CONTRIBUTION OF LEAFY VEGETABLE FARMING TO THE LIVELIHOOD OF WOMEN IN IKORODU LOCAL GOVERNMENT AREA, LAGOS STATE NIGERIA

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ABSTRACT
The study assessed the contribution of leafy vegetable farming to the livelihood of women in Ikorodu Local Government of Lagos State, Nigeria. Structured questionnaire and interview schedule were used to collect data from 99 respondents on socioeconomic characteristics, other livelihood activities engaged in, livelihoods status and constraints faced in urban vegetable farming. Data was analysed using means, percentages, standard deviation, Chi-square, Pearson Product Moment Correlation, Linear regression at 5% level of significance. Findings reveal that the mean age of respondents was 46years, average farm size and income were 1acre and ₦76,373, respectively. One-quarter(25.3%) of the women diversified into other sources of livelihood activities (such as petty trading, tailoring, hairdressing), although most (98.0%) engaged in vegetable production as their primary source of income. Most respondents were food secure (87.9%), while56.6% and 35.4% had access to educational services for their children and health services, respectively. Respondents had high livelihood status (60.6%). High cost of labour ($\overline{X}$=1.57), climatic factors ($\overline{X}$=1.33) and pests and disease ($\overline{X}$=1.29) were the severe constraints to urban vegetable farming. Respondents' educational status (r=0.23) was positively correlated with their livelihood status. Constraints (r=-0.37) faced by respondents was negatively correlated to their livelihood status. Age (β=-0.40), farming experience (β=0.45), and constraints (β=-0.34), were predictors of the livelihood status of the women in the study area. The study concluded that leafy vegetable farming contributed to the livelihood status of the women. Adult education should be encouraged as education helped the women to manage information on how to better their lives.
Keywords: Vegetable farming, livelihood status, urban agriculture

INTRODUCTION

Urbanisation-the increase in the urban share of total population – is inevitable. A United Nations report (United Nations, 2007) indicates that an unprecedented scale of urban growth will be noticed in the developing countries of Africa and Asia, and that this growth will occur in a single generation. The UN report further stated that by 2030, towns and cities of the developing world will make up 80 percent of the urban populace. While urbanization can lead to economic growth-that is – if proper plans and policies are put in place. It can also be highly detrimental if handled with levity. In Nigeria, rapid, largely unchecked urbanization is a common feature in cities like Lagos, Kano and Ibadan. Lagos is the economic centre of the country with a population of 9,013,534 (NPC, 2007) making it the most populous state in the country despite the fact that it is the smallest in size (3577km^2/ 0.4% of Nigeria landmass) in terms of the land area. Oduwaye (2005) posits that Lagos as a mega city has the lowest urban living standard among the 28megacities in the world. The rate of population growth is about 275, 000 persons per annum with a population density of 2,594 persons per square km.

The resultant effect of the unprecedented increase in population includes; income poverty, increased food insecurity, poor-quality and over-crowded shelter, lack of public services and infrastructure such as pipe borne water, sanitation facilities, waste collection, drainage and roads as well as insecure land tenure. These affect urban poor men and women but it has more effects on women. Poor women are particularly disadvantaged due to socio-cultural norms which limit their access to and control over resources despite the triple burden of reproduction, production and community work. Mtsor and Idisi (2014) maintains that women's lack of independent land rights rules out one of the main fallback positions for women seeking sustainable livelihoods in the face of rising poverty. Consequently, in order to alleviate urban poverty, improve urban poor livelihoods, food security, and to enhance urban waste management, many cities in developing countries approved and stimulated the development of urban agriculture as one of the alternative strategy (Resource Centers on Urban Agriculture and Food security, 2014; Baker 2012).

Agricultural activities carried out in the urban area includes cultivation of vegetables, rearing of livestock small ruminants (goat, sheep) and fish farming. Women are mostly involved in vegetable production because it requires a relatively small land area, minimum capital, and that vegetables mature more quickly than other crops. Vegetables are not labour intensive, but provide a quick source of income for the farmers. According to the Food and Agriculture Organisation, (2008), vegetable farming has the potential to provide an initial step towards establishing an income base for more poor household. Women are not only growing but also marketing and storing vegetables as part of their contribution to family income, food security, and access to family healthcare. It also enables women

to attain some degree of financial independence with family budget (Adebisi-Adelani, Olajide-Taiwo, Adeoye, Olajide-Taiwo, 2011).

Anosike and Fasona (2004) maintain that "the high rate of poverty among urban households and the growing responsibilities of women to assure household survival have caused urban agriculture to become a crucial activity in Lagos. However, inadequate access to land and water are obstacles to efficient and effective agricultural practices and in comparison to men, women are more affected". In their study, they reported that land in Lagos is usually rented and about two plots of land is allocated to four to six farmers. Many women are usually not able to cope with the payments due to poor production output and sales and their inability to access a better land. Additionally, the women in the state argued that due to their inability to have a say in decision making, they are not able to benefit from communal efforts as do their counterparts. Despite these limiting factors women are still saddled with the responsibility of provision of food and household welfare. In a state like Lagos, with a burgeoning population and the severe constraints limiting women to achieve their full potentials in urban agriculture, it therefore becomes imperative to assess the contributions of urban leafy vegetable farming to the livelihood of women in the state. Additionally, to bring to light the livelihood status of women and other constraints they face in leafy vegetable farming in Lagos state. Several literatures have concentrated on benefits of urban agriculture, its prospects or focused on its effect on the living standard of urban farmers generally. However, there is a paucity of literature on the contributions of leafy vegetable farming to livelihoods with a particular focus of women living in Lagos state where there is an increasing rate of urban slum and low standard of living. To this end this study sought to address the following specific objectives;

1. describe the socio-economic characteristics of the urban vegetable women farmers in the study area.
2. identify other livelihood activities that respondents are involved in, in the study area.
3. ascertain the livelihood status of urban women farmers in the study area.
4. identify the constraints associated with urban vegetable farming in the study area.

The following null hypotheses were tested;

$H_0$1: There is no significant relationship between the selected socio-economic characteristics of the respondents and their livelihood status.

$H_0$2: There is no significant relationship between the constraints faced by the respondents and their livelihood status.

$H_0$3: There is no significant contribution of the independent variables (socio-economic characteristics, involvement in other activities and constraints) to the livelihood status of the respondents.

METHODOLOGY

Lagos state is one of the 36 states in Nigeria and lies to the South-west of Nigeria with Ikeja as its capital. It extends approximately from latitude 6º2' north to 6º4' north and from longitude 2º45' east. It is the largest city in Nigeria as well as on the Africa continent. Lagos population as at 2016 is 21million (estimate) (National Population Commission, 2018). In 2012 Lagos surpassed Cairo in size to become the largest city in Africa. The World Economic Forum (WEF) states that Lagos is the fastest-growing city in the world, with a growth of 85 people per hour. The population growth of Lagos is faster than that of London and New York put together, with the two cities growing at a rate of 9 and 10 people per hour. Due to heavy migration, the city has a diverse population. It also faces a major issue of inequality in the distribution of wealth and income. Lagos state has been described as the "mega-city of slums" with millions living in and around the lagoons with no access to road, clean water, electricity or waste disposal (National Bureau of Statistics, 2018). Lagos state is classified into five agricultural zones which are Badagry, Epe, Ikorodu, Ikeja, Lekki.

The population of this study included women farmers that are into Ugu *(Telfaria occidentalis)* and Ewedu *(Corchorusspp)* production.

Multi-stage sampling procedure was employed to select respondents for the study. The first stage was the purposive selection of Ikorodu agricultural zone out of the five agricultural zones in the state. Ikorodu was selected due to the large population of vegetable farmers in the zone. In the second stage, Ikorodu North Local Council Development Area (LCDA) was purposively chosen out of four LCDAs because of the large population of female vegetable producers in the area. In the third stage, three communities were randomly selected from the 15 communities in the LCDA. The last stage was a random sampling of respondents to obtain a sample size of ninety-nine (99) female vegetable farmers. Primary data for the study was collected through a structured questionnaire**.** The questionnaire was divided into different sections to provide information that addressed the specific objectives. Independent variables of the study were measured as follows;

Other livelihood activities involved in was measured by listing out alternative livelihood options and respondents were required that tick from the option Yes or No and scores of 1 and 0 were assigned, respectively.

Constraints faced by respondents was measured on a 3-point Likert typed scale of serious constraint mild constraint and not a constraint. Scores of 2, 1 and 0 were assigned respectively.

Weighted mean was used to rank constraints in their order of severity.

The dependent variable is livelihood status. The study adapted the method used by Gebrekidan (2015) in to measure livelihood status. The components he used to determine livelihood status were; primary source of employment, food security and access to social services.

Primary employment and source of income was measured by asking respondents to indicate their primary source of employment. A list of employment sources was given and the respondents were to indicate their primary employment. Yes was coded 1 and No as 0. The item with the highest frequency was regarded as the primary source of employment and the primary source of income.

Food security was measured using the Food and Nutrition Technical Assistance (FANTA-2) methodology for Household Food Security Survey Model (HFSSM) (Deitchler, Ballard, Swindale and Coates, 2011). The HFSSM model covers food accessibility, food availability, and food utilization. The model comprises of 18 questions, and respondents were required to tick either Yes or No based on the occurrence of each item in their household. Scores of 1 and 0 were assigned respectively.For the frequency of occurrence, respondents who tick the Yes option were required to indicate the frequency of the occurrence from a 3 point Likert typed scale of Sometimes, Often and Never. Since often and sometimes are in the affirmative, they were coded as 1 while never was coded 0.

Access to social services such as Health and education was measured by asking respondents to respond to question under each component. A 3-point Likert type scale of increased, decreased and not changed was used. Scores of 2, 1 and 0 were assigned respectively.

Scores from each were standardized and a mean score was obtained which was used to categorized respondents into high, and low livelihood status.

Data obtained were analysed using descriptive statistics while inferential statistics such as Chi-square, Pearson Product Moment Correlation and Regression were used to test the hypotheses at 5% significance level.

RESULTS AND DISCUSSION

Socioeconomic characteristics

Table 1 shows that 37% of the respondents were between 41-50 years with a mean of 46 years. This is an indication that the women urban vegetable farmers have past their child bearing age but are still in their middle age and are expected to be strong enough to withstand the level of rigor associated with vegetable farming in an urban settlement. This contrary to the findings of Odok and Agbachome (2012) who in their study in Calabar reported that the mean age of farmers in the area is 35 years. A high percentage (70.7%) of the respondents was married. This is a plus to urban farming because the family members (children) can provide labour, which is a primary requirement for urban agriculture. Furthermore, the divorced and widowed represent 25.3% of the respondents; this implies that one-quarter of the respondents have female- headed households and as such, they are responsible for the upkeep of their families. The results in Table 1 also show that the mean household size of the respondents was5 years. This implies that respondents have a small family size and a small family size implies low expenditures and dependency burden. This finding somewhat corroborates that of Aina, Oladapo, Adebosin and Ajilola (2012) who observed that a majority of the farmers in Ibadan metropolis have a small family size of 1-3 persons.

On educational status, the results show that 39.4% of the women had primary education, 43.4% of the women had secondary education, and 1.0% of the women had tertiary education. This reveals that most urban farmers are educated thus, increases their chances of adopting new techniques that will boost agricultural productivity.Also, the mean farming experience of the respondents was 17 years. It indicates that the respondents are not new to urban vegetable production. With a form of formal education coupled with excellent farming experience, respondents will be more knowledgeable and open to innovations in urban vegetable farming. This is in tandem with the findings of Asadu, Egbujor, Char and Ifedika, (2013) and Danso (2004) who reported that a higher number of urban farmers are educated and this contributes to their income as they are willing to adopt practices that will increase their productivity. More than two-thirds of the respondents had less than one acre of vegetable farm. It shows that most of the respondents are small scale farmers. Additionally, the results reveal that more than half (52.5%) of these women got their farmlands by rent, while 9.1% were farming on borrowed land. This may be due to the fact that they are female and are constrained in assessing lands or due to the fact that they are limited by space for vegetable production because of industrialization, housing, which is a common trend in urban area. This agrees with Edeoghon and Anozie (2015) who reported that land is a very serious constraint among urban vegetable farmers in Lagos state.

The results in Table 1 further shows that74.7% of the respondents were full time vegetable farmers. Most (97.9%) of the respondents were either a member of a cooperative or vegetable producers' association. The high full-time participation in vegetable farming and membership in a social organisation by respondents might

enhance their access to resources and therefore boost their vegetable production. Odoemenem, (2007) stated that high percentage of the women in cooperative society may be because the cooperative society is a good source of information on agricultural production and is a source of inputs and credit facilities to farmers. On income, the result shows that respondents had an average monthly income of ₦76,373.72. This indicates that the women are making enough money to meet their basic needs when compared to the current Federal minimum wage in Nigeria, which is ₦30,000. This contradicts the findings of Salau and Attah (2012) who attests that the estimated mean monthly income for urban farmer is ₦13,686. They also stated that low income adversely affects productivity because it leads to low capital investment.

Table 1: Distribution of respondents by their socioeconomic characteristics, n=99

Variable	Frequency	Percentage	Mean
Age			
≤34	11	11.1	46
31-34	21	21.2	
41-45	37	37.4	
51-60	18	18.2	
Above 60	12	12.1	
Marital status			
Single	4	4.0	
Married	70	70.7	
Divorced	8	8.1	
Widowed	17	17.2	
Educational status			
No formal education	16	16.2	
1-6 years	39	39.4	
7-12 years	43	43.4	
>12 years	1	1.0	
Farming experience			
1-10	42	42.4	17
11-20	28	28.3	
21-30	20	20.2	
31-40	8	8.1	
>40	1	1.0	
Household size			
1-3	30	30.3	5
4-6	46	46.5	
7-9	19	19.2	
10-12	4	4.0	
Farm size (acre)			
≤ 1	63	63.6	1
1 -2	25	25.3	
> 2	11	11.1	
Social group			
Cooperative	63	63.6	
Veg. prod. Association	34	34.3	
None	2	2.1	
Working status			
Fulltime	74	74.7	
Part-time	25	25.3	
Source of land			
Inherited	17	17.2	
Borrowed	9	9.1	
Leased	1	1.0	
Rented	52	52.5	
Owned	20	20.2	
Monthly income			
≤ ₦50000	35	35.4	₦76,373
₦500001-100000	41	41.4	

Variable	Frequency	Percentage	Mean
₦100001-150000	21	21.2	
>150000	2	2.0	

Source: Field survey, 2017

Other livelihood activities that respondents are involved in

Results in Table 2 shows the other livelihood activities respondents were engaged in. Less than one-tenth (7.2%) of the respondents were involved in trading, while 6.1% were involved in tailoring. This shows that 25 respondents out of 99 practice livelihood diversification. Hence, 74 respondents depend sole on income from urban vegetable farming. The implication of livelihood diversification is that these women have more than one source of income and this may positively impact on their livelihood status as it makes them able to afford their basic necessities such as accommodation, shelter and food. This is in line with the submission of Adepoju and Obayelu (2013), who reported that due to the risks and uncertainties associated with farming, there is an increasing involvement in off-farm and non-farm activities by the rural populace so as to help improve their welfare.

Table 2: Other livelihood activities engaged in by respondents.

Other livelihood activities	Yes	
	Freq.	%
Petty trading	7	7.2
Teaching	0	0
Tailoring	6	6.1
Hairdressing	4	4.0
Housekeeping and babysitting for others	3	3.0
Civil service	1	1.0
Catering	4	4.0
None	74	74.7

Source: Field survey, 2017

Livelihood status of the respondents

The livelihood status of the respondents was measured under 3 categories;

Respondents' primary employment / source of income

Almost all (98.0%) of the respondents, as reported in Table 3, engaged in leafy vegetable production as their primary source of income. Not more than 1% of the women had petty trading and tailoring as their primary source of income respectively. This indicates that leafy vegetable production is the primary source of income for almost all respondents. Hence, their basic and other essential needs of the family are met through the sales of vegetables. The high involvement of the women in vegetable farming may be due to the unavailability of jobs in the study area and the fact that vegetable requires a relatively small amount of capital and land for start-up and a short gestation period. This supports the finding of Tewodros (2007) and Axumite (1994) who opined that individuals involved in urban vegetable farming were people who are not employed or whose salary is too little to sustain their lives and that it was a matter of survival.

Table 3: Distribution of respondents by primary source of employment / income

Primary employment/ source of income	Yes	
	Frequency	Percentage
Vegetable production	97	98.0
Petty trading	1	1.0
Teaching	0	.00
Tailoring	1	1.0
Hairdressing	0	.00
Housekeeping and babysitting for others	0	.00

Source: Field survey, 2017

Contribution of vegetable farming to respondents' food security status

Results in Table 4 shows that for household items, over 90% of the respondents never had to worry that their food will run out before they get money to buy more and could afford balanced meals. For the adult items, 97% of the adults never cut size or skipped meals and none (100%) of the adult never lost weight or didn't eat for a whole day in three months or more. Furthermore, for the

children's item, 91.9% didn't rely on few kind of low cost meals to feed their children, 99% fed their children balanced meals, 100% had enough food to eat. This means that income from vegetable was enough to feed both adults and children in the respondents' household. This implies that that the respondents are food secure in terms of availability and accessibility. This may perhaps be due to the fact that women are directly responsible for their household's food security. Since these women are farmers, they may have planted other crops in a mix cropping system with their vegetables thereby enabling them to meet their household food needs in terms of availability and accessibility. This is in tandem with the submission of Nugent (2000), who reported that poor urban families involved in farming eat more fresh vegetables than other families in the same income category and urban agriculture contributed to improved food availability and nutritional status of the producers.

Table 4: Percentage distribution of respondents by their food security status

Food security item	No	%	OF %	SM %	NV %
Household items					
I worry food I bought will run out before I get money to buy more	92	92.9	0.0	7.1	0.0
The food I bought didn't last and I didn't have money to buy more	95	96.0	0.0	4.0	0.0
I couldn't afford to eat balanced meals	97	98.0	0.0	2.0	0.0
Adult items					
Adult cut size or skip meals	96	97.0	0.0	3.0	0.0
Adults cut size or skip meals in 3 or more months	98	99.0	0.0	1.0	0.0
I ate less than I felt I should	98	99.0	0.0	1.0	0.0
I was hungry but didn't eat	99	100.0	0.0	0.0	0.0
I lost weight	99	100.0	0.0	0.0	0.0
Adults didn't eat for a whole day	99	100.0	0.0	0.0	0.0
Adults didn't eat for a whole day in 3 or more months	99	100.0	0.0	0.0	0.0
Child items					
I relied on a few kind of low cost meals to feed my children	91	91.9	8.0	8.1	1.0
I couldn't feed my children balanced meals	98	99.0	1.0	1.0	0.0
My children were not eating enough	99	100.0	0.0	0.0	0.0
I cut size of children meal	99	100.0	0.0	0.0	0.0
My children were hungry	99	100.0	0.0	0.0	0.0
My children skipped meals	99	100.0	0.0	0.0	0.0

Source: Field survey, 2017. SM=Sometimes, OF=Often, NV=Never

Categorisation of respondents based on their food security

The result in Table 5 shows that 87.9% of the respondents were food secure. This implies that the respondents are food secure in terms of availability and accessibility. This may be attributed to the fact that they are farmers and as such they may practice mixed cropping that is some staple crops may be planted with the vegetables which makes food available at all times. This aligns with the report of FAO (2014) who stated that urban agriculture provides a substantial contribution to food security and enhance the nutritional level for the urban poor in many developing countries.

Table 5: Distribution of respondents by their food security status

	Freq	%	Minimum	Maximum	Mean	SD
Food secure	87	87.9	0.00	7.00	0.29	1.02
Food insecure	12	12.1				

Source: Field survey, 2017

Contribution of vegetable farming to respondents' access to social services

Respondents' access to educational services- Results on Table 6 show that about 43% of the respondents had increased ability through income from vegetable farming to pay their children's school fees, purchase educational materials and also afford extra-curricular activities. Urban farmers produce most of the food they consume, therefore save up extra money which would have been used to purchase for. This is similar to the findings of Marielle, Gordon and de Zeeuw (2013) who reported that urban household involved in urban farming produces their own food and this provides benefit for the urban farmers in monetary savings and in free up cash for other household expenses, such as water, medicines, rent, schooling, and clothing. With an increased ability to cater for the educational needs of their children, their livelihood status may be enhanced and this would

also promote social development in the community. This agrees with the findings of Hull and Midgley (2015) who stated that education is the single most vital element in combating poverty, empowering women, promoting human rights and democracy, protecting the environment and controlling population growth.

Table 6: Percentage distribution of respondents based on children's access to educational services

Educational service	DC		NC		IC	
	Freq	%	Freq	%	Freq	%
Income from vegetable farming is sufficient to pay my children's school fees	23	23.2	33	33.3	43	43.4
Income from vegetable farming is sufficient to buy educational materials for my children	22	22.2	34	34.4	43	43.3
Income from vegetable farming is sufficient to pay for my children's extra-curricular activities	22	22.2	34	34.4	43	43.3
Income from vegetable farming is sufficient to sponsor my children at tertiary level	21	21.2	45	45.5	33	33.3

Source: Field survey, 2017
DC= decreased, NC=not changed, IC=increased

Categorisation of respondents based on children's access to educational service

Results on Table 7 shows the categorisation of respondents on children's access to educational services. More than half (56.6%) of the respondents had access to educational services for the children. This means that with the income from vegetable farming, more than half of the women can provide their children's educational needs. This result agrees with the findings of Adedeji and Ademiluyi (2009) from the research on urban agriculture in Lagos State and reported that the production of leafy vegetables provide quick returns that helps families to meet their needs.

Table 7: Distribution of respondents based on children's access to educational services

	Freq	%	Minimum	Maximum	Mean	SD
High	56	56.6	0.00	10.0	5.94	3.50
Low	43	43.4				

Source: Field survey, 2017

Respondents by access to health services

Results in Table 8show that 37.0% of the women had increased ability to pay their medical bills, 35.4% were able to buy the drugs, and 34.4% were able to afford the medical bills for their children. This means that a little above one-third of the respondents' income from vegetable farming had increased their access to medical services.

Table 8: Percentage distribution of respondents by access to health services

Health service	IC		DC		NC	
	freq	%	freq	%	Freq	%
With the income from vegetable farming, I am able to pay my medical bills	37	37.4	18	18.2	44	44.4
With the income from vegetable farming, I am able to buy drugs	35	35.4	20	20.2	44	44.4
With the income from vegetable farming, I am able to pay for my children's medical bill	34	34.4	21	21.2	44	44.4

Source: Field survey, 2017.
IC=increased, DC= decreased, NC=not changed.

Categorisation of respondents based on their access to health services

Results in Table 9 shows that 35.4% of the respondents have high access to health services. This implies that almost two-third (64.6%) of respondents had low access to health services. Inability of the respondents to have access to health services may have a negative impact on not just their farming activities but also on their livelihood status, as the saying goes "health is wealth". This agrees with the findings of Asenso-Okyere, Chiang, Thangata and Andal (2011) who stated that the health status of farmers affects their ability to

work and thus, underpins the welfare of the household.

Table 9: Distribution of respondents by their access to health services

	Freq	%	Minimum	Maximum	Mean	S.D
High	35	35.4	0.00	6.00	3.47	2.15
Low	64	64.6				

Source: Field survey, 2017

Categorisation of respondents based on their livelihood status

Results obtained from Table 10 show that 60.6% of the respondents had a high livelihood status. Since almost (98%) all respondents had vegetable farming as their primary source of income (from Table 3), it therefore means that income from vegetable farming may have contributed to their high livelihood status. This is in line with the findings of Adedeji and Ademiluyi (2009) from the research on urban agriculture in Lagos State and reported that the production of leafy vegetables provides quick returns that help families to meet their needs. With more income, households will have better access medical and education services and to meet the requirements of the self and his/her households' basic needs on a sustainable basis with dignity (FAO, 2015).

Table 10: Distribution of respondents by their livelihood status

	Freq	%	Minimum	Maximum	Mean	SD
High	60	60.6	-2.60	7.07	1.00	2.09
Low	39	39.4				

Source: Field survey, 2017.

Constraints faced by respondents

Results on Table 11 shows that the constraints faced by respondents in vegetable farming. High cost of labour ($\bar{x}$=1.57) ranked first. Vegetable farming is not so labour intensive. However, due to the domestic work burden of these women, they may need the services of labourers especially when the vegetables are still young to help them with weeding. With high cost of farm labour, production cost will also increase. Climatic factors ($\bar{x}$=1.33) ranked second. Extreme weather events such as irregular or excessive rainfall may have a detrimental effect to vegetable farming. Pests and diseases ($\bar{x}$=1.29) ranked third. Incidences of pest and diseases affect vegetable production by reducing the quantity of vegetable harvested and even those harvested may have lost its aesthetic value therefore will command a low price in the market. Cumulatively all these constraints may affect the respondents' profit. Hence, with less income, ability to meet household needs with be hampered. This finding is similar to that of (Backman and Sumelius (2009) who reported that constraints faced by urban farmers include labour cost, pests and diseases.

Lack of access to land ($\bar{x} = 0.89$) ranked 8th. This implies that respondents in the study area despite being an urban area do not consider lack of land as a constraint. This may be because vegetable farming does not need a vast expanse of land and more so women acquire land by communal sharing of rented land. Inadequate marketing outlet ($\bar{x}$=0.19) was the least constraint. This may be because the demand for vegetables is high all year. This confirms the report of Badmus and Yekini (2011), who reported that leafy vegetables are an important feature of Nigerians diet that a traditional meal without it is assumed to be incomplete.

Table 11: Percentage distribution of constraints faced by the respondents

Constraints	SC (%)	MC (%)	NC (%)	$\bar{X}$	Rank
Lack of adequate water supply	43.4	28.3	28.3	1.15	5th
Pests and diseases	35.4	58.6	6.1	1.29	3rd
Inadequate access to inputs	10.1	43.4	46.5	0.63	6th
Inadequate marketing outlet	2.0	15.2	82.8	0.19	12^{h}
Government policies	7.1	29.3	63.6	0.43	10th
Lack of access to credit facilities	29.3	30.3	40.4	0.89	7th
Child bearing	8.1	19.2	72.7	0.35	11th
Lack of access to extension agents	12.1	33.3	54.5	0.58	9th
Inadequate access to land	22.2	44.4	33.3	0.89	8th
Climatic factors	44.4	44.4	11.1	1.33	2nd
Pilferage	44.4	35.4	20.2	1.24	4th
High cost of labour	64.6	27.3	8.1	1.57	1st

Source: Field survey, 2017

SC= Serious constraint, MC= Mild constraint, NC= Not a constraint,

Relationship between the selected socio-economic characteristics of the respondents and their livelihood status

The Chi-square result in Table 12 shows that there was a significant relationship between working status and livelihood status of the respondents (χ^2= 3.86, p= 0.05). This means that full time farmers had a better livelihood status than their counterparts who are part-time farmers. The study therefore established that vegetable farming on a full-time basis can significantly improve an individual's livelihood status.

Table 12: Table showing the Chi-square analysis of the relationship between the working status of respondents and their livelihood status

Variable	χ^2	df	p-value	CC	Decision
Working status of respondents	3.86*	2	0.05	0.19	S

Source: Field survey, 2017

χ^2= chi-square, DF=degree of freedom, P=significance value, CC=contingency coefficient, D=decision

The Pearson Product Moment Correlation results in Table 13 shows that a significant and positive relationship exists between the farming experience (r =0.19, p=0.05) of the respondents and the livelihood status. This implies that their farming experience contributed to their livelihood status, respondents with a higher farming experience had a better livelihood status than their counterparts with low farming experience.

Educational status (r=0.23, p=0.21) of respondents was positively related to the livelihood status and this positive relationship was significant. This implies that their educational status contributed to their livelihood status, respondents with a higher educational qualification had a better livelihood status than those with lower educational qualification. This can be attributed to the fact that an educated mind is an informed mind. This agrees with the findings of (Asadu,Egbujor, Char and Ifedika, 2013) and Danso (2004) who reported that a higher number of urban farmers are educated and this contributes to their income as they are willing to adopt practices that will increase their productivity.

Constraints faced by the respondents (r=-0.37, p=0.000) has a significant negative relationship with their livelihood status. This shows that in vegetable farming, constraints faced by respondents had a significant impact on their livelihood status. The negative relationship depicts that the lesser the constraints faced, the higher their livelihood status and vice-versa. This means that respondents that faced lesser constraints had a better livelihood status than their counterparts with more constraints. The results on Table 11 shows that high cost of labour, climatic factors and pests and diseases are the three most serious constraints faced by the respondents and that these constraints have an impact on the livelihood status of the respondents

Table 13: Table showing the PPMC analysis of the relationship between selected socioeconomic characteristics and constraints of respondents and their livelihood status

Variable	r	P	Decision
Educational status	0.23*	0.02	S
Farming experience	0.19*	0.05	S
Constraints	-0.371**	0.00	S

Source: Field survey, 2017

Linear regression results

The result in Table 14 shows the contribution of the independent variables to the livelihood status of the respondents. The model reveals that three variables regressed on the livelihood status of the women gave a coefficient of variable determination (R^2) of 0.251 showing that the variation in their livelihood status is explained to about 25per cent as a result of the variation in the identified variables. Thus three variables can explain 25per cent of the variation in the dependent variable. This implies that they determine 25per cent of the variation that can be observed in their livelihood status of the respondents.

The farming experience of the respondents (β=0.45, p=0.006) was the highest predictor of the livelihood status of the respondents. This indicates that the respondents with more farming experience have a higher livelihood status. This is because with increased farming experience the farmers become more knowledgeable on the production thereby adopting techniques which will increase productivity and production and in turn increase their income which simultaneously leads to better livelihood status. The age of the respondents (β=-0.41, p= -2.687) was also significant. This means the older farmers, are 40.8% less likely to have a higher livelihood status than their counterparts who

are younger. This is because farming by the respondents is largely manual and required some amount of physical energy which an old person may not withstand. The constraints (β= -0.34, p=0.001) faced by respondents in vegetable farming was significant. This suggests that a unit increase in the constraint resulted in 34.15% decrease in their livelihood status. Exploiting these variables positively can improve the livelihood status of women urban vegetable farmers in Lagos state.

Table 14: Table showing determinants of livelihood status of the respondents

Model	B	T	Sig
Constants		3.43	0.001
Age of respondents	-0.41	-2.69	0.009
Farming experience of the respondents	0.45	2.79	0.006
Household size of the	0.05	0.40	0.690
Farm size of the	0.07	0.41	0.682
Average monthly income of the respondents	-0.13	-0.82	0.416
Marital status of the respondents	-0.09	-0.83	0.411
Religion of therespondents	-0.02	-0.16	0.876
Veg association	-0.12	-1.24	0.217
Full time	0.03	0.30	0.762
Rented land	0.16	-1.48	0.143
Constraints	-0.34	-3.38	0.001

Source: Field survey, 2017
R= 0.501, R^2=0.251, adjusted R^2=0.156, β=beta value, t=t-statistic

CONCLUSION AND RECOMMENDATIONS

The respondents in the study area were food secured, had high access to educational services, low access to health services, however, their livelihood status was high. They were majorly constrained by high cost of labour, climatic factors and pest and diseases. Respondents' educational status and working status positively influenced their livelihood status, while constraints had a negative influence on it. Major contributors of respondents' livelihood status were age, farming experience and constraints to vegetable farming. Extension agents should furnish respondents with information on climate adaptation and climate smart strategies and effective measures of pest control. Urban vegetable farming should be encouraged especially for young women as this will assist in improving their livelihood status. Extension agents should also engage women in adult education, as education helped the women to manage information on how to better their lives.

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