



Original Research Article

Effects of Rural-Urban Migration on Arable Crop Outputs Among Farming Households in Delta State, Nigeria

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Abstract

The study examined the effects of rural-urban migration on arable crop outputs among farming households in Delta State Nigeria. A total of 346 rural household heads was sampled for the study. The objectives of the study were realized with the aid of descriptive statistics such as frequency counts and percentages. The hypothesis was tested using T test. The results from the study showed that the mean age of the rural household heads was 52 years. Majority (69.90%) of the rural household heads were male. Most (61.90%) of them were married with an average household size of 7 persons, and had an average of 1 dependent relative and 5 children. Most (78.60%) of the respondents harboured an average number of 2 permanent migrants and 2 temporary migrants. Farming was the major occupation of 74.90% of the respondents, while their average farming experience was 21 years. A majority of them grew maize, cassava and yam. The study also revealed that there were highly significant ($p < 0.01$) differences in the levels of maize, cassava, and yam produced before and after migration of household members. It was recommended that government and stake holders should make effort to tackle the causes of rural-urban migration in order to reduce its effects on arable crops outputs, since it has been shown by the study that rural-urban migration had an adverse effect in the level of arable crop output after migration of household members.

Keywords: Rural-urban migration, arable crops, households, outputs

Introduction

Migration is the movement of people from a geographical location to another, within a country or across international borders. It encompasses all kinds of movement, permanent or temporary, irrespective of the drivers, or duration. It may be voluntary and involuntary in nature (Ekong, 2003). Rural-urban migration involves people moving from villages (rural areas) to cities (urban areas). This pattern of movement is the most common and noticeable type in Nigeria thus bringing about an increase in urban population and a decrease in rural population (Hadiza *et al.*, 2021). The rate at which people migrate from the rural areas in Nigeria is quite alarming, which

is as a result of the quest to seek for better employment and opportunities (Hadiza *et al.*, 2021).

Rural-urban migration is on the increase in Nigeria with consequences on agricultural production, urban development and family structure. Migrants think that they have better opportunities to contribute to the family and village development, but the long-term impact may not be that positive (Ofuoku and Aganaga, 2018). In Nigeria, most inhabitants of the rural areas are predominantly involved in agriculture. Agriculture contributes significantly in the nation's Gross domestic product (GDP). The agricultural sector contributes about 41 percent of Nigeria's GDP, employs about 65 percent of the total population and provides employment to 80 percent of the rural population. (ADF, 2005). The rural sector in Nigeria is differentiated from the urban sector in terms of the respective volumes of agricultural and non-agricultural components of economic activity that take place in both sectors.

Livelihood strategies in rural areas consist of three components such as subsistence agricultural production, wage labor and migration, and when all these sectors are improved, they serve as important channels to alleviate poverty in the rural areas. According to Ajadi (2010), there is an absence of comprehensive and conclusive implementation of rural development policies in Nigeria which brings about the problem of high rate of migration. Since agriculture contribute about 41% of the country gross domestic product, with most of it produced from the rural areas, there is a need to examine the effects rural-urban migration on arable crops outputs among farming households in Delta State, Nigeria.

Objectives of the study

The broad objective of the study was to examine the effects of rural-urban migration on arable crop output, and among farming households

The specific objectives were to:

- (i) describe the socioeconomic characteristics of the rural dwellers in Delta State.
- (ii) investigate the rate of rural-urban migration and
- (iii) determine the level of arable crops outputs before and after migration of household members.

Hypothesis

H₀: There is no significant difference in the level of arable crops output before and after migration of household members.

Materials and Methods

Study Area

The study was carried out in Delta State of Nigeria. Delta is a part of the Niger Delta states, and was created from the defunct Bendel state. Delta state is located within longitude 5⁰ 00' and 6⁰ 45' East and latitude 5⁰ 00' and 6⁰ 30' North. The state is 7440km² in size. Delta state is located in the mangrove swamp and rain forests, and freshwater forests in the south and central agricultural zones respectively. The northern agricultural zone is under derived savannah vegetation cover. The state is bounded on the north by Edo State, on the South by Bayelsa State,

on the east by Anambra State, and on the west by Atlantic Ocean. It consists of twenty five local government areas with a population of 6,037,667 people (NIPC, 2021). The state is divided into three agricultural zones which are Delta North, Delta South and Delta Central agricultural zones. A lot of farming activities are carried out in Delta state, and include arable crop farming, livestock and fish farming. Its climate and soil encourage farming (NIPC, 2021).

Sampling technique and sample size

The population for the study comprised rural household heads in Delta state. Twenty percent (20%) of the local government areas in each agricultural zone were randomly selected. Two Local Government Areas were selected from Delta North, 2 from Delta central and 1 from Delta south, giving a total of 5 local government areas (LGAs) selected in Delta State. Approximately 30% of the typical rural communities was identified and randomly selected from the chosen local government areas in Delta states. Rural household heads were identified by key informants, and ten percent (10%) of those identified were randomly selected for this study, giving a total sample size of 357 respondents.

Data Collection

Data were collected for the study through a primary source by the use of a structured questionnaire which was administered to 357 rural household heads but only 346 questionnaires could be retrieved and used for this study.

Data Analysis

Data obtained were analyzed using descriptive statistics, and presented as frequencies, counts and percentages. The hypothesis was tested with the use of the T test.

Results and Discussion

Socioeconomic Characteristics of Rural Household Heads

(i) Age

Majority (44.40%) of the rural household heads were within the age bracket of 40-49 years; some (31.52%) were in the age bracket of 50-59 years, others (22.36%) were in the age bracket of 50 years and above, while 11.71% of the household heads were in the age bracket of 30-39 years. The mean age of farmers in the state was 52 years. This indicate that a majority of them were no longer youths, and this could be the reason some of them stayed back in their rural communities.

(ii) Gender

The gender distribution of rural household heads shows that a majority (69.90%) of the rural household heads were men, while 30.10% of them were female. This shows that majority of rural household heads in the study area were men. This result conform to that of Abigail (2013) who found that females are been marginalized in household headship irrespective of migration.

(iii) Marital status

The result revealed that majority (60.69%) of the respondent were married, about 61.69% of them were single, 12.40% of them were widows/widowers, and 4.9% of them were divorced.

Ango *et al.* (2014) reported that single people in the society tend to migrate more than the married ones do.

(iv) Level of education

The results on level of education reveals that 35.80% of the respondents had secondary education, 27.70% had primary school certificates, 24.90% had no formal education, while 11.6% had tertiary education. The results indicated that most of the rural household heads could, at least, read and write, and thus capable of acquiring more knowledge and skills, and having access to information.

(v) Household size

The distribution of the household heads according to their household sizes shows that majority (53.12%) had 5-8 person in their household; 25.43% had between 1-4 persons, while 21.39% had above 8 persons in their households. The average household size was 7 persons. The relatively large average household size obtained in this study could serve as an insurance against shortfalls in labor supply. This result is in consonant with that of Alinma (2018), who obtained rural household sizes of 5-8 persons, compared with 1-4 members per household in urban locations. Rural household sizes tend to be larger in rural communities because of their dependence on the family for provision of farm labour.

(vi) Number of dependent relatives

The study revealed that most (81.79%) of the household heads had about 1-3 relatives living with them. Those with 4-6 relatives constituted 17.91% of the respondents, while 0.28% had above 6 dependent relatives. The mean number of dependent relatives was 2 persons. This implies that relatives living with the respondents were not a major source of farm labour to the households.

(vii) Number of children

More than half (51.15%) of the household heads had 4-6 children, while 5.49% of them had above 6 children. Those with 1-3 children were 43.35% of the respondents. The mean number of children was 5. These children often form part of the rural farm labour in violation of the United Nations law on child labour. This calls for a compromise between local tradition and the UN law (Ofuoku *et al.*, 2020).

(viii) Farming experience

The result from this study shows that 42.49% of the respondents had a farming experience of 1-10 years, 31.50% had been farming for 11-20 years, 18.49% for 21-30 years. and 10.57% for over 30 years. The mean for farming experience was 21 years. This implies that the respondent were relatively experienced in the farming business.

(ix) Primary occupation

The study revealed that most (74.90%) of the respondents took farming as their primary occupation. Those who were traders were 12.70%; 8.70% of them were artisans, while 3.80% of them were hunters. Farming, therefore, was the major occupation and source of livelihood of the rural households used in this study. Ekong (2008) had stated that farming is the major source of livelihood for most rural dwellers in Nigeria.

Table 1: Distribution of rural household heads according to socio-economic characteristics

Variables	Frequency	%	Mean
Age			52years
30-39	8	2.31	
40-49	15	43.64	
50-59	108	31.21	
60 and above	79	22.83	
Gender			
Male	245	69.90	
Female	104	30.10	
Marital status			
Married	210	60.69	
Single	76	21.96	
Divorce	17	4.90	
Widow/Widower	43	12.40	
Educational status			
No formal education	86	24.90	
Primary	96	27.70	
Secondary	124	35.80	
Tertiary	40	11.60	
Household size			7 persons
1 – 4	88	25.43	
5 – 8	184	53.12	
Above 8	74	21.39	
Number of dependant relative			2 persons
1-3	283	81.79	
4-6	62	17.91	
Above	1	0.28	
Number of children			5 children
1-3	150	43.35	
4-6	177	51.15	
Above 6	19	5.49	
Faming experience (Years)			21 years
1 – 10	147	42.49	
11 – 20	109	31.50	
21 – 30	64	18.49	
Above 30	26	10.57	
Primary occupation			
Farming	259	74.90	
Artisan	30	8.70	
Hunting	13	3.80	
Trading	44	12.70	
Migrated			
Yes	272	78.60	
No	74	27.40	
Types of arable crops grown			
Yam	110	78.60	
Maize	198	57.23	
Cassava	216	62.40	
Family income(#)			#68,733
1000 – 15000	12	3.46	
16000 – 34000	57	16.47	
35000 – 70000	202	58.38	
Above 70000	75	21.67	

(x) Migrants

This study also found that most (78.60%) of rural households had family members who had migrated from their households, while 27.40% had no migrants. Migration from rural communities in search of education, skills and better life in urban areas is prevalent in Nigeria, and this has led to drastic depletion of available farm labour in rural communities.

(xi) Types of arable crop grown

The prevalent arable crops grown by the respondents were yam (by 78.60% of the respondents), cassava (by 62.40%) and maize, which was cultivated by 57.23% of the respondents. All three crops are important staples in that part of Nigeria, from which the farmers could realize considerable revenue.

(xii) Family income

From the study, monthly income generated by 58.38% of respondents was 35,000 – 70,000 Nigerian Naira (NGN). About 21.67% of the respondents had a monthly income of above 70,000 NGN, 16.47% earned 16,000-34,000 NGN, while 3.46% of them had a monthly income of 1000-5000 NGN. The mean monthly income of the respondents in a study area was 68,733 NGN. The implication was that the respondent had a monthly income higher than the government paid minimum wage. This shows that most of them could earn a living through getting involved in farming and other non-farm income-generating activities.

Rates of rural-urban migration:

Results on the rates of rural-urban migration are presented in Table 2.

(i) Number of permanent migrants

The results show that 50% of respondents in the study area had 1 person who had permanently migrated from their households, while 46.53% had 2-3 permanent migrants. The mean number of permanent migrants was 2 persons. The implication is that most of the rural household heads had lost 2 persons from their households' labor force to permanent migration, and this may have had a negative effect on their production level.

(ii) Age of permanent migrants

Majority (39.59%) of those who had permanently migrated from their household fell within the age bracket of 22-27 years; 38.59% of them were 28-35 years old, while 13.01% of the permanent migrants were aged 15-21 years. Those who were 35 years or older were 8.96%. The mean age of the permanent migrants was 29 years. The indication of this is that most of the people who left the households permanently were in their youthful ages. The study agrees the Alarima (2018), who reported that youths are likely to migrate between the ages of 22 – 26 years.

(iii) Number of temporary migrants

The results (Table 2) revealed that majority (53.76%) of respondents had between 2-3 members of their household who had migrated temporarily, while 44.80% of them had about 1 temporary migrant. Households from which more than 3 persons had temporarily migrated made up 1.45%. The mean number of temporary migrants was 2 persons. The implication is that rural household

heads had about 2 persons who left their households occasionally and came back, and probably returned with more knowledge and experience that helped to improve their farming activities.

(iv) Age of temporary migrants

The most prevalent age group of temporary migrants was 10-20 years, and occurred in 41.33% of the households (Table 2). The 21-29-year age bracket was from 26.88% of the households, while those aged 30-35 were from 28.61% of the respondents. Only 3.18% of members who have temporarily migrated were above 35 years old. The mean age of the temporary migrants was 23 years. The implication is that most of the rural household heads lost their valuable work force most probably to educational pursuits, desire for skills acquisition, pursuit of gainful employment etc. This is the age at which most of the youths leave home in pursuit of education, skills acquisition, and jobs that they feel can only be acquired by leaving the rural area.

Table 2: Rates of rural urban migration

Rate of migration	Frequency	%	Mean
Number of permanent migrants			2 persons
0 – 1	173	50.00	
2 – 3	161	46.53	
Above 3	12	3.47	
Age of permanent migrant (Years)			29 years
15 – 21	45	13.01	
22 – 27	137	39.59	
28 – 35	133	38.43	
Above 35	31	8.96	
Number of temporary migrants			2 persons
0 – 1	155	44.80	
2 – 3	186	53.76	
Above 3	5	1.45	
Age of temporary migrant			23 years
10 – 20	143	41.33	
21 – 29	93	26.88	
30 – 35	99	28.61	
Above 35 years	11	3.18	

Aggregated Average Level of Output before and After Migration of Household Members

Table 3 shows the distribution of respondents according to their aggregated level of output in the different local government areas of Delta State. Ethiope East Local Government Area (LGA) had a mean production level of 782.81kg/ha of maize before migration of household members and 424.01kg/ha of maize after migration, which is equivalent to a 45.83% decline in the output of maize. The level of cassava production in the same LGA was 603.56kg/ha before migration and 283.50kg/ha after migration of household members; the mean decline in production was 320.06kg/ha or 52.85%. Yam production declined from 256.75kg/ha to 136.56kg/ha (39.02% decline) in the same LGA as a result of migration.

In Ukwani Local Government area, respondents indicated that the mean annual production levels of maize, cassava and yam per hectare declined by 41.57, 60.33 and 10.50% respectively as a result of migration of household member from rural communities.

In a similar manner, migration from rural households in Isoko North Local Government area also led to substantial declines in mean annual outputs of maize, cassava and yam per hectare to the tune of 52.50, 64.12 and 24.25% respectively.

In Okpe, LGA, annual maize output before and after migration of household members from rural communities were 833.84kg and 408.03kg respectively, which amounted to 51.07% decline in annual maize output per hectare. Annual cassava and yam output/hectare in the LGA also declined by 40.38 and 20.65% respectively as a result of migration from rural households from the LGA.

The situation was similar in Ndokwa East LGA where maize output, following migrations from rural households in the LGA, declined from 813.38kg/ha to 488.70kg/ha (39.97%). Output of cassava and yam declined by 40.28 and 30.30% respectively (Table 3).

Table 3: Aggregated Average Level of Output Before and After Migration of Household Members

Local Government Areas	Arable Crops	Before/ After	Mean (kg)	Mean Differences (kg)	% Decrease
Ethiope East	Maize	Before	782.81	358.80	45.82
		After	424.01		
	Cassava	Before	605.56	320.06	52.85
		After	283.50		
	Yam	Before	256.75	100.19	39.02
		After	136.56		
Ukwani	Maize	Before	838.10	348.40	41.57
		After	489.70		
	Cassava	Before	765.58	461.89	60.33
		After	303.69		
	Yam	Before	278.33	39.72	10.50
		After	238.61		
Isoko North	Maize	Before	645.41	338.83	52.50
		After	306.58		
	Cassava	Before	567.45	363.87	64.12
		After	203.58		
	Yam	Before	201.56	48.88	24.25
		After	152.68		
Okpe	Maize	Before	833.84	425.81	51.07
		After	408.03		
	Cassava	Before	490.77	198.15	40.38
		After	292.62		
	Yam	Before	238.04	49.16	20.65
		After	188.88		
Ndokwa East	Maize	Before	813.38	325.14	39.97
		After	488.70		
	Cassava	Before	590.42	237.80	40.28
		After	352.62		
	Yam	Before	314.04	95.16	30.30
		After	218.88		

The foregoing results indicate that migration adversely affected the output/ha of the major arable crops (maize, cassava and yam) of the rural households.

Table 4 presents the results of the paired difference T-test results on the levels of output of maize, cassava and yam in the affected areas before and after migration from the rural households. The findings indicate highly significant ($p < 0.01$) decreases in output of all the arable crops as a result of migration, as a result of loss of family labour and expertise. These findings are in agreement with those of Abigail (2013) who studied the effect of migration on agricultural production in Northern part of Ghana and reported that households whose member engaged in temporary migration had significant reductions in farm production. She also found that, households are held down in poverty due to loss of labour caused by either temporary or permanent migration from places of origin. These findings are also in agreement with the new economics of labour migration theory (Nelm) (Rozelle *et al.*, 1999) cited in Abigail (2013).

Table 4: Difference in the level of arable crop output before and after migration of household members in Delta state.

Arable crops output	Before/After	Mean	t value	Significance	Remark
Maize	Before	3914.00	18.917	0.003	Significant
	After	1958.81			
Cassava	Before	3017.78	28.237	0.000	Significant
	After	1415.99			
Yam	Before	1288.72	3.880	0.001	Significant
	After	955.60			

Conclusion

The focus of this study was on the effects of rural-urban migration on arable crop outputs among farming households in Delta State, Nigeria. It was found that migration from rural households significantly ($p < 0.01$) reduced yearly output of maize, cassava and yam in the state. It was therefore recommended that government and stakeholders should put in effort to eradicate or reduce the causes of rural-urban migration in order to reduce its effects on the level of arable crops output.

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