# THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

## Gender Analysis of Time Use Patterns in Households in Ondo State, Nigeria

## Dr. Fasina Oluwatosin Oluwasegun

Associate Professor, Department of Agricultural Extension and Communication Technology, Federal Univechnoligy Akure, Nigeria

## Alabi Folasade

Postgraduate Student, Department of Agricultural Extension and Communication Technology, Federal University of Technology Akure, Nigeria

#### Abstract:

A gender-differentiated time use pattern is crucial to understanding the roles men and women play in the family and society at large. The study thus explored time use patterns among households in Ondo state Nigeria. A multistage sampling technique was used to select 120 households for the study. The data was analysed and presented using frequencies, percentages and charts. The results of the study give an in-depth understanding of what obtains across households in the study area. It further highlighted implications for the welfare of women and made recommendations for family living and policy.

**Keywords:** Gender, time use, domestic activities, recreation

#### 1. Introduction

The gender division defines women's and men's economic opportunities, and determines their capacity to allocate time for economically productive activities. Gender-differentiated time use patterns are affected by many factors including household composition and life cycle issues (i.e. age and gender composition of household members), seasonal and farming system considerations, regional and geographical factors, ease of access to water and fuel, availability of infrastructure, distance to key economic and social services such as schools, health centers, financial institutions and markets (World bank, undated). Social and cultural norms also play an important role both in defining and sustaining rigidity in the gender division of labour. This is most evident in the division of responsibilities between productive (market) and reproductive (household) work. In addition to their prominence in agriculture and in much of the informal sector, women bear the brunt of domestic tasks: processing foods crops, providing water and firewood, and caring for the elderly and the sick, this latter activity assuming much greater significance in the face of the HIV/AIDS pandemic. The time and effort required for these tasks, in the almost total absence of even rudimentary domestic technology is staggering.

One of the most important insights from gender analysis of time use in Sub-Saharan Africa is that there are synergies and short-term tradeoffs between and within market oriented and household-oriented activities, economic production, childbearing and rearing, and household community management responsibilities. These assume particular importance because of the competing claims on women's labour time in most environments. There are interconnections between rural development and transport (Barwell, 1996), between education, health and fertility, between girls' education and domestic tasks, and within the population/agricultural/environment "nexus" (Cleaver and Schreiber, 1994). Other critical interconnections illuminated by time use studies exist between the time spent (mainly by women and very young children) preparing and cooking meals in degraded and polluted environments as reflected in high levels of acute respiratory infections related to exposure to air pollutants (ZhangjianChen, et al., 2019).

The work burden on women and the disproportionate cost borne by women of reproductive age in the household economy not only limit the time women can spend in economic activities but restricts them (spatially and culturally) to activities compatible with their domestic obligations (Blackden and Morris Hyghes, 1993). That in turn leads to lower paying jobs more compatible with children (Buvinic and Rao Gupta, 1997). The review cites evidence from Malawi indicating that female farmers were inclined to limit their labour time in farm activities due to heavy commitment to domestic chores, while responsibility for children and housekeeping made it difficult for female heads to opt for regular or off-farm labour activities to increase their earnings because they must carry out their multiple roles simultaneously, and because the "household time overhead" is not dispensable.

The idea that poverty is a function of time as well as money is not new; as this was articulated by Vickery (1997) that time poverty and income poverty may reinforce each other with negative consequences for individual and household well-being. For example, the sheer drudgery and low productivity of many non-market tasks, which are time and labour-intensive, reduce the availability of time for household members engaged in such tasks to participate in more economically productive activities. Given that such tasks are primarily carried out by women, this means that women in particular are

less likely to be able to take full advantage of economic opportunities, to respond to changing market conditions and incentives, and to participate in income-generating activities. Time poverty impedes individuals' ability to expand their capabilities through education and skills development that could enhance economic returns in the market place. However, the question can also be asked in a different way: to what extent could more time spent working (but without making a larger share of the population time poor) help reduce poverty? The logic is then inverted, by showing that even if many men and women work a lot; there may be a reserve of time that if jobs were available, could be tapped to reduce consumption poverty.

#### 1.1. Time as a Resource

Time has been known to be very scarce for women especially women farmers, it contributes to land left uncultivated, farm operations that are not performed at the right moment and conversation means not undertaken (Awumbila and Momsen 1995). Generally, woman's productive activities on the farm compete for the time with her reproductive activities of bearing and raising children, managing the household and playing a role in community management. Lack of time can cause deterioration of the environment in terms of loss of available resources. This means women have to spend longer time obtaining these resources and have less time to spend on farming. This can also be one of the causes of declining food production because women in most parts of the world have a longer working day than men, most especially during the period of peak demand in the agricultural calendar when they are called upon to work for 18 hours per day (FAD – West and Central Africa Division, 1999). This combination of physiological demand as well as heavy agricultural labour has led to physiological stress and no wonder why the health of women in their reproductive years is worse than that of men (Jejeebhoy, 1998). This state has also contributed to the factors affecting subsistence production thereby increasing the rate of poverty.

#### 1.2. Problem Statement

The lack of data on time use and the omission of the household economy from conventional development planning mean that the picture of the development process is incomplete and our understanding of the labor supply of households is insufficient i.e. much of what we are or should be concerned with occurs in an invisible realm. There is therefore a tendency to make misleading assumptions about labor availability and labor mobility. Overlooking the differences in men's and women's contributions to "household time overhead" can lead to inappropriate policies which have the unintended effect of raising women's labor burdens while sometimes lowering those of men. Furthermore, as a community of policymakers and development practitioners, we often do not invest (or prioritize) in what is not visible: so, if the household economy is not visible to policymakers and planners, they are unlikely to prioritize investment in it. This means that we do not recognize the tradeoffs or positive links among different tasks and activities, and by extension do not focus on reducing or minimizing the tradeoffs and on building on the positive linkages.

It is important to examine time use for at least three reasons. First, time use data show what people actually do in their daily lives, and therefore provide important information on work and on labor allocation within households. Second, in doing this, they make apparent not only that there is a division of labor, in that different people do different things, but also that differences in how men and women use their time are of considerable importance in understanding poverty in the study area. Thirdly time allocation data reveal not only the substantial market economy contributions of men and women to community's development, but also the existence of a whole realm of human activity (household economy) that is largely invisible and uncounted in economic data and in the system of national accounts.

Examination of time use data therefore performs the critical important function of giving policymakers and development practitioners a much completer and more comprehensive picture of employment and labor effort than would otherwise be afforded by labor force data alone. This is done by making visible and providing quantified estimates of non-market contributions to total household production and welfare, alongside market-based work. Because these contributions are essential for family survival, it is important for policymakers and development practitioners to focus on them explicitly. Non-market labor is of particular importance from a gender standpoint, as the household economy is where women predominantly work. This study therefore aims to enhance the understanding of the roles played by men and women in household development.

## 1.3. Objectives of the Study

The general objective of the study was to conduct a gender analysis of the time use patterns in households in Ondo State. Specifically, the study,

- Ascertained The Socio-Economic Characteristics Of The Respondents In The Study Area;
- Identified The Specific Jobs Performed By Respondents Within And Outside Their Households; And
- Examined How The Respondents Allocated Their Time To Various Activities.

#### 2. Methodology

#### 2.1. The Study Area

The study was carried out in Ondo State of Nigeria. Ondo State was created in February, 1976 with Akure as its Capital. The state lies between latitudes 05° 45' and 07° 52'N and longitudes 40°20' and 06° 5'E. Its land area is about 15,500 square kilometers. Edo and Delta States bound Ondo State in the East, Ogun and Osun States in the West, on the North by Ekiti and Kogi States and to the south by the light of Benin and Atlantic Ocean. The state has eighteen (18) Local

Government Areas (LGAs) with a population of 3.4 million inhabitants (National Population Commission, 2006). Annual rainfall varies from 2000mm in the southern part to 1150mm in the northern extremes.

The state is tropical with two distinct seasons of rain and dry seasons. The raining seasons occur between April and October, while the dry season begins in November and last till April, although in recent times, minor attention is noticeable in rainfall regimes due to global climate change. Agriculture is the dominant occupation of the people of Ondo state providing income and employment opportunities for over 70% of the population. Arable crops cultivated are rice, cassava, maize, yam, beans and host of other vegetables. Tree crops grown are oil palm, cocoa, kolanut, forest trees of iroko and teak.

#### 2.2. Sources of Data

Primary data was used for this study. Data was collected with the aid of well-structured and pre-tested interview schedule. Information were sought on a number of variables which include the socio-economic characteristics of the respondents and gender division of time use on their different activities.

## 2.3. Sampling Techniques and Sample Size

A multi-stage sampling technique was employed using Ondo State Agricultural Development Programme administrative divisions. The state is divided into 2 Zones; Zone 1 with 8 Blocks and Zone 2 with 10 Blocks. A Block was purposively selected from each Zone to represent urban and rural households for this study. The blocks were Akure South Local Government Area (representing urban households) from Zone 1 and Ifedore Local Government Area (representing rural households) from Zone 2. Each Block has 8 Cells while each cell has 8 Groups; a Group is composed of 10 households. 3 Groups were randomly selected from each Zone which is equivalent to 60 households. In each household, the head and the spouse served as respondents. In all, the study focused on 6 Groups and a sample size of 120 respondents (20 respondents per Group).

## 2.4. Method of Data Analysis

The data that was generated were analyzed to achieve the stated specific objectives. Descriptive statistical tools used in the study included frequencies, percentages, bar charts and pie charts.

#### 3. Results and Discussions

#### 3.1. Socio-Economic Characteristics of the Respondents

#### 3.1.1. Age of the Respondents

This is presented in Table 1 which shows that 3.32% of the male and 10% of female respondents were below 31 years of age, 28.34% of male and 36.8% of female respondents were between the ages of 31-40 years, 45% of male and 36.6% of female respondents were between 41-50 years while 23.34% of the male and 16.7% of female respondents were above 50 years of age respectively. The total percentage reveals that 20% of respondents were above 50 years, 73.33% were middle aged (31-50 years) while 6.67% were below 31 years of age. The mean age of respondents was 44 years and it indicated that a larger percentage of the respondents are still energetic enough to be involved in activities that can enhance their income level.

	Male		Female		Total	
Age	F(n=60)	%	F(n=60)	%	F(n=120)	%
<31	2	3.32	6	10.00	8	6.67
31-40	17	28.34	22	36.80	39	32.50
41-50	27	45.00	22	36.60	49	40.83
>50	14	23.34	10	16.70	24	20.00

Table 1: Distribution of Respondents According to Age

#### 3.1.2. Religion of the Respondents

From the data; 81.7% of male and 88.3% of female respondents were Christians while 18.3% of male and 11.7% of female respondents were Muslims respectively. In all, 85% of the sample size were Christians while 15% were Muslims as shown in Table 2. It is therefore expected that most of the male respondents will be more considerate in helping their wives with house chores in conjunction with their religious doctrine.

	Male		Female		Total	
Religion	F(n=60)	%	F(n=60)	%	F(n=120)	%
Christianity	49	81.70	53	88.30	102	85.00
Islam	11	18.30	7	11.70	18	15.00

Table 2: Distribution of Respondents according to Religion

## 3.1.3. Household Size

The predominant household size was that of 5-7 members which accounted for 67.5% of the sample. Twenty five percent had household size of 2-4 persons while 7.5% had household size of 8-10 persons as presented in Table 3. Most of the respondents had large household size which means more mouth to feed, cloth, shelter and cater for therefore substantial amount of household income will be consumed.

	Male		Female			
Household size	F(n=60)	%	F(n=60)	%	F(n=120)	%
2-4	14	23.40	16	26.60	30	25.00
5-7	43	71.60	38	63.40	81	67.50
8-10	3	5.00	6	10.00	9	7.50

Table 3: Distribution of Respondents according to Household Size

#### 3.2. Dependency Ratio of Respondents

This is the proportion of the non-working population (adults above 65 and children below 14 years) to the working adult in the sampled population. The working adult accounted for 47.5%, non-working adults were 6.3% while the children accounted for 46.2% of the sampled population as indicated in Table 4. Therefore, the dependency ratio is approximately ratio 1:1 which means that consumption will be high as a result of large number of dependents. This will have adverse effect on the income.

	Male	Female		
House Structure	Freq.	Freq.	Total	%
Working Adult	124	126	250	47.53
Non-Working Adult	15	18	33	6.3
Children	111	132	243	46.2
Total	250	276	526	100

Table 4: Distribution of Respondents According to Dependency Ratio

#### 3.3. Educational Status

Results in Table 5 indicate that 5% of male and 1.7% of female respondents had non-formal and adult education respectively, 16.7% of male and 5% of female respondents had primary education, 23.3% of male and 30% of female had secondary education while 50% of male and 61.6% of female had tertiary education respectively. In all, 3.33% of the sample size had non-formal and adult education respectively, 10.83% had primary education, 26.67% had secondary education while 55.83% had tertiary education. This reveals that larger percentage had formal education and in civil service for instance, levels of education are synonymous with income level.

	Male		Female		Total	
Educational Status	F(n=60)	%	F(n=60)	%	F(n=120)	%
Non-formal	3	5.00	1	1.70	4	3.33
Adult education	3	5.00	1	1.70	4	3.33
Primary education	10	16.70	3	5.00	13	10.83
Secondary education	14	23.30	18	30.00	32	26.67
Tertiary education	30	50.00	37	61.60	67	55.83

Table 5: Distribution of Respondents According to Educational Status

## 3.4. Respondents' Involvement in Social Organizations

Majority (85% male and 83.3% female) of the respondents as shown on Table 6 did not belong to any social organization while 15% of male and 16.7% of female respondents were involved in social organizations respectively. In all, 15.83% of the sampled population was involved in social organizations.

	Male		Female		Total	
Social organization	F(n=60)	%	F(n=60)	%	F(n=120)	%
Not involved	51	85.00	50	83.30	101	84.17
Involved	9	15.00	10	16.70	19	15.83

Table 6: Distribution of Respondents According to Social Organization

## 3.5. Respondents' Types of Social Organization

Results in Table 7 shows that 3.3% of male and 11.7% of female respondents were involved in Religious organizations, 10% of male and 1.7% of female respondents belong to Occupational organizations while 1.7% of male and 3.3% of female respondents were involved in Recreational organizations. This indicates that most of the respondents are very religious as 7.5% of 15.83% of those involved in social organizations belong to the religious organisations.

	Male		Female		Total	
Type of social organization	F(n=60)	%	F(n=60)	%	F(n=120)	%
None	51	85.00	50	83.30	101	84.17
Religious	2	3.30	7	11.70	9	7.50
Occupational	6	10.00	1	1.70	7	5.83
Recreational	1	1.70	2	3.30	3	2.50

Table 7: Distribution of Respondents according to Types of Social Organization

## 3.6. Respondents' Social Organization Membership Status

This reveals that 8.3% of male and 5% of female respondents were ordinary members while 6.7% of male and 11.6% of female were executive members in their various social organizations as shown in Table 8.

	Male		Female		Total	
Membership status	F(n=60)	%	F(n=60)	%	F(n=120)	%
None	51	85.00	50	83.20	101	84.17
Ordinary member	5	8.30	3	5.00	8	6.67
	4	6.70	7	11.60	11	9.17
Executive member						

Table 8: Distribution of Respondents according to Membership Status

#### 3.7. Respondents' Gender Division of Time Use on Various Activities

## 3.7.1. Respondents' Involvement in Domestic Indoor Activities

345

Domestic indoor activities performed by the respondents were Cleaning house and compound, Bathing for children, Laundry, Ironing, Dusting, Mopping floors, Making beds/changing linens, Kitchen cleaning, Bathroom cleaning, Taking out trash, Meal planning, Food preparation, Setting the table, Eating and drinking, Dishwashing, Putting away clean dishes, Preserving foodstuffs, Feeding pets, Cleaning walls and cabinets, Cleaning windows, Putting away purchases and Assisting children with their assignments. As shown in Table 9, women outnumbered men in most of these activities; men only outnumbered women in Ironing and assisting children with assignments while there was a tie in Eating and Drinking. Another fact that was discovered is that women perform most of these activities relatively on daily basis as compared to men and women spent longer time carrying out these activities as shown in Figure 1.

				Male								Female				
Activities	None	%	1-3	%	4-6	%	Everyday	%	None	%	1-3	%	4-6	%	Everyday	%
Cleaning house and compound	31	51.7	25	41.6			4	6.7	15	25	24	40	3	5	18	30
Bathing for children	57	95	1	1.7			2	3.3	28	46.7	2	3.3			30	50
Laundry	36	60	24	40					14	23.3	41	68.3	2	3.3	3	5
Ironing	18	30	39	65			3	5	21	35	35	58.4	3	5	1	1.7
Dusting	47	78.3	11	18.3			2	3.3	36	60	21	35			3	5
Mopping floors	58	96.7	1	1.7			1	1.7	27	45	33	55				
Making beds/changin g linens	54	90	2	3.4	1	1.7	3	5	24	40	20	33.3			16	26.7
Kitchen cleaning	57	95	2	3.4			1	1.7	12	20	21	35	3	5	24	40
Bathroom cleaning	47	78.3	8	13.3	1	1.7	4	6.7	12	20	31	51.7	2	3.3	15	25
Taking out trash	41	68.3	18	30			1	1.7	32	53.3	24	40	2	3.3	2	3.3

				Male								Female				
Meal planning	57	95	2	3.4			1	1.7	38	63.3	7	11.7			15	25
Food preparation	55	91.7	1	1.7			4	6.7	8	13.3			1	1.7	51	85
Setting the table	56	93.3			1	1.7	3	5	27	45			1	1.7	32	53.3
Eating and drinking	0	0	0	0	0	0	60	100	0	0	0	0	0	0	60	100
Dishwashing	52	86.7	1	1.7			7	11.7	26	43.3					34	56.7
Preserving foodstuffs	59	98.3	1	1.7					43	71.7	10	16.6	1	1.7	6	10
Putting away clean dishes	54	90	1	1.7			5	8.3	52	86.7					8	13.3
Feeding pets	55	91.7	4	6.7					55	91.7	2	3.3			3	5
Cleaning walls and cabinets	58	96.7	2	3.3					48	80	12	20				
Cleaning windows																
Putting away purchases	59	98f. 3	1	1.7					54	90	6	10				
Assisting children with assignments	60	100							55	91.7	5	8.8				

Table 9: Distribution of Respondents According to Domestic Indoor Activities Frequencies

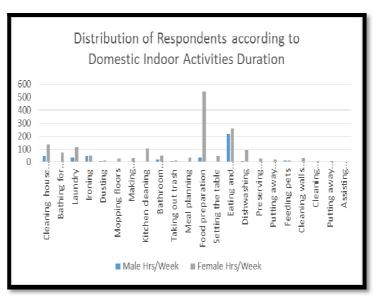


Figure 1: Distribution of Respondents According to Domestic Indoor Activities Duration

## 3.7.2. Respondents' Involvement in Domestic Outdoor Activities

Domestic Outdoor Activities performed by the respondents were fetching of water and firewood, roof and gutter maintenance, lawn care, gardening, automotive cleaning, shopping, food and household goods purchases and other household errand commuting. The involvement of both sexes in these activities was relatively the same as well as the frequencies as shown in Table 10. However, women still spent longer time performing most of these activities as shown in Figure 2.

				Male								Female				
Activities	None	%	1-3 times	%	4-6 times	%	Everyday	%	None	%	1-3 times	%	4- 6times	%	Everyday	%
Fetching water and firewood	42	70	2	3.3	1	1.7	15	25	41	68.3	7	11.7			12	20
Roof and gutter maintenance	56	93.3	4	6.7					55	91.7	5	8.3				
Lawn care	38	63.3	21	36.6					46	76.7	13	21.7	1	1.7		
Gardening	48	80	11	18.3	1	1.7			54	90	6	10				
Automotive cleaning	43	71.7	16	26.7			1	1.7	50	83.3	8	13.3			1	1.7
Shopping	53	88.3	7	11.7					27	45	32	53.4			1	1.7

				1			1		1		1	ı	1		1	
				Male								Female				
Food and household goods purchases	52	86.7	8	13.3					46	76.7	14	23.3				
Other household errand commuting	56	93.3	4	6.7					59	98.3	1	1.7				
Activities	None	%	1-3 times	%	4-6 times	%	Everyday	%	None	%	1-3 times	%	4- 6times	%	Everyday	%
Fetching water and firewood	42	70	2	3.3	1	1.7	15	25	41	68.3	7	11.7			12	20
Roof and gutter maintenance	56	93.3	4	6.7					55	91.7	5	8.3				
Lawn care	38	63.3	21	36.6					46	76.7	13	21.7	1	1.7		
Gardening	48	80	11	18.3	1	1.7			54	90	6	10				
Automotive cleaning	43	71.7	16	26.7			1	1.7	50	83.3	8	13.3			1	1.7
Shopping	53	88.3	7	11.7					27	45	32	53.4			1	1.7
Food and household goods purchases	52	86.7	8	13.3					46	76.7	14	23.3				
Other household errand commuting	56	93.3	4	6.7					59	98.3	1	1.7				

Table 10: Distribution of Respondents According to Domestic Outdoor Activities Frequencies

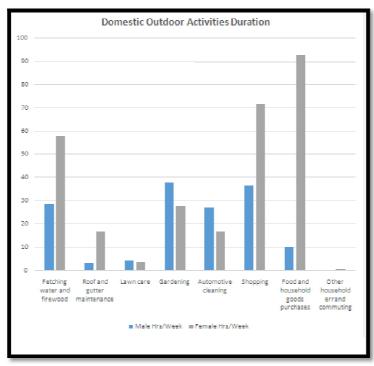


Figure 2: Distribution of Respondents According to Duration Spent in Domestic Outdoor Activities Duration

### 3.7.3. Respondents' Involvement in Social, Recreational and Care Giving Activities

The Social, Recreational and Care giving Activities were attending social meetings/gatherings, attending religious meetings, walking, playing/training with pets, grooming and veterinarian visits, accompanying household member to doctor/dentist, watching television, listening to radio, caring for elderly ones and sleeping/relaxing. Respondents' involvement and frequencies of performing these activities was relatively the same except for accompanying household member to doctor/ dentist and watching television where women spent more time than the men as shown in Table 11. It is clearly seen in Figure 3 that men spend longer time to sleep and to attend social gathering than women

Male												Female						
Activities	None	%	1-3	%	4-6	%	Everyday	%	None	%	1-3	%	4-6	%	Every day	%		
Attending social meetings/gatherin	39	65	21	35					47	78.3	13	21.7						
Attending religious meetings	3	5	40	66.7	7	11.6	10	16.7	3	5	35	58.3	18	30	4	6.7		
Walking, playing/training with pets	57	95	3	5					56	93.3	4	6.7						
Grooming and veterinarian visits																		
Accompanying household member to doctor/dentist	60	100							59	98.3	1	1.7						
Watching television	38	63.3	9	15	5	8.3	8	13.3	6	10	8	13.3	10	16.6	36	60		
Listening to radio	13	21.7	7	11.7	2	3.4	38	63.3	14	23.3	4	6.6	4	2.2	38	63.3		
Caring for elderly ones	13	21.7	6	10	1	1.7	40	66.7	32	53.3	5	8.3	3	5.1	20	33.3		
Sleeping/Relaxing	0	0	0	0	0	0	60	100	0	0	0	0	0	0	60	100		

Table 11: Distribution of Respondents According to Social, Religious, Recreational and Care Giving Activities

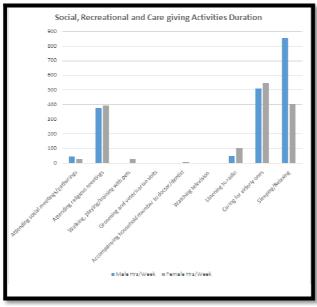


Figure 3: Distribution of Respondents According to Duration of Time Spent in Social, Recreational and Care

## 3.8. Respondents' Involvement in Agricultural Activities

Agricultural Activities performed by the respondents were Land Preparation, Planting or sowing, Weeding, Harvesting and threshing, Processing and Marketing of farm produce. Male and Female Involvement and frequencies of performing these activities was relatively the same as shown in Table 13. However, male respondents spend longer time carrying out these activities (see Figure 4).

				Male								Female				
Activities	None	%	1-3	%	4-6	%	Everyday	%	None	%	1-3	%	4-6	%	Everyday	%
Land Preparation			60	100					1	1.7	59	98.3				
Planting or sowing	55	91.7	2	3.3	2	3.4	1	1.7	57	95	3	5				
Weeding	57	95	2	3.4	1	1.7			57	95	3	5				
Harvesting and threshing	47	78.3	6	10	3	5	4	6.7	55	91.7	5	8.3				
Processing	51	85	4	6.6	4	2.2	1	1.7	55	91.7	4	2.2	1	1.7		
Marketing of farm produce	47	78.3	3	5			10	16.7	55	91.7	5	8.3				

Table 12: Distribution of Respondents according to Agricultural Activities Frequencies

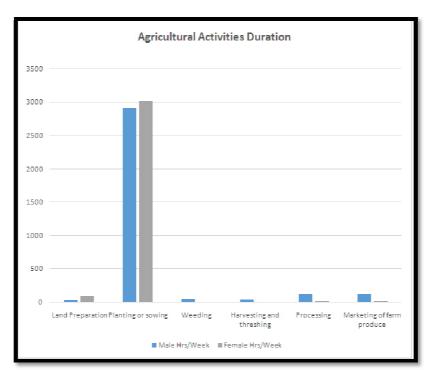


Figure 4: Distribution of Respondents According to Duration Spent in Agricultural Activities

#### 4. Conclusion

The study investigated time use patterns in households on gender basis in Ondo State, Nigeria. The study revealed that women work for longer hours on domestic indoor and outdoor activities and have fewer hours of rest than men. Men also had more time for social and recreational activities than women. Men however spent longer duration of hours in agricultural activities than women.

## 5. Recommendations

On the basis of the findings of this study, the following measures are recommended to create some level of equilibrium of time use between the genders.

- Husbands are advised to render helping hands to their wives especially in the area of domestic work so that they can also have enough time to rest thereby reducing deterioration of women's health.
- Family planning programmes should be adopted so as to have moderate household size thereby reducing work load on women in domestic activities.
- Government should create more employment opportunities through training and sensitization for women because many of the respondents were well learned but not gainfully employed especially the females.

## 6. References

i. Awumbila, M. and J.H. Momsen. 1995. Gender and the environment: Women's time use as a measure of environmental change. Global Environmental Change: Human and Policy Dimensions 5:4, 337-346.

- ii. Barwell, I. (1996) Transport and the Village: Findings from African Village Level Travel and Transport Surveys and Related Studies. World Bank Discussion Paper, no. 344. The World Bank. Washington, DC.
- iii. Blackden C.M. and E. Morris-Hughes (1993): Paradigm Postponed: Gender and Economic Adjustment in Sub-Saharan Africa, Technical Note No. 13, Poverty and Human Resources Division, Technical Department, Africa Region, The World Bank.
- iv. Buvinic, M. and G. Rao Gupta (1997): "Female-Headed Households and Female-Maintained Families: Are They Worth Targeting to Reduce Poverty in Developing Countries." Economic Development and Cultural Change 45:2, 259–280.
- v. Cleaver, K.M. & Schreiber, G.A. (1994). Reversing the spiral: The population, agriculture and environment nexus in sub-Saharan Africa. Washington, DC: World Bank.
- vi. Jejeebhoy, S. 1998. Implications of domestic violence for women's reproductive health: What we know and what we need to know. In Kanna, J., et al (eds) Reproductive Health Research: The New Directions, Biennial Report 1996-97 WHO/HRP. pp. 138-149. Geneva: WHO.
- vii. ZhangjianChen<sup>a1</sup>LiangliangCui<sup>b1</sup>XiaoxingCui<sup>c</sup>XinweiLi<sup>d</sup>KunkunYu<sup>b</sup>KesanYue<sup>e</sup>ZhixiangDaifJingwenZhou<sup>b</sup>GuangJia<sup>a</sup>JiZ hang<sup>b</sup> (2019) The association between high ambient air pollution exposure and respiratory health of young children: A cross sectional study in Jinan, China Science Total Environment Vol. 656, pp740-749
- viii. World bank (undated) Gender and Economic Adjustment in Sub-Saharan Africa. Africa Technical Department. World Bank. World Bank, 1818 H Street NW, Washington D.C. 20433 Retrieved from http://siteresources.worldbank.org/INTFINDINGS/685507-1161268713892/21097500/find19.htm on March 21, 2019