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Daily time-use effectiveness among women farmers in Edo State, Nigeria

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ABSTRACT

Women farmers tend to have busy daily activity profile and their effectiveness with the use of time resources is in doubt. This study assessed the daily time-use effectiveness and constraints to time use among women farmers in Edo State, Nigeria. Multi-stage procedure; comprising purposive and simple random sampling techniques was used to select 120 women farmers from the three agricultural zones in Edo State, Nigeria. Data were collected using structured questionnaires administered through interview schedules and described with frequency, percentages and mean count while Pearson's Product Moment Correlation was used to analyse data. Findings show that the majority of women farmers were married (90.8%), more had primary education (34.1%), and about 55.8% earned < ₦100,000 per annum. Wide gaps existed between the time expected to accomplish tasks and the actual time used (±). Respondents perceived higher effective time-use for more reproductive than productive activities ($\bar{x} \geq 2.50$). Age (r = 0.309; p = 0.000), income (r = 0.267; p = 0.002), household size (r = –0.351;p=0.000) and social association membership (r = –0.103; p = 0.043) were the identified correlates of effectiveness in time use. Constraints to time-use effectiveness included inadequate capital ($\bar{x} = 3.50$), dearth of labour-saving technologies ($\bar{x} = 3.34$) and gender stereotyping ($\bar{x} = 3.32$). Development, dissemination and adoption of affordable time and labour-saving technologies could enhance the time-use effectiveness of women farmers.

HIGHLIGHTS

- This study investigated how effective Edo women farmers use their time daily
- They spent extra time on household reproductive and productive activities
- They spent less time on self-related activities such as self-care, sleeping, etc
- They were constrained to be time-use effective due to inadequate capital and so on

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1. Introduction

Women have reproductive and productive roles to play which are socially ascribed in most African countries. Traditionally, the roles of men and women in farming and household activities differ. Assefa *et al.* (2014) explained that gender roles are categorized into productive, reproductive and community roles. Productive roles include all tasks which contribute to the income and economic welfare of the household and community. These include the production of goods and services for income or subsistence. Both women and men perform a range of productive roles in agriculture which include crop production, livestock rearing, processing and marketing. Reproductive roles are those activities carried out to reproduce and care for the household. Activities such as childbearing, cooking, washing, cleaning, nursing, and taking care of the sick in a household. These are mostly done by women. Community roles are those activities undertaken at the community level to meet the communities' basic needs. Provision and maintenance of scarce resources of collective consumption such as water, health care and education. Within the reproductive roles are some tasks that are related to self or personal care or well-being of the women such as eating, body care, rest or relaxation.

Women farmers play vital roles in food production, processing and marketing in Nigeria (Rahman *et al.,* 2004). They are the backbone of the agricultural sector, accounting for 60 to 80 per cent of agricultural labour and are responsible for 80 per cent of food production (Mgbada, 2000). Despite these activities; women continue to have systematically poorer command over a range of productive resources(Staudt, 2003; Anderson *et al.,* 2021; Asif & Sanzidur, 2021). Nevertheless, a complex set of rights and obligations reflecting social and religious norms prevail within rural communities. These dictate the division of labour between men and women and act as constraints to women farmers. Both men and women contribute significantly to agricultural production yet, there are gaps in access to these agricultural resources that differ (Deere & Doss, 2006; Food and Agriculture Organization [FAO], 2010; Agarwal, 2018). However, they are constrained by poor access to resources, taking new opportunities, including new markets, by their limited educational background, poor networks and mobility restrictions. They, therefore, depend on their labour and that of their households. Thus they spend more hours working on their farms since they cannot afford hired labour and labour-saving devices (LSD) or equipment. They might not be conscious of effective time use/management or aware of LSDs due to inadequate extension. A review by the World Bank (2010) revealed that in Ghana, only two per cent of female-headed households and twelve per cent of male-headed households received extension advice. In Tanzania, the result was slightly higher (20% for women and 27% for men-headed households). Time is a resource and its effective management is germane to the attainment of goals and productive living.

Time is a unique resource in that everyone is given an equal amount of 24 hours each day which should be well invested. Time use or management is the process of planning and controlling how much time to spend on specific activities. Good time management enables an individual to complete more tasks in a shorter period and lowers stress. This can lead to a successful endeavour. Aeon *et al.,* (2021) defined time management as a form of decision making used by individuals to structure, protect, and adapt their time to changing conditions. Time sense is the skill of estimating how long a task will take to accomplish and this will help to be more realistic in planning activities. It helps prevent the frustration of never having quite enough time to accomplish tasks (Winton, 2008). Goal setting is the skill of deciding where you want to be at

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the end of a specific period. Goal setting gives direction for the morning, day, week and lifetime. It involves deciding on priorities and keeping goals specific and realistic to be effective. All actors in the agricultural sector including women are expected to play their roles and use time effectively to achieve the desired goal. Igbokwe-Ibeto and Egbon (2012) argued that treating time at work or business time in isolation from other time is unrealistic because of the reciprocal influence of one over the other. Therefore, productive and reproductive activities should be effectively performed within the framework of the available time.

When something is deemed effective, it means that it has an intended or expected outcome, or produces a deep, vivid impression and has the capability of producing the desired result. Fraser (2000) defined effectiveness as a measure of the match between stated goals and their achievement. Effectiveness in daily time-use or management will imply accomplishment of daily routine activities within 24hours with some level of satisfaction. According to Al Hila *et al.* (2017), effectiveness implies that you know how to set priorities and can focus your efforts on what needs attention. Using time effectively may require some training or retraining, determination and practice. Covey *et al.,* (2004) assert that there is no way to control the time the best you can do is take charge of yourself in the framework of time, investing yourself in those things that matter most in your life. Osawe (2017) asserts that effective time management not only affects the productivity of employees but also helps to cope with stress, conflicts and pressure more efficiently. Women farmers require assistance concerning skills and technologies for effective time use or management.

Women constitute the majority of smallholder farmers, providing most of the labour and managing a large part of the farming activities daily (Assefa *et al.,* 2014). Unlike most other production enterprises, agriculture is inextricably time-dependent and seasonal (Dillon & Anderson, 2004; Assefa *et al.,* 2014). The bridging of the actual-potential productivity gap presents one of the most effective means of promoting efficient agricultural productivity and enhancing overall economic development. Women have continued to spend time playing their roles at household and community levels. Conscious planning might not have been made to prioritize activities, plan and effectively utilize the available time by women.

The theoretical framework for this study draws from the time and motion studies by Taylor (1947) Scientific Management Theory where jobs were broken into units and specific time was assigned to complete each. This is with the view of learning how to accomplish tasks with shorter motions and time to save workers' energy to increase output and productivity. The theory emphasizes time management, education, training and specialization to optimize the productivity of workers. In the context of women farmers, technologies and LSDs could serve as the tools for reducing time and motion considering the enormous tasks women have to accomplish on daily basis. Interventions in education and extension services could afford the opportunity for enhanced productivity.

Despite the important roles women farmers play in agricultural production, it is observed that research and documentation on their activities are very limited (Cook *et al.,* 2012). Studies on time-use or management among women farmers are limited. However, in respect of time management and the performance of the workforce, Osawe (2017) found that public servants are faced with time management problems which have become a hindrance to effective service delivery. According to Aeon *et al.,* (2021), developing time management skills early on in life can create a compound effect whereby people acquire a variety of other skills with the ability to make time. Furthermore, Kamaruddin *et al.,* (2020) found that time management positively and significantly influenced female job performance in Malaysia. They noted that time management seems to enhance well-being in particular and life satisfaction to a greater extent.

This study is specifically important to provide evidence on time-use among women farmers. Their constraints to effective time-use could form the basis for needs identification. They could be constrained by limited time, poor access to resources, inadequate capital, and gender stereotyping among others. Pierotti *et al.,* (2022) found that time constraints limit women's earnings from farming and make the availability of money a determinant of what women can farm.

In Edo State like in other parts of Nigeria, women are industrious homemakers who equally engage in productive activities. Women farmers' attainment of and satisfaction with goals achieved on a daily basis which translates to the effectiveness of their time-use, is of concern. This could affect their participation in development programmes, productivity, and health among others. In cases where suitable labour-saving devices (LSDs) or technologies for women are available, most of them are either unaware of such devices or do not have money to buy them. They, therefore, continue to use the old manual methods that are associated with drudgery which decreases their speed of work and productivity (World Bank, 2008).

The broad objective of the study was to assess the daily time-use effectiveness among women farmers. The specific objectives were to (1) describe the socio-economic characteristics of women farmers in Edo State, Nigeria, (2) describe the daily activity profile, the expected and actual time-use for daily activities performed by women farmers, (3) describe daily time-use for productive, reproductive, community and personal or self-related activities, (4) examine women farmers perceived effectiveness in time-use and (5) identify the constraints to time-use effectiveness among women farmers in the study area.

1.1 Hypothesis of the Study

H_{O1}: There is no significant relationship between the socio-economic characteristics and time-use effectiveness of the respondents in the study area.

2.0 Methodology

2.1 Description of study area

The study was carried out in Edo State, which is one of the 36 States in Nigeria. The State has 18 Local Government Areas(LGAs) and the State capital is Benin City. By the population census of 2006, the state has a total of 3,218,332 people. The State has a land mass of 19,794 square kilometres and a population density of 180/km^2 (470/sq m^2). It lies within the coordinates 05°44'N to 07°34'N latitude 05°4'E to 06°45'E. Edo state is low lying except toward the northern axis where the northern and Esan plateau range from 183 metres in Kukuruku hill to 672metresSomorika hills. It has boundaries with Kogi State to the North, Delta State to the East and South, and Ekiti and Ondo States to the West. The climate is typically tropical with two major seasons; the wet (rain) and dry (hot) seasons. The wet season lasts from April to November and the dry season from December to March. The annual precipitation is between 1500 mm and 3000 mm with about 200 rainfall days. The state is blessed with two major vegetation belts namely: the rainforest in the South and Central part while the green savannah is the predominant in the Northern part. The State is made up of 3 major ethnic groups namely the Binis, Esan and Afemai (Edo-State Government, 2007). The major agricultural activities of the state include the cultivation of crops such as yam, cassava, maize, rice, cocoa, oil palm, rubber, pineapple, cashew, wood products, rearing of livestock and fisheries as well as marketing and processing.

2.2 Sampling Techniques and size

Multistage sampling procedure was used to select the sample from the population for the study. The first stage involved the selection of the three (3) agricultural zones of Edo State. The second stage involved the random selection of three (3) LGAs, one per zone; Ovia North-East (Edo South), Esan West (Edo Central) and Akoko-Edo (Edo North). The third stage involved the random selection of two (2) communities from each LGA to give a total of 6 farming communities. Finally, 20 women farmers were randomly selected from each community to give a total of 120 respondents.

2.3 Data collection

A Focus group discussion involving 8 women from Ugbogiobo, a community not included in the sample, was used at the pre-survey stage to chart the expected 24-hour daily activity profile (Young, 1994; Chambers, 1994; Sinkaiye, 2011) of women farmers (Fig.1). The activities or tasks are highlighted from waking to sleeping and categorized into productive (red), reproductive (green), personal/self-care (yellow) and community (blue) activities of the women as depicted by the legends. The activity time was collected nearest five minutes values. This constituted the expected mean time for the survey. Fig.1 presents the daily activity profile of the respondents. The daily (24hours) activity profile shows how women distribute their time to accomplish their tasks. Productive activities-Engagement in livelihood activities-time devoted to farming, and post-harvest activities, preparation for the following day (33%) Reproductive activities- household and family care activities- such as cooking/preparation of meals, sweeping and cleaning, arranging for the following day; eating, sleeping and relaxing/resting were categorized as personal and self-care activities although they are reproductive activities (65%). Community-related activities-average time devoted to community activities per day; meetings, community work and visiting community members — this was found to be minimal (2%).

The primary data were collected using a structured questionnaire administered through interview schedule. The questionnaire was designed to address the specific objectives of the study. The content of the questionnaire was validated by experts in the Department of Agricultural Economics and Extension Services and the Edo State Agricultural Development Programme (ADP).

2.4 Data analysis

Data collected were analyzed using descriptive statistics; frequency count, percentages, means and standard deviation. Pearson's Product Moment Correlation (PPMC) analysis was used to test the hypothesis at 5% significant level. Time-use was measured in minutes (min). Perceived effectiveness was measured on a 4-point Likert scale with very effective, effective, somehow effective and not effective that yielded 4, 3, 2 and 1 points, respectively. Similarly, constraints to effective time-use were measured on a 4-point Likert scale with very serious, serious, somehow serious and not serious yielding 4, 3, 2 and 1 points, respectively. The mean values ≥2.5 are considered effective and serious.

3.0 Results and Discussion

3.1 Socio-Economic Characteristics of Women Farmer

The results in Table 1 show that most of the respondents were middle-aged between 30-40 years (59.2%), with a mean of 37 years, and the majority of the women farmers (90.8%) were married. This result agrees with the finding of Onosanya (2007) that most crop farmers are married, and Soyebo *et al*. (2005) that agriculture is very much practised by married people to make ends meet and cater for their children. More (40.8%) of the respondent had a family size of between 4 and 5 members with a mean of 6 persons. This figure indicates the availability of farm labour force among respondents in the area. This agrees with the finding of

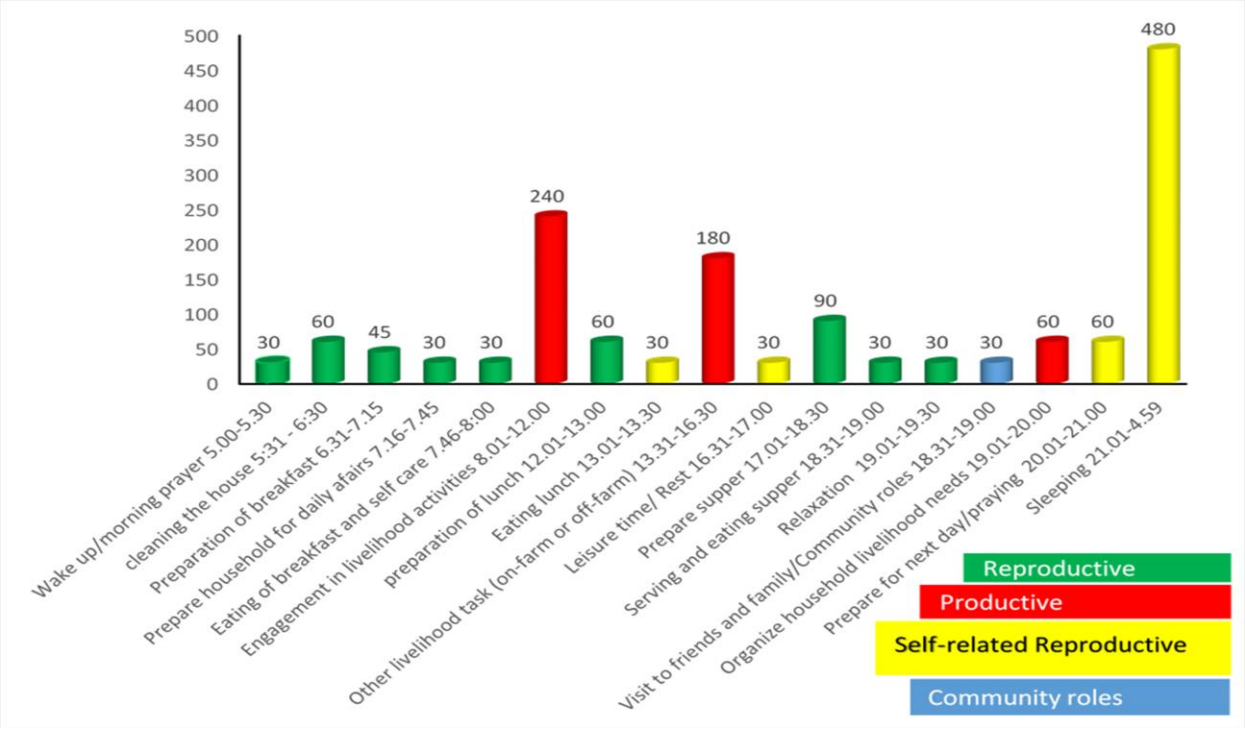

Figure 1. The sequential expected mean time for daily activities of women farmers

Table 1. Socio-economic characteristics of women farmer

Characteristic	Frequency	Percentage (%)	Mean
Age (years)			
≤ 30	15	12.5	
31-40	71	59.2	
41-50	20	16.7	37.1 years
>50	14	11.6	
Marital status			
Married	104	86.7	
Single	16	13.3	
Family Size			
1-3	29	24.2	
4-6	49	40.8	
7-9	35	29.2	6 persons
≥10	7	5.8	
Educational Qualification			
No formal education	38	31.7	
Primary school	41	34.2	
Secondary school	25	20.8	
Certificate or its equivalent	10	8.3	
Tertiary education	6	5.0	
Farming Experience			
≤ 10	25	20.8	
11-20	56	46.7	
21-30	21	25.8	
>30	8	6.7	
Farm size (ha)			
≤1	91	75.8	
2-3	21	17.5	1.25 ha
>3-4	7	5.8	
>4	1	0.8	
Social Group membership			
No	12	10.0	
1-2	68	56.7	2 groups
3-4	29	24.2	
>4	11	9.1	
Agricultural enterprise engage			
Crop	113	94.2	
Animal-Livestock & Fisheries	7	5.8	

Source: Field survey, 2018.

Bzugu *et al*. (2008). A significant proportion (34.1%) of the respondents had primary school education and (38%) had no formal education indicating that the respondents are fairly educated which could affect time usage. Low education might make it difficult for the extension service to impart on the farmer Ogundiran (2013). About half (54.2%) of the respondents had a farm size of between 1-2 ha, a mean farm size of 1.25 ha and most of the respondents (94.2%) engaged in crop production. More of the respondents (56.7%) belonged to one or two social groups hence, could prove useful in sourcing and utilizing relevant agricultural information. Membership could also be a means of gaining access to information relating to inputs, credit, marketing links and aid from the government and non-government organisations.

3.2 Mean expected time and actual time and difference in time used/spent by the respondents

Table 2 shows the mean expected and actual time-use and mean difference in the daily activities of women farmers. The result shows that the farmers spent more time than expected (extra time denoted with "–") for reproductive activities such as

Table 2. Activities Performed by Women Farmers/Daily Activity profile

Activities	Mean Expected Time (Min)	Mean actual time used (Min)	Mean Difference (MD)
Productive			
Engagement in livelihood activities	240	345	–105
Engage in more livelihood/ productive activities (on-farm or off-farm)	180	180	00
Organize household livelihood needs	60	90	–30
Grand mean	**480**	**615**	**–135**
Reproductive			
Wake up/morning prayer	30	10	+20
Sweeping and cleaning the house and surroundings/Go to the farm	60	30	+30
Preparation of breakfast	45	60	–15
Serve and prepare children and household for daily affairs	30	45	–15
Afternoon cooking/preparation of lunch (on-farm or off-farm)	60	120	–60
Prepare supper	90	150	–60
Serving and eating supper	30	10	+20
Relaxation	30	10	+20
	375	**435**	**–60**
Community roles			
Visit friends and family and Community roles	**30**	**30**	**00**
Self-related			
Eating lunch	30	5	+25
Leisure time/ Rest	30	10	+20
Prepare for next day/praying	60	75	–15
Sleeping	480	300	+180
	630	**420**	**–210**

Effective (mean > 2.50); Source: Field survey, 2018

preparation of breakfast, preparing household for daily affairs with a mean difference (MD) of –15 min, engagement in livelihood productive activities (MD = –90 min), preparation of lunch (MD = –60 min), care for the household after daily engagement (MD= –45 min) and preparing supper (MD= –60 min). The women might be spending more time than expected because they consider the activities crucial to their households. This is a reflection of the multiple tasks performed by women which agrees with the finding of Young (1994) and Assefa *et al.* (2014) that women seem to have multiple roles as a result of a division of labour in the society which include productive, reproductive and community activities. The activities that are related to food preparation entail a host of other activities which occur on regular basis but might not be performed on daily basis such as the gathering of firewood, grinding pepper, washing, shelling, pounding, picking, shredding and slicing ingredients, fetching water and other tasks involved in food preparation. This shows that women multi-task in order to meet up and the result shows that they spend more time than expected. This is an indication that some of the tasks involved can be better accomplished mechanically using labour saving devices such as peelers and blenders, rather than manual as observed by FAO (2010). The women could be more productive if a conducive environment by way of policies and programmes aimed at developing rural areas are in place such as provision of social amenities like pipe-borne water, good roads, use of clean, cheap and fuel-efficient stoves or gas cookers to discourage the use of firewood. Women farmers could be more time-use effective and productive. Aeon *et al.* (2021) posited that learning a skill takes time, and if time management helps people make the time to learn a skill, then time management stands to dramatically enrich people's lives. Substantial time was also expended on productive activities which include clearing, weeding, planting, feeding animal, transportation and marketing which might not be on daily basis. They might need helping hands from other family members; husbands and the children. There might be gender division of labour which might have apportioned the reproductive tasks to women. In the spirit of equity and gender equality, males (adults, youth and children) could help out.

The actual time spent on most daily activities was more than expected except for self-related/personal activities like self-care (+40 min), eating (MD = +10 to 15 min), observing leisure/siesta (MD = +20 min), relaxation MD = (+20 min), visits (+20 min), sleeping (+180 min). This is an indication that overall, time for personal issues like self-care, rest and sleep was sacrificed for the reproductive and productive activities because they are crucial to the livelihood of the women farmers. This implies that the women

Table 3. Perception of women farmers on time-use effectiveness

Activities	Mean Effectiveness	SD
Wake up/morning prayer	1.58	0.562
Sweeping and cleaning the house and surrounding	2.64*	0.768
Preparation of breakfast	2.52*	0.542
Self care	1.61	0.581
Eating of breakfast	1.31	0.559
Prepare children and household for daily affairs	2.56	0.498
Engagement in livelihood activities/Productive	1.60	0.540
Afternoon cooking/preparation of lunch	3.16*	0.438
Prepare for the return of children and other household members	2.31	0.438
Eating lunch	1.42	0.512
Observing leisure time/ siesta	1.02	0.494
Prepare supper and serve household	3.34*	0.534
Eating supper	1.33	0.550
Relaxation	1.56	0.550
Community roles, visit friends and family	1.62	0.562
Organize household livelihood needs/Productive	2.60*	0.611
Preparing for the next day and praying	1.84	0.574
Sleeping	1.37	0.579

Source: Field survey, 2018; * Effective (mean ≥2.50)

farmers hardly take sufficient time to rest, care for themselves or even eat respectably. These are likely to affect their health, physical and social outlooks as well as productivity.

The grand mean values of the expected and actual daily time used for each category of tasks accomplished by the respondents are also presented in Table 2. The table shows that the mean time expected and actual mean expended on reproductive, productive and personal activities differed with actual time expended higher for all the categories. The differences were 100, 100 and 250min respectively meaning that the shortfalls in reproductive and productive time were made up from personal/self-related activities such as sleep/relaxation and self-care. From the data obtained, negligible time (30 min) apportioned to community tasks was the actual mean expended. This is an indication that women farmers might not have been participating actively in community activities. Efficient and affordable labour saving devices could suffice in reducing time spent on tasks. In addition, the help of other family members where not rendered or limited will be highly required to relieve the women.

3.3 Perception of women farmers on time-use effectiveness

Table 3 shows the perception of women farmers on their effectiveness in daily time-use. The activities they perceived to be time-use effective were the preparation of supper ($\bar{x}$ =3.34), preparation of lunch ($\bar{x}$ =3.16), cleaning of surroundings ($\bar{x}$ =2.64), organising household livelihood needs ($\bar{x}$ =2.60) and preparation of breakfast ($\bar{x}$= 2.64). Most of these activities were reproductive that have to do with family life. The mean values are marginal. The farmers' perception of time-use effectiveness could be attributed to their ability to play the role of getting household meals and related tasks done properly, although more time than expected was spent on each activity which is an indication that they might be facing some challenges. The women farmers perceived that they were more effective in reproductive activities than productive ones. This could be the reason why they multitask. However, they spent more time on the reproductive activities to the detriment of productive activities despite the importance of income generation and household food security. Perception of not being effective with time used for productive activities/livelihood engagements could imply that they are faced with serious challenges preventing them from attaining their perceived goals of food security and poverty alleviation. Aeon *et al.* (2021) found that time management enhances well-being and in particular life satisfaction. The extension service could build the capacity of women in effective time management, which could enhance the opportunity for creating time to learn additional skills for a better life. Daniel and Santeli (2020) found that there is a positive relationship between the organizational performance and effective time management.

3.4 Constraints to time-use effectiveness of women farmers

Table 4 shows the constraints on the time-use effectiveness of women farmers. From the table, most of the constraints were serious including inadequate capital ($\bar{x}$ = 3.50), gender stereotyping or discrimination($\bar{x}$ = 3.32), dearth of labour-saving equipment($\bar{x}$ = 3.34), division of labour between men and women ($\bar{x}$ = 2.70), inability to afford hired labour($\bar{x}$ = 2.68), cannot afford labour-saving devices/ equipment (LSE) ($\bar{x}$ = 2.65), religion and traditional barriers($\bar{x}$ = 2.62) and lack of government assistance ($\bar{x}$ = 2.71), poor access to credit facilities ($\bar{x}$ = 2.53), low level of education($\bar{x}$ = 2.58), poor access to Agricultural Extension service ($\bar{x}$ = 2.28). Inadequate capital could have contributed to the inability to afford hired labour, not being able to afford LSDs and poor access to credit facilities. Agarwal (2018) found that higher female agricultural productivity is contingent on a variety of factors such as technical training and support and credit availability. Access to Agricultural Extension services and education could enhance effective management and awareness, access and adoption of affordable LSDs and technologies. Thakar and Rajpura (2021) found that the use of labour-saving tools among

Table 4. Constraints to women farmers in time-use effectiveness

Constraints	Mean	S.D
Low level of education	2.58*	0.453
Dearth of labour-saving equipment	3.34*	0.425
Religion/tradition burdens	2.62*	0.460
Division of labour between men and women and inequality	2.70*	0.551
Gender stereotyping/discrimination	3.32*	0.663
Poor access to credit facilities to purchase equipment	2.53*	0.587
Poor access to Agricultural Extension advice/service	2.28*	0.518
Inadequate capital	3.50*	0.712
Unable to afford hired labour	2.68*	0.693
Difficulty in combining farm and house activities	1.33	0.539
Poor road and high cost of transportation	1.50	0.601
Poor Climate conditions	1.48	0.852
Poverty/cannot afford labour saving devices/ equipment (LSE)	2.65*	0.704
Shortage of labour	1.18	0.463
No government policy to assist women farmers	2.51*	0.526
Inadequate government assistance	2.71*	0.603

Source: Field survey, 2018*Mean ≥ 2.50 = Serious

women farmers was not satisfactory due to the lack of awareness. Gender stereotyping and insensitivity could have aggravated the consequences of the division of labour to cause inequality, thus poor access of women to production resources including capital, technologies, education and extension services among others. This is corroborated by Pierotti *et al.* (2022) in which women's household responsibilities and off-farm work were found to limit their farm labour. This will affect the productivity of women farmers.

3.5 Relationship between socio-economic characteristics and effectiveness of time-use among women farmers

Table 5 shows the PPMC results of the relationship between socio-economic characteristics and effectiveness of time-use among women farmers at 0.05 level. From the table, there was a significant relationship between age (r = 0.309; p < 0.000) which had a positive correlation with time-use effectiveness. This implies that the older the women farmers, the more effective they perceived they were in time-use meaning that age affected how women farmers effectively use their time. The older women might have fewer infants and dependants to cater for. Income (r = 0.267; p < 0.000) also had negative significant correlation with time use effectiveness. This implies that women farmers who were higher-income earners used time more effectively. This could mean that they use the income to advantage like acquiring LSDs, paying for services and the ability to hire labour. Household size (r = -0.351; p < 0.000) and association membership (r = -0.103; p < 0.043) had negative relationship with time-use effectiveness. This might be connected to the younger women having more tasks to perform or the inability to manage time effectively. Older women, with small family sizes, less association membership and higher income were more effective with time use. This could mean that those who could afford hired labour and LSDs are likely to use time more effectively.

Table 5. Relationship between Socioeconomic Characteristic and Effectiveness in time-use among Women Farmer

Independent variable	Coefficient	Probability/level
Age (years)	0.309*	0.000
Association membership (Nos)	–0.103*	0.043
Income (₦)	0.267*	0.002
Family size (ha)	–0.351*	0.000
Level of education	0.066	0.521
Farming experience (years)	0.005	0.960

* Significant at 0.05%

3.6 Relationship between socio-economic characteristics and effectiveness of time-use among women farmers

Table 5shows the PPMC results of the relationship between socio-economic characteristics and effectiveness of time-use among women farmers at 0.05 level. From the table, there was significant relationship between age (r = 0.309; p < 0.000) which had a positive correlation with time-use effectiveness. This implies that the older the women farmers, the more effective they perceived they were in time-use meaning that age affected how women farmers effectively use their time as reported by Daudlu *et al.,*(2009). The older women might have fewer infants and dependents to cater for. Income (r = 0.267; p < 0.000) also had negative significant correlation with time use effectiveness. This implies that women farmers who were higher-income earners used time more effectively. This could mean that they use the income to advantage like acquiring LSDs, paying for services and the ability to hire labour. Household size (r = –0.351; p < 0.000) and association membership (r = –0.103; p < 0.043) had negative relationship with time-use effectiveness. This might be connected to the younger women having more tasks to perform or the inability to manage time effectively. Older women, with small family sizes, less association membership and higher income were more effective with time use. This could mean that those who

could afford hired labour and LSDs are likely to use time more effectively.

4.0 Conclusions

The women farmers use a substantial time for household reproductive and productive activities than expected. They made up by spending less time on personal or self-related activities such as self-care, sleeping, relaxation and socializing. The women perceived more time-use effectiveness and satisfaction in reproductive/household care-related activities than productive activities. They were constrained to be time-use effective due to inadequate capital, dearth of simple and affordable LSDs, gender stereotypes and poor rural infrastructures among others. The older women with small family sizes, less association membership and larger income perceived that they were more time-use effective.

Recommendations

The followings recommendations are made:

1. Simple, efficient, low cost and affordable technologiesLSDssuch as grinders, graters, peelers, planters and weeders should be developed and disseminated to women farmers by the extension service of Edo State ADP to encourage adoption. This will enhance their effective time-use to improve productivity and income.
2. Government and NGO agricultural development agencies could encourage women to actively participate in farming through the provision of capital and subsidized inputs and other incentives that could ameliorate the challenges they face.
3. Formal education should be encouraged among the women farmers to make them acquire more knowledge for better-informed decision making on time management. Effective time management could make room for women to acquire more life skills for a better life.
4. The need to encourage women farmers to plan their time-use, prioritise activities, observe rest, self-care, adequate sleep and eat in a relaxed state should be stressed to women farmers. This is because they sacrifice personal care issues to gain time for the accomplishment of important household activities.
5. Adequate credit facilities should be made available and accessible to women farmers to procure inputs andLSDs for enhanced effective time-use and productivity in both productive and reproductive activities.
6. The extension service should ensure adequate awareness and education to change the attitude of people towards gender stereotyping and inequality. All household members should be encouraged to get involved in household productive and reproductive activities to alleviate the sufferings of women and make them more productive to reduce poverty and food insecurity.

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