ASSESSMENT OF HOME GARDENING ON THE WELFARE OF RURAL HOUSEHOLDS IN EGBEDA LOCAL GOVERNMENT, OYO STATE, NIGERIA

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ABSTRACT
Backyard farming has been one of the routes to sustainable food availability and accessibility for households. The study investigated the contributions of involvement in home gardening to the welfare of rural households in Egbeda Local Government Areas of Oyo state. A two-stage sampling procedure was used to select 120 respondents for the study using an interview schedule. Data on respondents' social-economic characteristics, involvement in home gardening, benefits derived from home gardening and welfare status were collected and analysed using percentages, frequency, mean, Chi-square, and Pearson Product Moment Correlation at $\alpha_{0.05}$. Result shows that the respondents' mean age, household size and monthly income were 43.0±13.0 years, 5.0±3.0 persons and N145,000 respectively. Most of the respondents were female (52.1%), married (79.5%) and had tertiary education (53.0%) while the most involved home gardening was cultivation of Corchorus ($\bar{x}$ =1.57) which was high for 55.6%. The benefits derived from home gardening were easy source of fresh food ($\bar{x}$ =1.66) and better nutrition security ($\bar{x}$ =1.61) and was high for (62.4%) of the respondents. Result from welfare domain shows that the mostly consumed food item by the respondents was Rice ($\bar{x}$ =3.36) with highest expenditure been on Food items ($\bar{x}$ =₦95,000); with high welfare status for 55.6%. A significant relationship existed between respondents' marital status (χ^2=11.321), age (r=0.357), household size (r=0.207), involvement in home gardening (r=0.299), benefits derived (r=0.205) and respondents' welfare status. The study concluded that the respondents had better welfare status based on their involvement in home gardening. Hence, home gardening should be encouraged for better household nutrition.
Keywords: Home gardening, Food items, Backyard farming, Nutrition security

INTRODUCTION

Home gardening (Backyard farming/ Kitchen /Farmyard/Compound/Homestead gardens) has been described as the farming of a small area of land which may likely be very close to the household or within trekkable distance from the family home (Oladele, Emeghara, Ayodele, Ishola, Awobona and Olukotun, 2020). Backyard agriculture is the cultivation of crops and rearing of animal with the motive of making food available for the households within the vicinity of farmers dwelling place; it is said to be a lifestyle of making food available and accessible at the home stead by tilling the land for crop production and domestication of some animal in or close to the farmers' compound. Backyard farming has been said to be one of the routes to sustainable food availability and accessibility for households in urban and rural communities (Crow, 2021).

According to the observation of Rick 2022, home gardening is one of the most convenient means to practice agriculture as the concept has come with a lot of ease in relation to space, time and finance among others. The act could be described as a conscious effort made by an individual to grow and harvest fruits (Orange, Guava, Mangoes, Cashew, Pear, African cherry, Pawpaw among others), food crops (Yam, Cassava, Maize, Cocoyam, Potatoes) and vegetables (Tomatoes, Pumpkin, Okra, Amaranthus, Bitter leaf, Garden egg, Cucumber, chocorous among others) even on available and accessible small area of land (Oladele et al, 2020). Studies have shown that backyard farming is been carried out at the individual comfort zone especially in developing nation using uncompleted building, small portion of land at the backyard or compound, use of broken domestic containers, flower vase among others (Crow, 2021). It is done with the consciousness of preventing household domestic pests/predator from invading the garden or by putting up the very maximum effort in place to protect the animals from been attacked by predators and thieves. However, researchers and some concerned Non-Governmental Organisation (NGOs) like the Food and Agricultural Organisation of the United Nations (FAO), have observed the need for farmers and households to practice a kind of garden where both crops and livestock (Domestic fowl, Duck, Geese, Goat, Sheep among others) are kept in a properly managed manner to ensure year-round access to farm produce with minimal resource input for the household welfare (Adeosun, Nnaji and Onyekigwe, 2020 and Adeniyi and Adebayo, 2021).

However, involvement in home gardening could come with several benefits from continuous provision of some food crops (sustainably) for healthy eating, access to fresh organic foods, keeping of farm animal of high welfare status, ability to save certain amount of money and enablement to maintain a good environment. Other benefits include access to fresh air and vitamin D, close interaction with nature as the crop and animal grows, opportunity to exercise the body, the ability to combat food insecurity by the provision of food for the household with minimal available and accessible resource input, which in turn boost the earning and household welfare among the farmers (Oladele *et al*, 2020; Crow, 2021 and Rick, 2022)

Household welfare could be described as the access of an individual in a community to economic, high-quality, and enough food and non-food products of the household members for their daily needs (Ibrahim, Hassan, and Kamaruddin, 2018). However, poor welfare in homes is synonymous with abject poverty which will prevent an individual in a household to have access to enough food and sustainable livelihood that can maintain a healthy and better life (Oladele *et al*, 2020). Welfare at household level is a subset of the national level and it requires that all individuals and households have access to sufficient food either by producing it themselves or by generating sufficient income to purchase it and getting necessary items needed in the home as household (Adeosun, Nnaji and Onyekigwe 2020)

According to Mulubrhan, Kibrom, Luca and Jordan (2021), Corona virus increases the severity of food scarcity on households especially as a result of lockdowns experienced hence, the need for individual household to combat the impact through efficient involvement in home gardening for better access to healthy foods. However, little attention has been given to the contribution of involvement in home gardening on household welfare. Therefore, it becomes imperative to promote home gardening among homes; especially in rural communities as an instrument that may curb the menace of food insecurity, unemployment and some life-threatening activities (banditry, kidnapping and land grabbing) that is presently reducing farmers accessibility to their farmlands outside the vicinity of their homes.

Considering the aforementioned, an investigation into the contribution of the involvement in home gardening on the welfare of households in Egbeda local government of Oyo state. This study assessed the respondents' socio-economic characteristics like age, sex, religion, educational status, household size, monthly income, primary occupation, and social group belonged; ascertained the level of involvement in home gardening, identified the benefits derived from home gardening and examined the respondents' welfare status. The study hypothesised that there is no significant relationship between the respondents' selected socio-economic characteristics; the level of involvement in home gardening and the welfare status of the respondents.

METHODOLOGY

The study was carried out in Egbeda Local Government Area of Oyo state, Nigeria with latitude 70 21' - 80N and longitude 40 02'- 40 28'E and covers the land area of 191 sq. Km. The area is predominantly occupied by farmers who practice either on subsistence or commercial basis. The local government area has 11 wards with the notable rural villages being Erunmu, Alugbo, Osegere, Owo

Baale, Kasumu/Ajia, Adeyadi, Ayede, Fayo, Koloko and Olorisa Oko among others. The research was carried out using a two-stage sampling procedure to select 120 respondents from the study population of households practicing home gardening in Egbeda Local Government. The first stage was purposive selection of six (50%) wards (Kasumu/Ajia, Adeyadi, Erunmu, Osegere, Ayede and Olorisa Oko) that predominantly engaged in home gardening. In the second stage, list of households in the selected wards was compiled and 25% of households who engaged in home gardening across the selected wards was randomly selected to give a sample size of 120 respondents for the study. Percentages, frequency, mean, chi-square and Pearson Product Moment Correlation at $\alpha_{0.05}$ were used to analyse the data collected.

The welfare domain was operationalised by finding the number of times respondents consumed specific food items on monthly basis and the amount they spend on food and non-food items. Household monthly food items consumed was captured using the scale of (1-2 times (1), 3-4 times (2), 5-6 times (3), 7-8 times (4), 9-10 times (5), 11 times and above (6). The mean of each item was found and was used to rank the monthly food item consumed in descending order, while the monthly expenditure was measured in naira. The mean of each of the expenditure item (Food items, school fees, books, non-books items, transportation, family health, clothing among others) was captured and was used to rank the monthly expenditure in descending order. Thereafter, the scores from monthly food items consumed and the monthly expenditure on food and non-food item was standardized and was used to categorise the respondents as having better or poor welfare status using above and below the mean criterion. The respondents' involvement in home gardening was measured on a 3-point scale of highly involved (2), involved (1) and not involved (0). Index of involvement was captured and was used to categorise the respondents into low and high level of involvement in home gardening respectively based on the index mean of 16.7. The benefits derived from involvement in home gardening was measured with the scale of high benefits (2), moderate benefits (1), and not a benefit (0). The mean was used to rank the benefits derived in descending order, while the index of the benefit derived was used to categorize the respondents into high level and low level of benefits using above and below the mean criterion. The respondents' socio-economic characteristics like age, religion, household size, social association belonged among others was measured accordingly.

RESULTS AND DISCUSSION
Socioeconomic characteristics

Result in Table 1 shows mean age of the respondents was 43±13 years. This implies that most

of the respondents were still in their active and productive years which might likely make them to be involved in home gardening practices to improve their welfare status. The result in Table 1 further shows that most of the respondents involved in home gardening were married (79.5%), female (52.1%), practice Christian religion (61.5%) and were literate (53.0%) with mean household size and monthly salary being 5±3 persons and N145,000 respectively. The involvement of women in home gardening may be an indication that women are more concerned with household food security as backyard farming could ease the women's existing emotional stress attached with household responsibilities (Adeosun, Nnaji and Onyekigwe, 2020; and Adeniyi and Adebayo, 2021). However, the respondents' level of education implies that the respondents could understand the concept and the

practices of home gardening better for enhanced involvement in home gardening. The greater married proportion as indicated by this result implies that most of the respondents had family responsibility that could make them get involved in home gardening to increase the family income and feeding pattern in the study area (Adeniyi and Adebayo, 2021). The mean monthly income implies that the respondents might have enough to finance the farm input needed for the backyard farming.

Result of social association in Table 1 shows that most (75.2%) of the respondents were not associated with any social organisation which might be due to greater attention and time that needed to be devoted when involved in home gardening. The different livelihoods of the respondents indicate differ sources of income in the study area (Adeniyi, 2020).

Table 1: Socioeconomic characteristics of the respondents

Variables	Percentage	Mean	SD
Age		43 years	13 years
22-34	29.1		
35-47	35.9		
48-60	25.6		
61-73	6.8		
74-87	2.6		
Sex			
Male	47.9		
Female	52.1		
Religion			
Christianity	61.5		
Islam	38.5		
Educational status			
No formal education	33.3		
Primary education	6.0		
Secondary education	7.7		
Tertiary education	53.0		
Marital status			
Single	18.8		
Married	79.5		
Widow	1.7		
Household size		5 persons	3 persons
1-3	24.8		
4-6	60.7		
7-9	10.3		
10-12	2.6		
13-17	1.7		
Monthly income		#145,000	#140,000
2,000-142,000	65.8		
142,001-287,001	18.8		
287,002-429,002	6.8		
429,003-571,003	7.7		
571,004-700,000	0.9		
Social association			
Yes	24.8		
No	75.2		
Occupation			
Farming	5.1		
Trading	24.8		

Variables	Percentage	Mean	SD
Artisan	17.9		
Civil servant	34.2		
Banking job	7.7		
Medical practitioner	7.7		
Lawyer	0.9		
Students	1.7		

Source: Field survey, 2021

Involvement in home gardening

Table 2 reveals that the mostly cultivated crop were Corchorus (Ewedu) ($\overline{x}$ =1.57), tomato ($\overline{x}$ =1.41) and celosia (Soko) ($\overline{x}$ =1.29); with least cultivated crops being pumpkin (($\overline{x}$ =0.76), yanrin ($\overline{x}$ =0.67) and eggplants ($\overline{x}$ =0.66) respectively. This implies that backyard farmers focused more on vegetables probably because of the short gestation or maturation period of these vegetables, they are also convenient to grow and are mostly used on a daily basis in the household (Adeosun, Nnaji and Onyekigwe, 2020). However, according to the findings of Idiku (2019) farmers or households need training on locally consumed vegetables like ewedu, tomatoes and celosia for the all-year-round production of vegetable. Nevertheless, most of the respondents least cultivated pumpkin, yanrin and eggplants respectively in the study area. Further result in Table 2 shows that most of the respondents had high level (55.6%) of involvement in home gardening. This is in line with the findings of Oladele et al (2020) that reported high level of household involvement in home gardening in a similar study carried out.

Table 2: Respondents involvement in home gardening

Crop Type	Botanical Name	Mean
Jute leaf (Ewedu)	*Corchorus olitorius*	1.57
Tomato	*Lycopersicon esculentum*	1.41
Bitta leaf	*Vernonia amygdalina*	1.29
Celosia (Soko)	*Celossia Argentina*	1.29
Onions	*Allium sepa*	1.26
Carrot	*Daucus carot*	1.24
Melon	*Cucumeropsis mannil*	1.23
Amaranth (Tete)	*Amaranthus hybridus*	1.23
Okra	*Ablemoschus esculentus*	1.22
Solanecio (Woroowo)	*Solanecio biafrae*	1.05
Sweet pepper	*Capsicum spp.*	0.97
Ebolo	*Crassocephalum rubens*	0.88
Pumpkin	*Telfaria occidenta*	0.76
Wild Lettuce (Yanrin)	*Taraxacum officinale*	0.67
Eggplants	*Solanm melonge*	0.66
Level of Involvement		**%**
Low involvement		44.4
High involvement		55.6

Source: Field survey, 2021

Benefits derived from involvement in home gardening.

The result in Table 3 shows that the most benefit derived by the respondents from their involvement in home gardening was the easy means of accessing fresh foods ($\overline{x}$ =1.66) which was closely followed by better nutrition opportunity ($\overline{x}$ =1.61) and better care for the children ($\overline{x}$ =1.59). However, the least benefits derived was incentive prospect ($\overline{x}$ =1.12). This implies that the respondents have a good number of reasons that could actively keep them in backyard farming especially the one that focuses on nutrition security as opined by Oladele et al, 2020; Crow, 2021 and Rick, 2022.

Table 3: Benefits derived from involvement in home gardening

Benefits Derived	Mean
Easy source to fresh food	1.66
Better Nutrition	1.61
Better care for Children	1.59
Better housing acquired	1.58
High Self confidence	1.50
Provision of formal education	1.41
Employment Opportunities	1.37
Access to financial support	1.31
Improved technical skills on farming	1.30
Mentorship opportunity	1.29
Improved self-esteem	1.29
Exposure to new farming ideas	1.28
Access to basic infrastructures	1.21
Access to credit facilities	1.14
Incentive opportunity	1.12
Level of benefit derived	**%**
Low benefit	36.6
High Benefit	62.4

Source: Field survey, 2022

Welfare status of respondents
Monthly household food items consumption

Result of food items consumed by the respondents as presented in Table 4 shows that the most consumed food items in the study area were rice ($\bar{x}$ =3.36), meat ($\bar{x}$ =3.16) and plantain ($\bar{x}$ =2.87) with the least monthly consumed food item been cocoyam ($\bar{x}$ =1.52). This implies that the most consumed carbohydrate and protein source food item at household level were rice and meat respectively.

Table 4a: Monthly household food items consumption

Food items	Mean
Rice	3.36
Meat	3.16
Plantain	2.87
Bread	2.86
Egg	2.84
Vegetables	2.81
Beans	2.60
Amala	2.38
Semo	2.38
Garri	2.33
Yam	2.19
Maize	2.06
Iyan	2.04
Fish	1.88
Eba	1.84
Fufu	1.71
Cocoyam	1.52

Source: Field survey, 2022

Monthly household expenditure on items

Result on monthly expenditure (Table 4b) shows that the item with the highest expenses was food (N 95,000) which was followed by school fees (N 93,000) and clothing (N 38,000) while the item with the least expenditure was house rent (N 6,875). This implies that feeding takes the lion share of the monthly household expenses and further suggests that accommodation is cheaper in rural communities. However, the food items taking greater proportion of the expenditure is the least expected result; as the respondents were expected to have a considerable access to food items from the farm gate, nevertheless, it could still be said from the result in Table 4a showing the most consumed food items being rice and meat which implies that the rate of production of the duo food items in the study area were low. Result in Table 4b further shows that most (55.6%) of the respondents had better welfare status in the study area. This could reflect higher monthly

15

income earned by the respondents and this could translate to the respondents having a better welfare status in the study area. This is in tandem with the work of Mulubrhan e*t al* (2021) and Oladele, Emeghara, Ayodele, Ishola, Awobona and Olukotun, (2020) that reported better welfare status of household that involved in home gardening especially during the Covid-19 era.

Table 4b: Selected household monthly expenditure in Naira

Expenditure on Items (Naira)	Percentage	Mean	SD
Food items		95,000	90,000
2,000-92,000	55.6		
92,001-182,001	26.5		
182002-272,002	15.4		
≥272,003	2.5		
Education (School fees and other levies)		93,000	90,000
3,000-93,000	57.3		
93,001-183,001	25.6		
183,002-273,002	12.0		
≥273,003	5.0		
Books		33,000	40,000
1,000-41,000	70.1		
41,001-81,001	21.4		
≥81,002			
Non-book school items (School uniform, bags and shoes)		22,000	25,000
1,000-26,000	75.2		
26,001-51,001	17.9		
≥51,002	6.67		
Transportation		19,000	25,000
600-25,600	82.1		
25,601-50,601	8.5		
≥50,602	9.2		
Family health		23,000	30,000
800-30,800	76.1		
30,801-60,801	11.1		
≥60,802	12.5		
Clothing (Non-school)		38,000	40,000
800-40,800	59.8		
40,801-80,801	30.8		
≥80,802	9.1		
Home Appliances		35,000	40,000
1,000-41,000	65.8		
41,001-81,001	24.8		
≥81,002	9.4		
House Rent		6,875	8,300
25,000-100,250	61.5		
100,251-200,251	27.4		
≥200,252	10.8		
Communication		22,000	30,000
300-30,300	77.8		
30,301-60,301	15.4		
≥60,302	6.7		
Recreations/leisure		24,200	30,000
1,000-31,000	79.5		
31,001-61,001	11.1		
≥61,002	9.2		
Social responsibilities		23,000	30,000
200-30,200	75.2		
30,201-60,201	13.7		
≥60,202	10.0		

Expenditure on Items (Naira)	Percentage	Mean	SD
Religious activities		17,050	20,000
200-20,000	79.5SS		
20,201-40,201	10.3		
≥40,202	10.3		
Welfare status Level	**%**		
Poor welfare status	44.4		
Better welfare status	55.6		

Source: Field survey, 2022

Welfare status of respondents
Relationship between respondents' selected variables and welfare status

Result on Table 5 shows that a significant relationship existed between respondents' religion (χ^2=4.070), marital status (χ^2=11.321), age (r=0.357), household size (r=0.205), benefits derived from home gardening, involvement in home gardening (r=-0.299) and respondents' welfare status in the study area. This implies that religion, age, household size, marital status, benefits derived from home gardening and involvement in home gardening influenced the welfare status of the respondents as it was with the research result of Adeosun, Nnaji and Onyekigwe, 2020. This means that higher involvement in home gardening could increase the standard of living of the respondents and this could make their welfare status to increase and vice-versa in the study area (Oladele, Emeghara, Ayodele, Ishola, Awobona and Olukotun, 2020). However, respondents' sex and social association do not have any notable influence on the welfare status of the respondents in the study area.

Table 5. Relationship between respondents' selected variables and welfare status

Variables	r-value	
Age	0.357*	
Household size	0.205*	
Involvement index	0.299*	
Benefits index	0.205*	
Variables	**χ^2 –value**	**Df**
Religion	4.070*	1
Marital status	11.321*	2
Social association	0.0171	1
Sex	0.210	1

Source: Field Survey, 2012 *p ≤0.05 level

CONCLUSION AND RECOMMENDATIONS

The study concludes that age, years of education, household size, religion, marital status do inform the level of involvement in home gardening while the involvement in backyard farming is directly proportion to their welfare. The involvement in backyard farming gives the respondents direct access to fresh food that promote food security while food items and education forms the bulk of the household expenditure. The study recommends that home gardening practices should be encouraged in homes for better household nutrition and; should be orientated towards wealth creation.

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