Effect of Rural-Urban Migration on Food Security of Rural Households in Kwande Local Government Area of Benue State

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Authors' contributions

This work was carried out in collaboration among all authors. Author IS designed the study, wrote the protocol and wrote the first draft of the manuscript. Author ASA managed the literature searches. Author NS performed the statistical analysis and managed the analyses of the study. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

This study investigated the effect of rural-urban migration on food security of rural households in Kwande local government area of Benue State, Nigeria. Using multistage sampling technique and a semi-structured questionnaire as instrument, data for the study was collected from a sample of three hundred and eighty nine (389) rural dwellers in the state. The study revealed the major causes and determined the effect of rural-urban migration on the food security of Kwande local government area and suggested measures to reduce the rate of rural-urban migration. Given that the F- statistics of 98.094 is significant at 1% level of significance, it implies that the computed F-value was higher than the F-tabulated value of (1.94) at 5% level of significance and (2.51) at 1% level of significance. Therefore, the alternative hypothesis which states that factors such as search for job, quest for skill acquisition, search for better education, quest for marriage, insecurity, social amenities, and natural disasters are the determining factors of rural urban migration was accepted.

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Therefore, the study concluded that reduction of rural-urban migration and improvement in food security are dependent on these factors. Based on the effects of rural-urban migration, it was recommended that government/policy makers come up with policies that would lead to increased rural development and farm mechanization.

Keywords: Rural-urban migration; effect; food security.

1. INTRODUCTION

A large percentage of the world's poor live in the rural areas. According to estimate by the international fund for Agricultural development, the percentage of the rural poor is close to 75% of the world's poor and majority live in developing countries in South Asia, East Asia and sub-Saharan Africa [1]. One of the similarities of these developing countries is that small scale subsistence farming is the most prominent occupation in their rural economies. In Nigeria, small farm holders account for approximately 81% of the total farm holding [2]. In other words, agriculture is an important channel for encouraging pro-poor growth in developing countries. There is ample evidence to show that agriculture continues to contribute significantly to economic growth and to the reduction of poverty and food insecurity. As [3] points out, most of the countries that have failed to launch an agricultural revolution remain trapped in poverty, hunger, and economic stagnation.

One major concern on rural-urban migration is the attendant effect on agricultural production generally and food security in particular. Admittedly, the movement of people from rural to urban areas is a common occurrence in Nigeria. The movement poses some problems both in the rural areas and in the urban centres as well, though, there may be some benefits derivable from it. With the increasing migration of able bodied youth to the urban centres, agricultural activities are left in the hands of the less productive and aged members of the rural populace. [4] agrees that rural-urban migration leads to lalour scarcity, as potentially productive labour is drawn away from the village. The implications of this trend are low agricultural productivity and food insecurity, especially at the rural household level. [5] had explained that in most rural areas, the impact of rural-urban migration is a rapid deterioration of the rural economy leading to chronic poverty and food insecurity. [6,7] similarly noted that rural-urban migration have been associated with decline in food production, farming activities, fishing, urban congestion, infrastructural facilities in the urban areas among others.

The patterns of rural-urban migration in Sub-Saharan Africa are multifaceted. People may be forced to move as a result of cultural, demographic, socio-economic, environmental and or political factors. Mostly the decision to move is influenced by a mixture of several aforementioned factors. Other reasons of migration may be political and ethnic conflicts, natural disasters or processes like land grabbing, large scale infrastructure projects and resettlement [8]. Current trends in mobility and migration in Africa also seem to have significant socio-cultural effects on households and communities.

One of the most noteworthy demographic phenomena faced by many developing countries in the world is the shortage of skilled labour and food security, and conversely the rapid population growth in the urban centres, which is largely caused by the prevalence of rural-urban migration [9]. Migration is a wide spread phenomenon, that any study made on an urban centre in Sub- Saharan Africa (SSA) of which Nigeria is part, will ever, deal largely with a population that was not born in the place. The mass migration of the labour force from agriculture and the declining soil fertility together threaten agricultural sustainability in the study area.

Food security is physical and economic access to sufficient, safe, and nutritious food to meet the dietary needs and food preferences by all people, at all times, for an active and healthy. The major elements of food security are adequate availability of food, adequate access to food, appropriate utilization of food, and protection of access to food. Food availability is derived from domestic agricultural output and net food imports at the national level. Food availability for farm households in rural areas means assurance that they can access sufficient food through their own production or through purchase from markets, given sufficient purchasing power. There are four dimensions to

food security: (i) availability of sufficient amount of food which is a function of food production (ii) stability of supply over time which depends on the ability to preserve/store produced food and supplement available food through imports if necessary. It means that households do not risk losing access to food due to adverse weather conditions, political instability or economic factors such as unemployment or rising food prices (iii) access to the available food which depends on income levels and its distribution. . Food access is ensured when households, and all individuals within them, have adequate resources to obtain appropriate foods for a nutritious diet. The key determinants of food access are economic, physical, political and socio-cultural factors, and (iv) food utilization which encompasses procurement, ingestion and digestion all of which are dependent on nutritional quality, education and health. Food utilization means ensuring nutritional.

The question that needs to be answered is what impact does this migration have on food security of rural households in Kwande? There the study was focused on determining the factors that cause rural-urban migration in Kwande Local Government Area; it determined the effect of rural-urban migration on rural household food security and Identified measures to reduce rural-urban migration and improve on food security of households in Kwande Local Government Area.

1.1 Hypothesis of the Study

Ho1 – Factors that cause rural urban migration such as search for job, quest for skill acquisition, search for better education, quest for marriage, quest for money, insecurity, social amenities, and natural disasters are not the determinants of rural –urban migration.

2. MATERIALS AND METHODS

This study was carried out in is Kwande Local Government Area of Benue State. Survey research design was adopted for this study. Kwande Local Government Area is bounded by several other local government areas. On the west, it is bounded by Vandeikya Local Government Area, Ushongo local government area on the North and Katsina-Ala local government on the North-West. On the South, it is bounded by Cross River State and in the East by the Republic of Cameroon. Kwande local government also shares a common border with Takum Local Government Area of Taraba State. The population of this study comprises of all rural

households in Kwande Local Government Area of Benue State. There are 56,506 households in Kwande Local Government Area [10]. A multi-staged sampling technique was used to select the respondents for the study.

Kwande Local Government Area is comprised of fifteen (15) political wards. Eight (8) wards were randomly selected from the fifteen (15) wards and thereafter one (1) community was randomly selected from each ward with a total of eight (8) communities. The total number of registered households in the eight (8) selected communities is 9356, [10]. This figure therefore forms the sampling frame. The sample size for each community was determined by a mathematical formula given by Taro Yamane

$$n = \frac{N}{1 + N(e)^2} \tag{3.1}$$

Where-

n = Sample size; N = Population size; e = Level of significance which is taken to be 0.05; 1 = Constant value

$$n = \frac{N}{1 + N(e)^2} = \frac{9356}{1 + 9356(0.05)^2} = \frac{9356}{1 + 9356(0.0025)}$$

$$= \frac{9356}{1 + 23.39} = \frac{9356}{24.39 \approx 34} = 389$$

Primary data for the study was collected using semi-structured questionnaire. A combination of analytical techniques was used for data analysis to achieve the objectives of the study; descriptive and inferential statistics were used in the analysis of the generated field data.

Objective one, two and three were realized with descriptive statistics such as frequencies, percentages and mean scores and standard deviation. For Objective one, a 3 point likert scale was used to determine the mean. The scale was as follows; Agree (3); Undecided (2) and Disagree (1). A bench mark of 2.0 was established by calculating the average of the score (3+2+1=6/3=2). Thus any factor with a mean point of 2 and above was regarded as a determining factor, whereas, factors with mean point of less than two were regarded as not determining factors of rural-urban migration.

Objective two was realized using the mean and standard deviation. A 5point likert-type scale was used to determine the mean. The scale was as follows; Strongly Agree (5); Agree (4); Undecided

(3); Disagree (2) and Strongly Disagree (1). A bench mark of 3.0 was established by calculating the average of the score (5+4+3+2+1=15/5=3). Thus any index from 3.0 and above were regarded as factors that affected rural household food security negatively, whereas, factors that are less than 3.0 were regarded as not having any effect on food security of rural households in Kwande Local Government Area of Benue State. Hypothesis of the study was tested using the multiple regression analysis.

2.1 The Multiple Regression Models

The choice of multiple regression analysis was informed by its statistical power to establish a relationship between variables. The test measured the amount of variability of the dependent variable that can be explained by the independent variable. The variable regression co-efficient indentified and estimated how independent variable included in the model best explained the variability in the dependent variable. The implicit model used for the analysis is given as follows:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8) \qquad (3.2)$$

Y= Household rate of migration

X_1= Search for job; X_2= Quest for skill acquisition; X_3= Better Education; X_4= Quest for money; X_5= Marriage; X_6= Insecurity; X_7= Social amenities; X_8 = Natural disaster; ei = Error term
The four functional multiple regressions were used to select the one that has provided the best fit.

The four functional forms are,

Linear Function

Y= b0+ b1x1 +b2x2 +b3x3+ b4x4 +5+b5x5 + b6 x6 + b7x7 +b8x8 + ei

Semi-Log Function

Y= b0 + b1log x1 + b2log2 +b3logx3 +b4log x4 + b5logx5 +b6logx6 + b7logx7 + b8logx8ei

Double Log Function

Log Y =b0 +b1logx1 + b2logx2 +b3logx3 + b4logx4 +b5logx5 +b6logx6 +b7logx7 b8logx8 ei

Exponential Function

Log Y= b0 + b1x1 + b2x2 + b3x3 + b4x4 +5 + b5x5 + b6 x6 + b7x7 +b8x8 + ei

The choice of the lead equation will judged based on the magnitude of the coefficients, explanatory power of the model (R^2), and the significance of the regression parameters and the F – statistic.

3. RESULTS AND DISCUSSION

Table 1 revealed that majority, 52% (203) of the respondents were females, majority 27% (106) were between the ages of 40-49 years, followed by the age bracket of 50-59 which was 22% (87). The result showed that majority 56% (233) of the respondents were married. This implies that there is greater number of married people in rural areas since migrating as a family is usually difficult and this also ensures household food security. The result also revealed that only 17% (67) of the respondents did not have formal education. This shows a very high literacy level which implies that majority may tend to migrate to urban areas in search of greener pastures. The more educated a farmer is the more likely he adopts an innovation which implies that the tendency of migration may be high due to high literacy level in the area. The result also revealed that majority of the respondents 38% (146) where farmers, 31% (120) were civil servants. This indicates that the major source of livelihood for the respondents was farming. Furthermore, the results in table I showed that 51% (197) of the respondents had household size of between 5-8 persons. Thus, the large household size might be of benefit to the rural farmers and processors since it has been observed in various studies that rural farmers depend mostly on their family members to provide labour on the farm [11].

3.1 Factors that Cause Rural-Urban Migration in Kwande Local Government Area

The result in Table 2 revealed that the major cause of rural-urban migration in the area included inadequate employment opportunities in rural areas (82%; $\bar{x}$ = 2.62); Quest for better education (64%; $\bar{x}$ = 2.32); Quest for money (89%; 2.82); Skill qcquisition (88%; $\bar{x}$ = 2.84); Inadequate social infrastructure in the rural areas (81%; $\bar{x}$ = 2.53); Exposure/Change of environment (74%; $\bar{x}$ =2.21); Poor medical care services in rural areas (81%; $\bar{x}$ = 2.54); To diversify source of income (89%; 2.83); Poverty (81%; 2.47); and lack of interest in farming (80%; $\bar{x}$ = 2.33). These factors had mean score higher than the average mean score (Bench mark of 2.0), and therefore are considered the

major causes for the rural-urban migration in the study area.

Other identified factors such as Quest for marriage (45%; $\bar{x} = 1.33$); Natural disaster (45%; $\bar{x} = 1.84$); Famine and drought resulting in hunger (48%; $\bar{x} = 1.63$); Displacement as a result of communal crises (40%; $\bar{x} = 1.24$); Desire for more political or religious power (49%; $\bar{x} = 1.70$) where not seen as a major reasons for migration in the area. Theses factors had their mean scores less than the bench march and therefore were not considered as reasons why people migrate from Kwande to cities.

The result is in support of the assertions of [12] that migration of people in search of greener pastures in urban settings is largely influenced by the employment status of the people involved in the migration process. The findings suggest an apparent existence of more job opportunities at the destination than at their places of origin and this is in tandem with findings by [13] who opined that migrants tend to have access to employment opportunities at their destinations than their hometowns or places of origin. In addition, urban areas offer many economic opportunities to rural people for changing jobs and becoming upwardly mobile even with a low asset base and few skills [14,8].

3.2 Effect of Rural-Urban Migration on Food Security of Rural Households

The result in Table 3 showed that a good majority 60% (223) of the respondents opined that rural-urban migration had a negative effect on agricultural productivity of the area with a mean score of 3.34. The result also revealed that the greatest majority 96% (374) of the respondents averred that rural-urban migration caused an increase in the cost of labour ($\bar{x} = 4.22$) while 88% (341) of the respondents indicated that migration of able bodied people from the area reduced agricultural labour force ($\bar{x} = 3.43$); Many farmers expressed that the effects were that the workload became bigger compared to when the migrants still lived at home. The findings also confirms the assertions of [15] that labour shortages emanating from the absence of major household labourers, combined with the unprofitable nature of agriculture, can result to progressive abandonment of previously cultivated distant farmland. Labour migration tends to check the increase in numbers of rural households because labour-migrant households are livelier than non-labour households to maintain a multi-

generational family structure, and thus may contribute to higher efficiency of rural household resource consumption.

The loss of the able-bodied people, the physically stronger and often of higher education, leads to a demographic imbalance in both the rural and the urban areas. In a broader aspect, this of course has implications for the future of agriculture since agriculture is, in one way; dependent upon the individual decisions that the rural inhabitants make concerning migration. The study showed that it was mostly the able-bodied that migrated to urban areas, which left the elders with labor shortages. Severe effects on the farm in the long run could therefore have occurred which also creates the necessity of new livelihood strategies. [16] opined that rural migration affects the local food security differently depending on the interaction between the left-behind and the migrant. A better food security could for example be established if the migrant sent remittance to the people left-behind.

3.3 Measures to Reduce Rural-Urban Migration and Improve Food Security in Kwande Local Government Area

Table 4 identified measures to reduce rural-urban migration and improve food security of rural household in Kwande Local Government Area of Benue State. The implication of the result is that rural development should be one of the major focuses of the government's efforts to improve food security in the rural areas. Expecting poor countries to quickly generate enough productive nonfarm jobs to pull large numbers of workers out of farming is totally unrealistic. If agricultural growth and small farms are neglected, then a mass exodus of small farmers could simply overwhelm countries in terms of the social, political, and environmental problems this will create. There is a lot that rural-urban migrants and other stakeholders can do to help small holder farmers improve their food security. The result also implies that if rural-urban migration must be reduced and food security increased, the government and the private sector must provide the rural farmers with access to essential farm inputs including fertilizer and seeds at subsidized costs or on credit basis. The findings of this study suggest that targeting women farmers for these inputs would be worthwhile.

The result also indicated that investment in rural industries, such as textile industries or food processing factories, is likely to create job

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opportunities for rural people, and reduce the rate of rural-urban migration and improve household food security. More importantly, farmers will be encouraged to produce more food some of which can be sold to the factories. While better access to off-farm income is likely to improve household income and reduce vulnerability to food insecurity, it may also reduce incentives for food production [17].

3.4 Test of Hypothesis

Four functional forms – linear, exponential, semi-log and double-log were tried for choice of a lead equation. F-ratio of the four functional form tried were significant at 1.0% risk level indicating that any of the four could be used for predictive purposes. But the double-log functional form was chosen based on the magnitude of the coefficient of multiple determinations (R^2), the significance of the regression coefficients, the number of significant variables and the signs of the significant variables as they conform to the significance of the entire model as shown by the F- statistic. The value of the coefficient of multiple determinations (R^2) was 0.952,implying that about 95.20% variability in the factors that cause rural-urban migration was explained by the above probability indicating a goodness of fit of the regression model. The F- statistic was significant at 1% implying that the entire model was well specified.

The coefficient of search for better education was positive (1.826) and significant at 10% alpha level. This implies a direct relationship. It means that a unit increase in this variable will increase rural-urban migration by 1.826 times.

Table 1. Background information of respondents in Kwande local government area

Variables	Frequency	Percentage
SexMale	186	48
Female	203	52
Total	389	100
Age		
20-29	36	9
30-39	58	15
40-49	106	27
50-59	87	22
60-69	65	17
70-79	37	10
Total	389	100
Marital Status		
Single	86	22
Married	233	56
Divorced	15	4
Widowed	55	14
Total	389	100
Educational Level		
No forma education	67	17
Primary	99	25
Secondary	132	34
Tertiary	91	23
Total	389	100
Occupation		
Civil Servant	120	31
Trading	62	16
Farming	146	38
Artisan	61	16
Total	389	100
Household size		
1-4	101	26
5-8	197	51
9-12	91	23

Source: Field survey 2018

Table 2. Determining factors of rural-urban migration in Kwande local government area

Factors	Frequency	Percentage	Mean $(\bar{x})$
Inadequate employment opportunities in rural areas	312	82	2.62
Quest for marriage	176	45	1.33
Quest for better education	248	64	2.32
Natural disaster	176	45	1.84
Quest for money	347	89	2.82
Skill acquisition	339	88	2.84
Business	298	77	2.42
Inadequate social infrastructure in the rural areas	314	81	2.53
Exposure/Change of environment	287	74	2.21
Poor medical care services in rural areas	315	81	2.54
To diversify source of income	345	89	2.83
To overcome constraints on economic andinvestment	276	71	2.22
Poverty	316	81	2.47
Famine and drought resulting in hunger	187	48	1.63
Lack of interest in farming	311	80	2.33
Displacement as a result of communal crises	156	40	1.24
Desire for more political or religious power	189	49	1.70
Bench Mark			2.0

Source: Field survey 2018. Multiple response table

Table 3. Effect of rural-urban migration on rural household food a security in kwande local government area

Effect	Frequency	Percentage	Mean $(\bar{x})$	SD
Low agricultural productivity	223	60	3.34	0.88
Reduced food availability at home	102	26	1.27	1.01
High cost of labour	374	96	4.22	0.83
Reduced agricultural labour force	341	88	3.43	0.94
Reduced food accessibility	173	44	1.94	1.08
Reduced cultivated area of land for household	283	73	3.72	0.77
Reduced food production	342	89	3.64	0.61
Reduced income from farming	317	81	3.91	0.84
Reduced household food consumption	147	37	1.57	1.03
Number of respondents			389	
Decision mean score			3.00	0.89

Source: Field survey 2018

Table 4. Strategies for reducing rural-urban migration and improving rural household food security

Strategies	Frequency	Percentages
Provision of basic amenities such as schools, pipe borne water and electricity	345	89
Establishment of vocational training centers for skill acquisition	365	94
Provision of incentives such as microcredit for youths in agriculture	314	81
Rural industrialization especially establishing agro –processing industries	378	97
Provision of labour saving devices for easy farm operation	335	86
Subsidizing prices of farm inputs such as fertilizers, herbicide and pesticide	367	94
Provision of improved varieties of crops and breeds of livestock	374	96

Source: Field survey 2018

Table 5. Regression analysis of the determining factors of rural-urban migration

Variable	Linear	Exponential	Double-log[L]	Semi log
Constant	0.18	0.009	-0.368	1.076
Search for job	-5841.076(-2.032)**	0.019(0.931)	1.417(3.517)***	-5011073 (-0.290)
Quest for skill acquisition	0.207(0.321)	-3.78E-06(-0.846)	0.257(1.198)	21323.80 (0.538)
Search for better education	1.916(0.321)	7.89E-06(0.320)	0.195(1.862)*	229738.4 (11.863)***
Quest for money	0.647(0.541)	1.76E-05(2.124)**	0.951 (4.502)***	117379.9 (3.007)***
Quest for marriage	-301.114(-0.919)	-0.011(-4.680)***	-28.936(-1.741)*	-2652376 (3.007)***
Insecurity	-32170.86(-2.806)***	-0.146(-1.844)*	-2.166 (-3.936)***	190982.6 (-1.878)*
Social amenities	-75615.07(-3.504)***	-0.105(-0.704)	-0.580 (1.302)	-196748.6 (-1.228)
Natural Disaster	5262.610(2.405)**	0.033(2.184)**	0.958 (2.510)**	36831.79 (0.522)
R^2	0.923	0.935	0.952	0.908
Adj. R. Squared	0.912	0.926	0.946	0.894
F-statistics	82.593***	99.330***	98.094***	67.824***

Source: Field survey, 2018Note: ***, **, and * indicates statistically significant at 1 percent, 5 percent and 10 percent level of significance respectively. [L] stand for the lead equation and the values in parenthesis are t-values

The coefficient of search for job was positive (3.157) and significant at 1%percent alpha level. The result implies a positive and direct relationship which means that a unit increase in the search for job will increase in rural-urban migration by 3.157 times. The coefficient of quest for money was positive (4.502) and significant at 1% level of significance. This means that as the quest for money increases, rural-urban migration will in increase by 4.502 units. The coefficient of natural disaster was also found to be positive (2.510) and significant at 5% level of significance. This implies that any increases in natural disaster will lead to increase in rural-urban migration by 2.510 units. The coefficient of quest for marriage was negative (-1.741) and significant at 10% alpha level. This implies an indirect relationship which means that as quest for marriage increases, rural-urban migration will reduce by 1.742 units. This could be because of the fact that city men believe that women or girls in the village are more reserved and marriageable than city ladies so they tend to marry more in the village than in the city. This explains why most of the sampled respondents were married. The coefficient of insecurity was negative (-3.936) and significant at 1% level of significance. This implies an indirect relationship which means that a unit increase in the insecurity of the area will lead to a decrease in rural-urban migration. This is because able bodied men will rather stay back to defend their community and families than migrate to the city.

Given that the F- statistics of 98.094 is significant at 1% level of significance, it implies that the computed F- value was higher than the F-tabulated value of (1.94) at 5% level of significance and (2.51) at 1% level of significance. Therefore, the null hypothesis that Factors that cause rural urban migration such as search for job, quest for skill acquisition, search for better education, quest for marriage, insecurity, social amenities, and natural disasters are not the determinants of rural –urban migration rejected and the alternative hypothesis which states that factors such as search for job, quest for skill acquisition, search for better education, quest for marriage, insecurity, social amenities, and natural disasters are the determining factors of rural urban migration was accepted. Therefore, the study concluded that reduction rural-urban migration and improvement in food security are dependent on these factors.

4. CONCLUSION/RECOMMENDATIONS

People tend to move to places where they expect potential income generating opportunities to be greater than in their area of origin. Rural-urban migration negatively impacts on the quality of rural life, especially when such migrants move

away with their needed productivity into the urban areas. Migration of young adults from the rural to urban areas places a greater burden on the farming household. Therefore the study recommends the development of rural areas as a measure of ensuring food security in the rural areas.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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