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URBAN WOMEN PARTICIPATION IN VEGETABLE GARDENING IN ONDO SENATORIAL DISTRICT OF ONDO STATE, NIGERIA

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ABSTRACT

The study examined urban women participation in vegetable gardening and specifically delved into assessing the socio-economic characteristics of women engaged in urban gardening, the level of participation of the women and social roles they played. Primary data for the study was gathered through the use of a well-structured questionnaire administered on 140 female urban vegetable farmers to obtain relevant information on vegetable production in the study area. The data was analyzed using both descriptive and inferential statistics; mean, frequency counts, percentages while Spearman's rank correlation was used to test the hypothesis. Major findings revealed that majority (67.2%) of the respondents were between the age ranges of 30-49 years with a mean of 41 years, a lot of them were illiterates (42.1%) with average household size having a mean of 5. Majority (75.06%) earned below ₦150,000.00 with a mean income of ₦112,857.14 annually. Results also showed that urban women vegetable farmers frequently participate in harvesting ($\bar{x}=2.94$), followed by Marketing of produce ($\bar{x}=2.89$), raising seedlings ($\bar{x}=2.74$), weeding ($\bar{x}=2.67$). Years of experience ($r=0.194$) and income ($r=0.264$) positively correlated with participation in vegetable gardening activities. Women were advised to increase farm size and maintain their high participation so as to improve on their family welfare.

Keywords: Urban women, Participation, vegetable gardening, Ondo State

INTRODUCTION

The world's population is rapidly becoming urbanised as the world's urban population increased from 30% in 1950 to 47% in 2002 (Kennedy, 2003). Thus the number of people living in and around cities is on the increase. About 50% of the world's population now lives in cities while in Asia and Africa, the proportion is currently 39% climbing at a rate of 3 and 4% per year respectively (Badmus and Yekinni, 2011). Urban agriculture is an activity that produces processes, and market food and other product, on land and water in urban and peri-urban areas, applying intensive production methods and reusing natural resources, and urban waste, to yield diversity of crops and livestock (UNDP, 1996). Basically, urban farming allows individuals or groups to establish gardens or mini-farms on small plots, using creative techniques to maximize output, meet local needs, and help make efficient use of urban lands.

Important sectors of urban and peri-urban agriculture include horticulture, livestock, fodder milk production, aquaculture and forestry. In Nigeria, corn and varieties of vegetables are common crops for urban gardening. Leafy vegetables are common choices for urban gardening as they mature quickly and are not labour intensive, providing a quick source of income and sustenance (Chazwiza *et al.*, 2012). Lagos spinach, Okra, *Amarantus* spp, fluted pumpkin, *Corchorus oliferus* (Ewedu), water leaf, bitter leaf among others are common examples. Increasing urban population has led to higher demand, allowing vegetable crops to command high prices at local market and general income throughout the year (Chazwiza *et al.*, 2012). In addition to generating income, urban vegetable production also provides household nutritional

security since vegetables are rich in vitamins and fibre, essential components of a balance diet (Salunke and Kadan, 1998; Drenchsel *et al.*, 2007).

Due to the socio-economic status of women and their traditional gender roles, they dominate the informal sector of which urban agriculture is part. Therefore urban agriculture has become an important survival strategy of the poor who are mostly women, a measure of food security and a coping strategy for the urban poor (Maxwell, 1993; IDRC, 1993). Apart from mothering roles, women are seen contributing heavily to nutritional development, farm employment and food security (Olawepo and Fatulu, 2012).

According to Hovork *et al* (2009) women make up the majority of urban food producers in many cities around the world, especially predominating in household subsistence farming, with men playing greater role in urban food production for commercial purposes. This is tied to the primary role of women in feeding their families. The contribution of women in agriculture is poorly documented in Nigeria. This is largely because women carry out activities that are unpaid (informal non-market activities) such as domestic work, care giving, day care, preparation of meals, disposing garbage, market and shopping, working on husbands' farm and family farms apart from their own farms (FOS, 1999; NLAS, 2004). These informal and non-market activities that women perform is not officially accounted for in Systems of National Accounts (SNA) thereby undervaluing their contribution and overlooking the impact of these activities on the overall development of the economy (Okwoche and Obinne, 2010). This is due to the social constructs and cultural inclinations of the society in which they belong as well as those functions imposed on them by virtue of the fact that they are females. The significant contribution of



women to food production and processing has been empirically reported in various micro level studies (Afolabi and Ajayi, 1996; Ani, 2003). The study revealed that they are fully engaged in a wide range of other off-farm and household activities.

Women play a major role in the production of food crops and also undertake activities such as trade to earn cash income. It is on this note that the study seeks to assess the socioeconomic characteristics of women engaged in urban gardening, ascertain the level of participation of women in urban gardening activities and examine social roles played by women vegetable farmers in the study area. Hypothesis tested was: there is no significant relationship between respondents' socio-economic characteristics and their participation in urban farming activities.

METHODOLOGY

Ondo State was created on the 3rd of February, 1976 with headquarters at Akure. The State has a population of 3,460,877 (Males: 1,745,057 and Females 1,715,820) as well as a land mass of 14,798.8 square kilometres, with population density of 233 persons per square kilometre (NPC, 2006). Ondo is among the Niger-Delta States in the South-Western Nigeria which lies between latitude 5°45'N and 7° 52'N of the Equator by latitude 4° 30' and 6° E of the Greenwich Meridian. The State is bounded in the North-west by Ekiti state, West-central by Osun State and South -East by Edo State. The State presently has eighteen (18) Local Government Areas (LGAs) spread across the three Senatorial Districts (Ondo-South, Ondo-North and Ondo-Central). The main cash crops grown are cocoa, oil palm, rubber while the food crops include yam, cassava, maize, cocoyam and leafy vegetables.

Multistage sampling techniques were employed to select respondents for the study. The first stage involved purposive selection of two Local Government Areas which are Akure-south Local Government and Akure-North Local Government Areas because of their accessibility and location in the urban areas of Ondo state. The second stage involved random selection of four (4) communities in Akure South Local Government Areas and two (2) communities in Akure North Local Government this is because the urban population in Akure south is more than that of Akure North. In the third stage, 20 respondents were selected randomly in each community in Akure south while 30 respondents were also randomly selected in each community in Akure North Local Government making a total of 140 respondents in all. Primary data for the study was gathered through the use of a well-structured questionnaire administered on female urban vegetable farmers to obtain relevant information on

vegetable production in the study area. The data was analysed using both descriptive and inferential statistics; mean, frequency counts, percentages while Spearman's rank correlation was used to test the hypothesis.

RESULTS AND DISCUSSION

Socioeconomic Characteristics of Respondents

Majority (67.2%) of the respondents were between the age range of 30-49 years with a mean of 41 years. This implies that middle aged women dominated in vegetable production in the study area. This finding is similar to that of Mussimenta (2002), that majority of the women urban farmers were below 45 years. This implies that the women are very active and are still in their child bearing age. This also shows that most of the respondents are in economically active age and hence can actively participate in vegetable farming activities of any form. Result revealed that majority 42.1% of the respondents had no formal education. This means that a lot of urban women vegetable farmers were illiterate. This finding is similar to Adedayo and Tunde (2012) that 51.9% of urban women farmers had no formal education. It however contrasts with the findings of Edeoghon and Oriarebun (2009) that 6.0% of urban women farmers had no formal education.

Farm size of respondents showed that majority (53.6%) of respondents had farm size of less than 0.5ha, with the mean farm size of 0.51ha. This implies that most of the farmers were operating on subsistence level. This might not be unconnected with the difficulty in acquiring land for farming purposes in the city. Studies have shown that most urban farmers in Nigeria operated on small scale (Aniedu, 2006 and Emodi, 2009). A higher proportion (52.1%) had household size below five (5) persons; this was followed by 45.7% (5-9 persons) with mean household size of about five (5) persons. This corroborates NPC (2006) report that the mean household size in Ondo state was 4.7, approximately 5 persons. This by implication means that respondents would have a lesser household dependency burden since the household size on the average is small, hence income from vegetable sales could be channelled to cater for other social needs of the family apart from food needs. Result showed that a higher proportion (42.3%) had vegetable farming experience of between 1 and 5 years, followed by 32.1% with between 6 and 10 years of farming experience, 24.3% with between 11 and 15 years of experience and 7.0% with 16 and 20 years of experience. On the average, the vegetable farming experience of the respondents was 7 years. This is an indication that respondents in the study area are fairly experienced in vegetable farming hence would have lived in urban area for more than or up to that period of time.



Result showed that a higher proportion (33.6%) of the respondents earn between ₦101,000 - ₦150,000.00, Followed by 25.0% earning between ₦50,000.00-₦100,000.00, 22.1% earned between ₦150,000.00-₦200,000.00, 15% earned ₦50,000.00 and below and 4.3% earned ₦200,000.00 and above. However, using relative poverty line (FOS,1999) as used by Edeogbon (2012) as the basis for assessment of poor and rich, This is generally fair when considered in the context of the national minimum income of one

dollar per day as estimated by the United Nations. This amount is somewhat adequate to sustain a family on food purchases in addition to other services that they would have to pay for, such as child education, health, electricity, water, rent, etc. Also, it is expected that they would be able to afford farm inputs (seeds, fertilisers and herbicides etc.) and the use of social facilities/places. This finding contrasts Adedayo and Tunde (2012) that most urban women farmers earn less than ₦50,000.00 annually.

Table 1: Socio-economic characteristics of respondents

Characteristics		Frequency	Percentage	Mean
Age range	Below 30	19	13.6	
	30-39	48	34.3	
	40-49	46	32.9	40.86
	50-59	26	18.6	
	60 and above	1	0.7	
	Total	140	100.0	
Education	None	59	42.1	
	Primary	30	21.4	
	Secondary	29	20.7	
	NCE/OND	13	9.3	
	BSc/HND	9	6.4	
	Total	140	100.0	
Size of garden (ha)	Below 0.5	75	53.6	0.51
	0.5-1.0	56	40.0	
	1.0-1.5	9	6.4	
	Total	140	100.0	
Household size (range)	Below 5	73	52.1	
	5-9	64	45.7	
	10-14	1	.7	4.66
	15 and above	2	1.4	
	Total	140	100.0	
Vegetable gardening experience (years)	1-5	60	42.9	
	6-10	45	32.1	
	11-15	34	24.3	7.14
	16-20	1	.7	
	Total	140	100.0	
Annual Income (naira)	50,000 & below	21	15.0	
	50,001-100,000	35	25.0	
	100,001-150,000	47	33.6	112,857.14
	150,001-200,000	31	22.1	
	200,001-250,000	6	4.3	
	>250,000			
	Total	140	100.0	



Respondents' participation in urban vegetable farming activities

Result in Table 2.1 showed that urban women vegetable farmers frequently participate in harvesting ($\bar{x}=2.94$), followed by marketing of produce ($\bar{x}=2.89$), raising seedlings ($\bar{x}=2.74$), weeding ($\bar{x}=2.67$), irrigation ($\bar{x}=2.53$), mulching ($\bar{x}=2.50$), tillage ($\bar{x}=2.27$), seedbed preparation ($\bar{x}=2.23$), insect and disease control ($\bar{x}=2.21$) and spraying ($\bar{x}=2.17$). However, the result also revealed that respondents participates sometimes or never in storage and processing with means of 1.70 and 1.95 respectively. The lower participation in storage and processing could probably be due to the perishable nature of vegetables after harvest. Meanwhile, the overall participation in urban vegetable farming activities by respondents was (84.3%). This accentuates the fact that women's labour input is highest in areas of food production

to ensure food security and nutritional development at the household level. The findings is also in line with the observation made by FAO (1995) that women were mostly responsible for sowing, weeding, application of fertilisers and pesticides, harvesting, threshing and marketing in Nigeria.

According to Ogunlela and Muktar (2009), women embark on various agricultural activities for various reasons among which are personal interests, ease of handling, acquisition of skills, lack of alternative occupation, lack of funds and farming facilities. The standard deviation of harvesting 2.98+0.31, marketing 2.89+0.45, seeding 2.74+0.57, and weeding 2.67+0.50 showed dispersion around the mean that do not affect the significance of these activities which means that women participate in these activities across the population.

Table 2.1: Respondents' participation in vegetable gardening activities

	Frequent		Sometimes		Not at all		Pooled Mean	SD
	Freq	%	Freq	%	Freq	%		
Harvesting	135	96.4	2	1.4	3	2.1	2.94*	.31
Marketing	131	93.6	2	1.4	7	5.0	2.89*	.45
Seeding	113	80.7	18	12.9	9	6.4	2.74*	.57
Weeding	96	68.6	42	30.0	2	1.4	2.67*	.50
Irrigation	78	55.7	58	41.4	4	2.9	2.53*	.56
Use of mulch	87	62.1	36	25.7	17	12.1	2.50*	.70
Tillage	46	32.9	86	61.4	8	5.7	2.27*	.56
Seedbed preparation	40	28.6	92	65.7	8	5.7	2.23*	.54
Insect and disease control	46	32.9	77	55.0	17	12.1	2.21*	.64
Spraying	55	39.3	54	38.6	31	22.1	2.17*	.77
Processing	47	33.6	39	27.9	54	38.6	1.95	.85
Storage	31	22.1	36	25.7	73	52.1	1.70	.81

*Participation is frequent (mean > 2.00)

Table 2.2: Categorisation of respondents based on participation in vegetable gardening

Participation Status	Freq	%
High (score>18)	118	84.3
Low (score <=18)	22	15.7
Total	140	100

Social roles of women in the study area

Reasons for engaging in urban vegetable farming- In Table 3.1, majority (86.4%) of the respondents engage in urban vegetable farming for cost saving reasons. This means that urban women go into vegetable farming because of the associated economic gain. Thus, it is expected that it will have impact on their socio-economic status and gender roles as responsible mothers in their homes. This

finding contrasts Blair *et al.*, (1991) and Alison (2010), that the primary reason people choose to participate in urban gardening project is for enjoyment and recreation but agrees with Hovorka (2003), that Urban women went into farming so as to maintain livelihoods and contribute to household incomes through subsistence production and they even sell surplus for cash.

Table 3.1: Reasons for engaging in vegetable farming

Reasons	Frequency	Percent
Enjoy vegetable farming	1	.7
Cost saving	121	86.4
Enjoy consuming home grown vegetables	13	9.3
It is environmental friendly	1	.7
Cost saving/enjoy consuming home grown vegetables	4	2.9
Total	140	100.0

Membership of social groups

Result in Table 3.2 showed that a higher proportion (30.0%) of the respondents were members of monthly contribution groups this was followed by weekly contribution (24.3%), vegetable farmers association (10.7%), cooperative societies (10.0%), vegetable farmers association and weekly contribution (9.3%) vegetable farmers association and cooperative societies (7.1%). This

implies that respondents can collectively proffer solution to constraints of farm input and use of social facilities/places which individual standing alone cannot address. Agbamu (2006) argued that the greater the participation of a farmer in social organisation the more the interaction with other farmers hence, the earlier the adoption of innovation.

Table 3.2: Membership of social groups

	Frequency	Percent
Vegetable farmers association	15	10.7
Cooperative societies	14	10.0
Weekly contributions	34	24.3
Monthly contributions	42	30.0
Vegetable farmers association/cooperatives	10	7.1
Vegetable farmers association/weekly contribution	13	9.3
Vegetable farmers association/monthly contribution	2	1.4
Others	8	5.7
No response	2	1.4
Total	140	100.0

Nature of school attended by children

Results in Table 3.3 showed that majority (63.6%) of the respondents children attend public schools, followed by private schools (27.1%) and 2.1% gave no response. This by implication means that respondent's children attend public schools

more. This could be because public schools are more affordable relative to their annual income hence the children will have opportunity to complete primary school education without any problem of school fees.

Table 3.3: Nature of school attended by children

Nature of schools	Frequency	Percent
Public school	89	63.6
Private school	38	27.1
No response	10	7.1
Others	3	2.1
Total	140	100.0

Social activities engaged in by respondents

Table 3.4 showed that majority (70.7%) engage in domestic chores, this was followed by home making (57.9%) and laundry. This means that respondents were responsible mothers since

they perform activities such as cleaning the house, taking care of the children and the immediate family. This further implies that respondents do not use the services of house helps which could be because they have small family sizes as shown in



table 1 above. However, majority (59.3%), (60.7%) (69.3%) (70.7%) and (87.9%) never engaged in Childbearing, Baby seating, Sewing, Catering and weaving respectively. This implies that vegetable

farmers are tightly engaged or involved in the vocation as revealed in their high participation of 84.3% in Table 2.2.

Table 3.4: Distribution of respondents by social activities engaged in

Social activities	Yes		No	
	Freq	%	Freq	%
Domestic/home chores	99	70.7	41	29.3
Home making	81	57.9	59	42.1
Laundry	81	57.9	59	42.1
Child bearing	57	40.7	83	59.3
Baby seating	55	39.3	85	60.7
Sewing	43	30.7	97	69.3
Catering	41	29.3	99	70.7
Weaving	17	12.1	123	87.9

Frequency of facility usage by respondents

Analysis in Table 3.5 revealed that mobile phones ranked the highest by frequency of usage (\bar{x} =3.64), this was followed by market (\bar{x} =3.51) and hospital (\bar{x} =2.54). Other facilities rarely used by respondents were banks (\bar{x} =1.85) and post office (\bar{x} =1.74), recreation centres (\bar{x} =1.47), and airports (\bar{x} =1.37). This means that mobile phone is common hence the high usage. This perhaps is due to the fact that low cost mobile phones are available in the study area. Similarly, the high frequency of use of market is an indication that respondents often go to the market probably to sell off their goods (vegetables) and purchase other household needs. Also, hospital was among the facilities frequently used by respondents. However, banks were rarely used (\bar{x} =1.85). This implies that respondents do not really operate bank accounts. This could be that they do not have enough to sell so as to require

bank saving or they sell off their excess to subsist and therefore do not have enough to save in banks rather they make use of cooperatives and weekly/monthly contribution meeting they belong to.

This agrees with Lawson (2003) on appraisal of women and informal enterprises in Akure township that while many of the respondents had cause to use the schools, health centres and market facilities, the community bank, post office and sports centre were of no significance to them. The standard deviation of mobile phone 3.64 ± 0.52 and market 3.51 ± 0.54 did not deviate negatively from the mean which means most women across the population use mobile phones and markets while the standard deviation of hospital deviate negatively meaning that the significant is not strong.

Table 3.5: Frequency of facility usage by respondents

	Very frequent		Frequent		Rarely		Never		Pooled	
	Freq	%	Freq	%	Freq	%	Freq	%	Mean	SD
Mobile phone	92	65.7	47	33.6	0	0.0	1	0.7	3.64*	.52
Market	74	52.9	65	46.4	0	0.0	1	0.7	3.51*	.54
Hospital	20	14.3	59	42.1	38	27.1	23	16.4	2.54*	.93
Bank	17	12.1	10	7.1	48	34.3	65	46.4	1.85	1.00
Post office	1	0.7	10	7.1	80	57.1	49	35.0	1.74	.62
Recreation centres (zoo/parks, sport centres)	2	1.4	9	6.4	42	30.0	87	62.1	1.47	.68
Airport	0	0.0	5	3.6	42	30.0	93	66.4	1.37	.55

*Frequent (mean > 2.50)

Relationship between respondents' socioeconomic characteristics and participation in vegetable gardening

The results presented in Table 4 show that age had negative and non-significant relationship with participation in vegetable gardening. This implies that as age increases, participation in

vegetable gardening decreases. This could be because the aged cannot withstand the stress of waist bending and tedious nature of vegetable gardening activities such as irrigation, harvesting, tillage, weeding among others. This means that the younger people participate more in the activities involved in urban vegetable gardening than the older people. This is because; the younger people are still very energetic.

Education had a positive but non-significant relationship with participation in vegetable gardening. This implies that the level of Education has no effect on the participation in vegetable gardening. There is a negative and non-significant relationship between the size of garden and participation in urban gardening. This implies that as the size of farm/garden increases, participation decreases and this may probably be due to labour requirements to work on larger farms than small ones. It also implies that size of garden has no significant effect on participation in vegetable gardening.

Household size positively correlated with participation in vegetable gardening and was significant at 0.05 level (critical $r = 0.166$). This implies that household with larger sizes participates more in the activities involved in urban gardening. This positive and significant relationship is

probably due to the responsibility of the women to provide for a larger family size in order to meet their nutritional needs. This also implies that the will be increased production for sales since participation may boost production.

Vegetable gardening in years is positively correlated with participation in urban gardening and correlation is significant at the 0.05 level. This implies that women who have more years of experience in vegetable gardening participates more in the farming activities involved in urban vegetable gardening. This may be due to the fact that they are more skilled in the activities than those who are less experienced in urban vegetable gardening. This contradicts the finding of Oladejo *et al.* (2011) that years of experience on the other hand, has an insignificant influence on the level of women participation in agricultural activities.

The annual income positively correlated with the level of participation in farming activities involved in urban vegetable gardening. This implies that women who participate in the farming activities make more profit than those who do not. This may be because women who participate perform these activities more carefully and as at when due and this will prevent wastage and reduce cost that would be incurred in the use of hired labour.

Table 9: Relationship between respondents' socio-economic characteristics and participation in vegetable gardening (Correlations)

Independent variables	Participation (index)	
	Correlation coefficient (r)	Decision
Age years	-0.027	Not significant
Education	0.046	Not significant
Size of garden (ha)	-0.032	Not significant
Household size	0.237	Significant
Vegetable gardening experience (years)	0.194	Significant
Income (annual)	0.260	Significant

*Correlation is significant at the 0.05 level (critical $r = 0.166$).

CONCLUSION

Women vegetable farmers in the study area participate actively in the activities involved in vegetable production. Household size ($r=0.2370$), Vegetable gardening experience ($r=0.194$) and income ($r = 0.260$) positively correlated with participation in vegetable gardening activities. Social activity respondents mainly involved in were domestic chores (70.7%) and home making (57.9%) while facility frequently used were cell phones and markets. Respondents operate at subsistence level farm size of 0.51 ha. They are therefore advised to increase farm size and maintain their high participation so as to improve on their welfare.



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