

Innovations

Effects of rural-urban migration on labor availability for arable crop production among rural households in Edo state, Nigeria

Abushe O.P, Odjebor. U., Ebewore S.O. and Ofuoku A.U

Corresponding Author: Abushe O.P

Abstract

This study examined the effects of rural-urban migration on labor availability for arable crops production among rural households in Edo state Nigeria. The objectives of the study were to ascertain the rates of rural-urban migration, identify the causes of rural urban migration and determine the effects of rural urban migration on labor availability for arable crop production. A total of 298 heads of rural households were sampled for this study. The objectives of the study were achieved with frequency counts and percentages and means derived from a point 4 likert type scale. The hypothesis was tested with Tobit regression analysis. The result revealed that majority (64.10%) of the heads of rural household were female and are within the age bracket of 50-59years with an average house hold size of 6 persons having a mean monthly income of #72,210. The study found that rural household loses 3 persons within the ages of 22-28years to both permanent and temporary migration. The regression analysis revealed that age, educational level, types of crop grown, migrant household members, lack of good job opportunities, underdevelopment, and poor social amenities significantly contributed to rural-urban migration in the study area. ($p=0.000<0.01$, $R^2 =0.71$). It was found that rural-urban migration had an effect on the cost of labor. (Labor is very expensive. Mean=3.16) and availability of labor (labor is very scarce. Mean=2.67). Based on the findings it was recommended that all stake holders and the governments should strive to develop the rural areas and introduce technology driven agriculture to the rural areas to reduce the rates of rural-urban migration and its effect on labor availability.

Keywords: 1.Effects, 2.Rural-Urban, 3.Migration, 4.labor, 5.availability, 6.arable crop, 7.production

Introduction

The gap between urban and rural area in Nigeria is very wide in terms of standard of living, quality of life, access to opportunities, facilities and amenities. The rural areas are neglected in terms of development projects and infrastructure due to the relative underdevelopment of the rural areas compared to the urban centers. People usually migrate out of the rural area. Due to rural urban immigration, the challenges and prospects of the rural area has always been a source of concern to the different tiers of government (Stock, 2005). Rural development has been faced with the issues of the production oriented rural economics depends on the people who are non-productive. People who are ill-equipped with tools that are outdated technical information, scientific and cultural training whose traditional roles and access to resources serves as a problem for their effective incorporation into modern economic systems. Whereas the urban economy which is consumption oriented is filled with many people i.e able bodied men who are either unemployed or unemployable or sometimes marginally employed or under employed in the urban areas where they decided to live. Due to this mass movement the rural area has become qualitatively depopulated and are less

attractive for both economic and social investments, while the urban area is physically congested socially unhealthy and uneconomic to maintain

Migration which have been seen as a strategy for survival used by the poor especially in the rural areas has remained relevant, since it act as a catalyst in transformation process of not only the destiny of the individual migrants but also the conditions of family members left behind, local communities and the wider sending region. One major source of development for the rural populace as a result of this increasing drift towards the cities is remittance. Migrant's remittance and income they create are becoming critical resources for the sustenance strategies of receiving households as well as agents of regional and national development (Chukwuedozie and Onokale, 2013). Household that receive this remittance uses them for the primary needs such as clothes and foods and also invest on children education, improvement in household food security and water and sanitation. However, the ability of remittance to compensate for shortage of labor in rural areas is dependent on the amount and value of remittance received by migrant's household at home. The importance of growth in agriculture is the source of employment for majority of the rural population as the means of raising income for the poor in the rural area and also reduces rural urban migration. Byerlee et al, (1974) cited in Abigail,(2013). The shift to non agricultural occupation brought about deterioration of the Nigeria food security thus bringing about the problem of hunger and malnutrition over the years. hence there is a need to examine the effects of rural-urban migration on labor availability among rural household in Edo state Nigeria.

Objectives of the study

The broad objective of the study is to examine the effects of rural urban migration on labor availability among rural household in Edo State Nigeria

The specific objectives are to:

- Ascertain the rates of migration by age
- identify the causes of migration
- Determine the effects of rural-urban migration on labor availability for arable crop production

Hypothesis

Ho₁ the socioeconomic characteristics of household heads and causes of migration did not significantly contribute to rural-urban migration.

Materials and methods

The study was carried out in Edo State Nigeria. Edo state is one of the 36 states of Nigeria located in the southern region of Nigeria it is bounded by the kogi state to the North east and east, Anambra to the East, Delta to the South East and South and Ondo to the West and North West. The Niger River flows along the state Eastern boundaries. Edo state covers a land area 17,802km² with population density of 3,233,366. It consist of 18 local government areas and is demarcated into three agricultural zones which includes Edo north, Edo south and Edo central agricultural zones. Edo sate has a wide range of fertile soil that is suitable for farming activities such as arable farming, livestock farming, perennial crop farming and fish farming. NIPC (2021).

A multi stage sampling procedure was employed in the selection of three hundred and nine (309) respondents for the study. The first stage involved selecting 20% of the local government areas in the three agricultural zones in the state given a total of five local government areas that were randomly selected. The second stage involves using simple random sampling procedure to select 30% of identified rural communities from the chosen local government areas. The last stage involves randomly selecting 10% of identified heads of rural households with the help of key informants.

Table1: distribution of respondents according to agricultural zones, local government areas, communities and numbers of identified heads of rural household and their percentage.

Agricultural zone	Local Government Area	Communities(30%)	Number of heads of Rural household	% No of heads of rural household
Edo north	Etsako West	Egho	212	21
		Idato	261	26
	Ovwun East	Emai	227	23
		Otuo	232	23
Edo central	Esan South East	Agenegbode	271	27
		Anumeji	243	24
Edo South	Orhionmwon	Urhonigbe	318	32
		Igbanke	359	36
		Obagie	311	31
	Kpoba Okha	Ologbo	362	36
		Obareti	297	30
Total sample size			3,093	309

The data for the study was collected from primary source through the use of structured questionnaire and interview schedule which was administered by researcher and trained enumerators.

The instrument for data collection was subjected to content validity by experts in the departments of agricultural economics and extension, Delta State University Abraka. It was thereafter restructured according to corrections made.

To ensure the reliability of the instrument used for the study, the questionnaires were pilot tested using the test retest reliability method. Eromedoghene and ovwigho, (2019)

The instrument was administered to 309 heads of rural household but only 298 questionnaires were retrieved and were used for the study.

The variables measured include:

- a. socioeconomic characteristics of heads of rural households
 - Age: respondents were asked to indicate their chronological age in years
 - Gender: was measured by nominal value of male 1, female 0
 - Marital status; respondents were asked to indicate whether married, single, divorced , widow/widower
 - Level of education: measured in years of formal education. The number of years corresponding to the respondent qualification was used as numeric value for level of education. No formal education was scored zero(0)
 - Household size: respondents were asked to indicate the numbers of persons in their household
 - Farming experience: farming experience were measured in number of years of farming
 - Migrant household members: the number was measured in terms of number of house hold that has migrants members
 - Family income: was measured in naira (#)

The data were analyzed with the use of descriptive and inferential statistics. Objectives (i) and (ii) were achieved using frequency counts and percentages. Objective iii was realized with means derived from a 4 point likert type scale of strongly agree 4, agree 3, disagree 2 and strongly disagree 1. Decisions on likert type

scale mean were based on a cutoff point of $2.5(4+3+2+1=10/4 =2.5)$.The hypothesis was tested with the use of tobit regression analysis.

Model specification

In order to test this hypothesis and in part achieve the objectives of this study, The Tobit regression model was applied to estimate the reaction of socioeconomic characteristics of heads of rural households and correlates of migration to rural-urban migration. The Tobit model was developed by Tobit, (1958) and it is express thus:

$$Y = X\beta + \varepsilon$$

Where β is a vector of unknown coefficients is a vector of independent variables, and ε is an error term that stands independently distributed with mean zero and a variance of S^2Y is a latent variable that is observable If the value of the data of the dependent variable is higher than the limiting factor z expressed by the following two equations.

$$Y = Y^* \text{ if } Y^* > Y_0$$

$$Y = 0 \text{ if } Y^* < Y_0$$

Where Y_0 is the limiting factors.

The two equation stand for a censored distribution of the data. The Tobit model is capable of being used for the estimation of expected values of Y_1 as a function of a set of explanatory variables (X) weighed by the probability that $Y_1 > 0$ (Tobin 1958).

Madala (1983) demonstrates that the expected intensity of migration

$E(Y)$ is:

$$\varepsilon(Y) = X\beta F(Z) + \sigma f(Z) \text{ and } Z = X\beta/\sigma.$$

Where $F(Z)$ is the cumulative normal distribution of Z , $f(z)$ is the value of the derivative of the normal curve at a given point (unit normal density), z is the z-score for the area under the normal curve, and is the standard error of the error (Oladele, 2005). The coefficient of the variable in the model, β do not represent marginal effect directly, but the sign of the coefficient give the researcher information as to the direction of the effect.

The variable used in the Tobit model estimation are defined as follows

Y = migration (yes=1, No = 0)

X_1 =age (years)

X_2 =gender (male=1, female=0)

X_3 =marital status (married=1, otherwise=0)

X_4 =level of formal education (number of years of schooling)

X_5 =household size (number of persons in the household)

X_6 =family income/month (#)

X_7 =number of migrants (number of persons who migrated)

X_8 =lack of good job opportunities (yes=1, No=0)

X_9 = No good schools (yes=1, NO=0)

X_{10} =Underdevelopment (yes, No = 0)

X_{11} = poor social amenities

X_{12} = inadequate skills acquisition center

X_{12} = lack of good health care facilities

μ =error term

Results and Discussion

Social Economics characteristics of heads of rural household

The socioeconomic characteristics of heads of rural households examined in the study are; age, gender, marital status, level of education, household size, migrant household members, and primary occupation, farming experience and family income.

Age: majority (45.30%) of heads of rural household were in the age bracket of 40-49 years some (31.88%) were in the age bracket of 50- 59 years, others (21.81%) were in the age bracket of 60 and above, 1.01% of the household head were in the age bracket of 30-39 years. the mean age of heads of rural household were 51.55 years. the implication is that most of the rural household were in the age of 49-52 years. Indicating that majority of them were no more in their youthful age and thus not too strong to do much of agricultural work or activities. This could be the reason they stayed back in the rural area. This finding is in agreement with Alarima (2018) who found that youth migrated more than the older people.

Marital Status: The result in table 2 showed that majority (53.36%) were married, 27.52% were single, (16.78%) were widow /widower, while (2.35%) of them were divorce. This implies that majority of them were married and thus had responsibly as they have commitment towards their spouses and household this could be the reason they stayed back in the rural area. This is in line with the study of Omotayo (2017),) who reported an over 80% married respondents among rural households and they tend to be more responsible which brings about cohesion in society.

Gender: table 2 revealed that majority (64.10%) of heads of the rural household were female, about (35.90%) of them were male. the implication is that majority of heads of the rural household in the study area were female. This is in contrast with prior studies that states that women are not given opportunity when it comes to family headship irrespective of migration. /Abigail, (2013)

Level of Education: The result showed that majority (36.6%) had secondary education, 26.20) had primary education, 23.83% had no formal education while 13.40% had tertiary education. The result suggests that majority of the rural household heads can at least read and write and thus education is expected to help them acquire more knowledge and skills.

Household Size: the result showed that majority (50.34%) has a household size of between 5-8 persons, others (25.17%) had between 1-4 persons, while (24.50%) had above 8 persons in their household. the mean household size was 6 persons The implication is that they have a relatively large household size which could serve as an insurance against short fall in labor supply. Also due to large household size, the heads of household tends to work hard and tend to be more involved in other form of income generating activities. This result is in consonant with Ehirim, (2022) who reported that rural household sizes are between 5-8 persons larger than their counterparts in the urban areas that have between 1-4 members and have larger household sizes because of the dependence on family as source of farm labor.

Presence of migrated household members: The result showed that majority (78.20%) of rural household heads have people who had migrated from their household while 21.80% have no migrants. This implies that majority of the household in the State have had members who have left their household and thus creating a workforce vacuum.

Farming Experience: majority (52.35%) of the respondents had farming experience of between 11-20 years, about 33.89% had between 1-10 years of family experience, and 12.01% had between 21-30 years of family experience, while 1.68% of respondents had above 30 years of farming experience. The mean years of farming

experience was 24.90years. This implies that the respondents in the study area are relatively experience in the family business and knows the ups and downs of the business and this might be a push to encourage their children or relatives to seek for alternative means of livelihood.

Primary Occupation: The study revealed that majority (76.80%), of the respondents was into farming, 14.80% were trading, 6% were Artisans, while 2.30% were hunters. The implication of this is that most of the respondents in the study area were into farming as their major occupation and source of livelihood. This is in consonant with Ekong (2010) who stated that the major source of livelihood of rural dwellers is farming.

Family Income: table 2 showed that majority (55.37%) of the respondents had a monthly income between #35,000-#70,000, 27.85% had income of above #70,000, 16.12% has income ranging between #16,000-34,000 and above 0.67% had a monthly income ranging between #1,000 – #15000 with a mean income of #72,210. This shows that most of them could earn a living through getting involved in farming. Though their income is low, they are able to manage their households because they only procure few things that make them to live a simple life. (Ofuoku and Ekorhi-Robinson, 2018)

Table 2: Distribution of Rural Household Heads According to Socio-economic Characteristics

Variables	frequency	Percentage (%)	Mean/mode
Age			51.55 years
30 – 39	3	(101)	
40 – 49	135	(45.30)	
50 – 59	95	(31.88)	
60 and above	65	(21.81)	
Gender			
Male	107	(35.9)	Female
Female	191	(64.1)	
Marital Status			
Married	159	(53.36)	
Single	82	(27.52)	Married
Divorce	7	(2.35)	
Widow/Widower	50	(16.78)	
Level of Education			
No formal education	71	(23.83)	
Primary	78	26.20)	Secondary
Secondary	109	(36.60)	
Tertiary	40	(13.40)	
Household Size			
1 – 4	75	(25.17)	
5 – 8	150	(50.34)	6 persons
Above 8	73	(24.50)	
Farming Exp (years)			

1 – 10	101	(33.89)	
11 – 20	156	52.35	
21 – 30	36	(12.01)	24.90 years
Above 30	5	(1.68)	
Primary Occupation			
Farming	229	(76.80)	
Artisan	18	(6.00)	Farming
Hunting	7	(2.30)	
Trading	44	. (14.80)	
Presence of migrated household members			
Yes	233	(78.20)	
No	65	(21.5)	
Family Income			
1000 – 15,000	2	(0.67)	
16,000 – 34,000	48	(16.12)	₦72, 210
35,000 -70,000	165	(55.37)	
Above 70,000	83	(27.05)	

Source: field survey 2022

Rates of rural-urban migration and age grade: the rates of rural-urban migration were measured from two perspectives in terms of numbers of temporary migrants and permanent migrants and their respective age grade.

Number of Permanent Migrant: table 3 shows that most (68.79%) of household had between 2-3 person who had migrated, about 27.85% of household had about one household member who had migrated permanently, while 3.36% had above 3 persons who had migrated. The mean number of permanent migrate was 3 persons. This implies that most of the rural household heads had lost 3persons from their household labor force and thus may have an effect in their production level since rural household depend largely on family labor.

Age of Permanent Migrants: majority (45.30%) of those who have migrated permanently are between the age bracket of 22-27years about 37.25% are between the age bracket of 28-35years while 12.75% of permanent migrant are between the ages of 15-21years, 4.69% are in the age bracket of above 35years. The mean age of permanent migrant in the State was 28years. This indicates that most of the migrants are in their prime where they have the ability and strength to work. Also this indicates that they are youth and as such they are between the age where they can operate independently and stay alone and as such can be allowed by their parents to travel out of their community. This study agrees with Mutandwa etal (2011), who found that youths are likely to migrate between the ages of 17- 21years and above.

Number of temporary migrants: table 3 shows that most (54.02%) of rural household had about 2-3 temporary migrants, about 44.29% had 1 member who leaves temporarily, while 1.68% had above 3 temporary migrants. The mean number of temporary migrants in the state was 3.The implication was that heads of rural household had about 2 persons who leaves their household occasionally and returns back and by implication might return with knowledge and experience acquired that might help improve their farming activities and thereby result to an increase in production level of arable crop.

Age of Temporary Migrants: , majority (34.23%) of temporary migrants are between the ages of 10-20years, about 30.20% are between the ages of 21-29years, 31.88% are between the ages of 30-35years, while 3.69% of members of household who have migrated temporarily falls between the ages of above the ages of 35years. The mean age of temporary migrants in the state was 24years.This implies that most household heads loses workforce which may be as a result of educational pursuit and skills acquisition. This is the age at which most youth are in pursuit of education and skills acquisition, that they feel can only be obtained outside the rural area in order to better improve their life.

Table 3 Rates of Rural Urban Migration

Rates of Migration	Frequency	Percentage (%)	Means
Number of Permanent migrant			
0 – 1	83	27.85	
2 – 3	205	68.79	3 persons
Above 3	10	3.36	
Age of Permanent migrant			
15 – 21	38	12.75	
22 – 27	135	45.30	28 years
28 – 35	111	37.25	
Above 35	14	4.69	
Number of Temp. migrant			
0 – 1	132	44.29	
2 – 3	164	54.02	3 persons
Above 3	5	1.68	
Age of Temp. migrant			
10 – 20	102)	34.23	
21 – 29	90	30.20	
30 – 35	95	31.88	24 years
Above 35	11	3.69	

Source: field survey 2022

Causes of Rural-urban migration: , majority (69.13%) of heads of rural household agreed that lack of good job opportunity in the rural area was one of the causes of rural-urban migration, about 54.03% stated that underdevelopment is push factor for rural-urban migration, 34.23% stated that no good schools was a cause of rural-urban migration, about 37.58% of household heads stated that poor health care facilities was a cause of rural-urban migration, 32.21% of respondents agreed that inadequate skills acquisition center was a cause of rural-urban migration and 19.88% of rural household heads indicated that poor health care facilities was also a cause of rural-urban migration. The implication of this is that the major causes of rural-urban migration in the study area were lack of good job opportunity and underdevelopment of the rural area. This findings was in line with Danego et al (2015), who reported that youth migrated from rural areas to urban centers

due to lack of social amenities and employment in their original place of residence, also for educational pursuit and to have themselves engaged in one form of business

Table 4: Correlates of Rural Urban Migration

Causes of migration	Frequency	Percentage (%)	Ranks
No good job opportunities	206	69.13	1 st
No good school	102	34.23	3 rd
Under development	161	54.03	2 nd
Poor socio amenities	70	23.49	4 th
Inadequate skills acquisition center	96	32.21	5 th
Poor health care facilities	112	37.58	6 th

Source: field survey 2022

Effects of Rural-Urban Migration on Labor Availability for Arable Crop production

The result in table 5 showed that labor has become expensive (mean =3.16), labor has become scarce (mean=2.67), labor is very much available (mean= 1.91), laborers income have increased (mean=1.83). This implies that in the state, rural-urban migration had a major effect on the cost of labor (mean=3.16>2.50) and scarcity of labor (mean=2.67>2.50). The result is in consonant with Ofuoku and Aganagana,(2018) who studied effects of rural-urban migration and found that labor shortage were experience in almost every household by arable crops farmers and as a result there were uncultivated and under cultivated arable lands in hectares.

Table 5: Effects of Rural-Urban Migration on Labor Availability for arable Crop production

Statement	Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4	Score	Mean	Rank
Labor is very much available	67 (67)	201 (402)	20 (60)	10 (40)	569	1.91	3 rd
Labor has become expenses	67 (67)	19 (38)	230 (690)	37 (148)	943	3.16	1 st
Laborers income has increased	103 (103)	157 (314)	3 (9)	30 (120)	546	1.83	4 th
Labor has become scarce	38 (38)	50 (100)	163 (489)	42 (168)	795	2.67	2 nd

Source: field survey 2022

Cut-off score= 2.50 (≥ 2.50 = effects on labor availability < 2.50 no effects on labor availability)

Estimation of the influence of Socioeconomic Characteristics and Causes of migration to Rural-Urban Migration

the tobit regression analysis result revealed that socioeconomic characteristics and causes of migration significantly contributed to rural-urban migration (p=0.000<0.01), R² =0.71 implying that 71% of rural-urban migration in the state is accounted for by the socioeconomic characteristic of rural household heads

and the identified correlates of rural-urban migration. The socioeconomic characteristics are age, educational level, types of crop grown and migrant household members. Age significantly contributed to rural-urban migration ($p=0.008$). This indicates that age contributed to rural-urban migration, but is negatively related because the coefficient bore a negative sign. The implication is that as one gets older the tendency to migrate is reduced indicating that the younger a person is the more likely they will migrate. This agrees with Alarinma,(2018) who reported that youth migrate between the ages of 22-26years Educational level significantly contributed to rural-urban migration ($p=0.019$) indicating that the more educated a person is the more likely he will want to migrate. The implication is that with education one acquires more knowledge, skills and exposure. This is in consonant with Lawal and Okeowo, (2014) who stated in their work that people with higher education in the rural areas tends to leave the rural area to find a job that is commensurate to their skills in urban centers. Number of children significantly contributed to rural-urban migration ($p=0.000$). This implies that the larger the number of children the more the need to migrate due to the fact that there will be need to source for more income in other for them to be adequately taken care of. Types of crop grown significantly contributed to rural-urban migration ($p=0.007$). This indicates that types of crop grown is significant but negatively related because the coefficient bore a negative sign. The implication is that a unit decrease in the type of crop grown will contribute to rural-urban migration. Migrant household members significantly contributed to rural-urban migration ($p=0.02$) this indicates that the presence of migrant household member in the family contributed to rural-urban migration. The implication is that as family members back comes in contact with visiting migrant’s household members they will be enticed and thus will have the push to migrate.

The identified causes that significantly contributed to rural-urban migration in the States includes lack of good job opportunities, underdevelopment, and poor social amenities. Lack of good job opportunities significantly contributed to rural-urban migration ($p=0.033$) this indicates that the absence of good job opportunities in the rural area will lead to rural- urban migration. This is in agreement with Raveinstein model (1885) cited by Ango et al (2014) that states that people move from areas of fewer opportunities to areas of perceived opportunities Underdevelopment significantly contributed to rural-urban migration ($p=0.010$) this indicates that the negligence and underdevelopment of rural areas contribute to rural-urban migration. Poor social amenities significantly contributed to rural-urban migration ($p=0.021<0.05$) this implies poor social amenities may serve as a push factor towards migration.

Table 6: Estimation of the influence of socioeconomic characteristics and causes of migration to Rural-Urban Migration

Variables	Coefficient	Std. Err	T	P>/t/
Age	-0.0890140	0.0239651	-2.14	0.008
Marital status	0.0088014	0.0293945	0.30	0.765
Gender	-0.0947047	0.0630623	-1.50	0.134
Educational level	0.0783893	0.0331487	2.36	0.019
Household size	0.0671421	0.0342143	2.46	0.041
Dept relative	0.0543373	0.0297733	1.83	0.069
No of children	0.9705962	0.0225246	3.09	0.000
Family income	2.146071	4.14067	0.52	0.606
Occupation	-0.0393251	0.0299282	-1.31	0.190
Types of crop grown	-0.1148597	0.0420685	-2.73	0.007
Farming experience	-0.007678	0.0063615	-1.21	0.228
Migrant household member	0.8413361	0.0681421	3.01	0.013
Lack of good job	0.0778965	0.0521563	2.71	0.033

opportunities				
No good school	0.0070581	0.0141817	0.50	0.617
Underdevelopment	0.0923836	0.0425167	2.79	0.010
Poor health care facilities	-0.0008014	0.0041981	-0.19	0.849
Inadequate skills acquisition center	0.0035452	0.003986	0.89	0.374
Poor social amenities	0.0896035	0.0974368	2.83	0.021
Constant	1.119486	0.2821175	3.97	0.000

Probith>chi2=0.0000 source: field survey 2022

R²=0.71

Conclusion and recommendations

The study focused on the effects of rural-urban migration on labor availability for arable crop production among rural households in Edo State Nigeria, based on the results from the study it was found that women were heads of rural household in Edo state, each rural household loses 3 persons to temporary and permanent migration and they all fall under the age grade of between 22-28years. Rural-urban migration had an effect on the cost of labor as it is very expensive and scarce. The findings also revealed that age, level of education, migrant household members, underdevelopment and lack of good job opportunity significantly contributed to rural-urban migration. It was recommended that Government and stake holders should put in effort to develop the rural areas, create job opportunity in the rural areas, introduce technology driven agriculture to the rural areas to be able to keep the youths in the rural area and provide social amenities.

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Corresponding Email: abusheprecious@gmail.com