. This implies that majority (96.7%) of the rural women were young and within their productive age. The outcome of this study is similar to the findings of Ojimba (2012) and Muhammad et al. (2022), who reported that people in this age grade are often productive and economically active. As regards the level of education, analysis shows that most (52.5%) of the rural women lacked formal level of education, while about 47.5% of them had at least primary education. This implies that women especially those in the rural areas do not have enough access to education. This finding is synonymous with the findings of Mukaila et al. (2022), who reported in their studies that the level of education among the rural women was very low. Also, more than half (65.0%) of the rural women were married having an average household size of 4 persons. However, a significant proportion (60.8%) of these women have between four to six children within the family. The result further indicates that farm work was the major occupation of the rural women in the study area (46.7%), followed by artisans (35.0%) and those engaged in trading (18.3%) with the respondents having a mean income of ₦30,083.33 (USD 20.06) in the study area. This implies that majority of the respondents were low-income earners.

Table 1: Distribution of the respondents by their socio-economic characteristics

Variables	Frequency	Percentage	Mean ± SD
Age			
less than 30	45	37.5	35.70±9.21
31-40	41	34.2	
41-50	27	22.5	
51-60	3	2.5	
Above 60	4	3.3	
Educational level			
No education	63	52.5	
Primary	32	26.7	
Secondary	25	20.8	
Tertiary	-	-	
Household size			
1-3	38	31.7	4.04±1.06
4-6	73	60.8	
7-9	9	7.5	
Marital status			
Married	78	65.0	
Single	42	35.0	

Monthly income			
10000-20000	15	12.5	30,083.33± 7,474.98
20001-30000	79	65.8	
30001-40000	20	16.7	
40001-50000	6	5.0	
Occupation			
Farming	56	46.7	
Trading	22	18.3	
Artisan	42	35.0	

Source: Field survey, 2023

Time Allocation Structure Across Different Activities by the Rural Women

Table 2 presents the distribution of time allocation structure across different activities among the rural women in the study area. The result show that the mean time spent by rural women on farming and non-farming activities was 5.49 hours and 4.67 hours per day respectively. On the other hand, the result also shows that the average time spent by rural women on domestic work was 7.51 hours per day while about 4.52 hours per day was spent on leisure. This implies that the rural women allocate most of their time on domestic activities such as food preparation, childcare, washing, fetching of wood and water and other household chores. As regards time spent on productive work, findings revealed that between 4-5 hours per day is used on productive activities which include farming activities such as all activities related to agriculture such as planting, weeding, harvesting, livestock rearing etc and non-farming activities such as trading, hair making, cloth sewing etc. The outcome of this study agrees with the findings of Adekunle *et al.* (2019) and Vemireddy *et al.* (2021), who reported that women spend more time on house chores than on farm or non-farm work.

Table 2: **Distribution of the respondents by the time spent on different activities.**

Time Allocation Structure	Minimum	Maximum	Mean	Standard deviation
Farm activities	1	10	5.49	2.864
Non-farming activities	1	9	4.67	2.816
Household chores	4	5	7.51	1.502
Leisure	4	5	4.52	0.420

Source: Field survey, 2023

Poverty Status of the Respondents

The result of the analysis in Table 3, revealed that the incidence of poverty among the rural women in the study area was 0.5897 which signifies that about 58.9% of the rural women were poor. This implies that a larger proportion of the respondents were poor. However, recent study by Muhammed et al. (2022), reported a lower poverty incidence of 41% among the rural women contrary to Mukaila et al. (2022), who reported a higher poverty incidence 69.11%.

Table 3: Distribution of the respondents by their poverty status

FGT index	Mean values
Poverty incidence or head count ratio	0.589700

Source: Field survey, 2023

Effect of Time Allocation on the Poverty Status of Rural Women

The result of effect of time allocation on the poverty status of rural women using probit regression model is presented in Table 4. From the table, time spent on farming activities ($p<0.1$), non-farming activities ($p<0.05$) and time spent on household chores ($p<0.1$) by the rural women influenced their probability of falling into poverty. Furthermore, other factors such as education ($p<0.01$), income ($p<0.1$) and household size ($p<0.05$) also had a significant effect on the poverty status of the rural women in the study area.

From Table 4, the coefficient of time spent on farming activities such as crop production or livestock rearing was negative and significantly reduces the probability of being poor at 10%. This implies that the more time women spend on income generating activities such as farming, the higher their returns at the end of the production cycle. This can significantly reduce their poverty level and improve their welfare.

The coefficient of time spent on non-farming activities was also negatively and significantly reduces the probability of falling into poverty by 5%. This implies that as women devout more time to non-farming activities like hair making or trading, the lower their risk of being poor. This is because non-farm work involve day to day transactions which requires one to spend enough time in order to realize enough sales for the day. Hence, women who engage in these businesses need to increase their time availability in order to reduce the risk of being poor. The findings of this study are similar to the outcome of Adekunle et al. (2019), who reported that increases in the non-farm work time of women leads to reduction in the probability of household poverty.

The coefficient of time spent on house chores is significant (10%) and positively influences the probability of being poor. This implies that the more time women spend on household chores, the higher their chances of becoming poor. This may be due to the fact that women are responsibly mostly for performing household chores such as fetching of wood and water, cooking, food preparation etc in most African culture. Hence, they are more likely to spend most of their productive time engaging in these activities which in turn increases their vulnerability to poverty. Earlier study by Adekunle *et al*. (2019), confirmed that increases in the amount of time allocated to housework by women increases household poverty.

The coefficient of education is negative and significant at 1% level of significance indicating that being educated reduces the probability of falling into poverty. This implies that the more educated a woman becomes, the higher the chances of securing well-paying jobs in the cities thereby escaping poverty. The outcome of this finding agrees with Ayanwale (2012)**,** Abdullahi et al. (2015)**,** Adekunle *et al.* (2019) and Mukaila *et al*. (2021), who reported that increase in the years of formal education of women respondents lead to reduction in the probability of being poor.

The coefficient of income is negative and significant at 10%. This implies that as income increases, the probability of being poor reduces. This is because as income increases, people are able to afford

their basic needs such as food, clothing, access to health care and other needs and thus are less likely to experience poverty compared to low-income earners.

Furthermore, the coefficient of household size is positive and significant at 5% level of probability. This implies that there is a direct relationship between household size and poverty status among rural women. This could be attributed to the fact that larger household sizes would translate to more costs incurred by the women on food, children's clothing and other household needs. Since women spend less time on income generating activities, their earnings from such activities are usually low which may not be sufficient to cater for large household sizes. The outcome of this study is similar to the findings of Falola *et al*. (2015) and Mukaila *et al.* (2022), who reported that increase in household size increases the likelihood of rural women being poor.

Table 4: Effect of time allocation on rural women's poverty status

Variables	**Coefficients**	**Standard error**	**z-values**	**P>|z|**
Time spent on farming activities	-0.3278*	0.1748	-1.87	0.056
Time spent on non-farming activities	-0.8670**	0.3473	-2.49	0.024
Time spent on house chore	0.6488*	0.3398	1.91	0.056
Age	0.0053	0.0227	0.24	0.814
Marital status	-0.1877	0.5511	-0.34	0.733
Educational level	-0.7132***	0.2300	-3.10	0.002
Income	-1.85e-06*	1.10e-06	1.67	0.098
Household size	0.4045**	0.1887	-2.14	0.032
Constant	4.2726	2.919	1.46	0.143
Log likelihood = -42.59				
Likelihood Ratio chi^2 = 20.20				
Prob. > chi^2 = 0.00				
Pseudo R^2 = 0.1917				

Significant at 1% , 5% and 10% respectively
Source: Field Survey, 2023

CONCLUSION AND RECOMMENDATIONS

From the findings of this study, it can be concluded that rural women allocate more time to unpaid family work than investing it on income generating activities (such as farm work or non-farm work) hence the reason for their poverty status. Furthermore, time spent on farming and non-farming activities and time spent on household chores influenced the probability of the rural women being poor in the study area. Also, other determinant factors found to significantly influenced the rural women's poverty status were education, income and household size.

Hence, on the basis of this finding, it is recommended that increased access to and utilization of labor-saving technologies should be a top priority for development policies, programs, and projects in order to reduce the amount of time lost by rural women doing unpaid labor thereby giving them more time to engage in income generating activities that will reduce their poverty status.

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