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# THE NEXUS BETWEEN CROSS BORDER MIGRATION AND FOOD SECURITY IN NIGERIA AND BENIN REPUBLIC, 2010-2017

**IFEOMA ETHEL EZEABASILI[1*] AND B. O. G. NWANOLUE[1]**

[1]Department of Political Science, Chukwuemeka Odumegwu University, Igbariam, Nigeria.

**AUTHORS' CONTRIBUTIONS**

This work was carried out in collaboration between both authors. Author EIE initiated the study, performed the statistical analysis wrote the first draft of the manuscript and managed the literature review. Author BOGN managed and supervised the work. In fact, this work is a chapter from my Ph.D thesis which was supervised by author BOGN. Both authors read and approved the final manuscript.

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## ABSTRACT

This paper examined the nexus between cross-border migration and food security in Nigeria and Benin Republic. The study utilized secondary data from the International Organization for Food and Agricultural Organizations, World Bank Indicators, International Organization for Migration, National Bureau of Statistics, to mention but a few. Classical Migration theory was the theoretical framework for the study and the data were analyzed using descriptive statistics and Pearson correlation coefficient. The study's findings revealed; a weak negative correlation between Cross border migration and food consumption expenditure in Nigeria and the Benin Republic; a positive but weak correlation between cross-border migration and the food production index in Nigeria and Benin republic. The study concluded no significant relationship between cross-border migration and food security in Nigeria and Benin republic. Thus, the study further recommended that both Nigerian and Benin republic governments encourage and provide economic opportunities to the rural populace beyond the farm level; Promote rural-urban fiscal relationships and invest in productive sectors that will generate better economic opportunities.

**Keywords:** Cross migration; food security; remittances; consumption expenditure; food production index.

## 1. INTRODUCTION

The zeal for employment and greener pasture induce migration within countries and across their borders, so migrants from local communities filled cities and towns. While economically viable regions became an attraction for migratory destinations [1]. Nigeria is a big brother to other West African countries, including the Benin Republic, in numerical strength, diversity, and socio-cultural power. According to Adepoju [2], West Africa has experienced migrations motivated by population pressure, poverty, poor economic performances, and internal conflicts. It is therefore imperative to set migration trends between Nigeria and Benin Republic in a proper historical perspective.

The pre-colonial migration in West Africa took place mainly to secure new land safe for habitation and fertile for farming. Colonialism thwarted the drive and composition of migration by introducing and imposition of different types of political and economic structures, imposing tax regimes, and

**Corresponding author: Email: ie.ezeabasili@coou.edu.ng;*

establishing territorial boundaries. This development resulted in large-scale movements of people, given rise to patriarchy, seasonal and cross-border migration which over time became legitimized. According to Amin [3], the colonial period encouraged large-scale labour migration required for plantations, mines, and public administration beyond home supply.

Various economic measures, including compulsory retirement, contract, and forced labour legislation and agreements to secure cheap labour, gave rise to undercover internal and cross-border migration of untrained adult males needed for infrastructural work, especially transport system in the north and plantation agriculture in the coastal countries. Thus, the modern migration patterns in West Africa are driven by socio-economic, political, historical, and cultural factors, Hunger, search for fertile land, and better income which has informed the direction of development and types of economic activities and laid the design for international migration.

Cross-border Migration between Nigeria and the Benin Republic includes temporary, clandestine workers, female and male traders, farm workers, cross-border workers, professionals, and refugees. In the early 1970s, Nigeria became a significant migration receiving country because of oil-led employment in various sectors of the economy [4]. This was short-lived because of harsh economic conditions that led to a job crisis leading to the mass exodus of the citizens across the state boundaries.

Benin republic also is a transit and re-exportation country because goods from Asia, Europe, and America find their way into West Africa through the Benin Republic. However, opinions are divided on the relationship between Cross border migration and food security. For instance, scholars such as Shi, Ling-Ling, Waibol, Ji-Kim &Yue–Ying, [5]; Tagaje, [6]; Crush, [7]; Nguyen & Winters, [8]; Karamba, [9] argued that there is a relationship between cross border migration and food security. On the contrary, Karamba & Winters (2011) Ghana; Ramano & Traverso [10] Bangladesh; Sithole & Dinabo (2014) South Africa posits that there is no relationship between cross-border migration and food security. Against these conflicting views, this study on cross-border migration and food security in Nigeria and Benin Republic, 2010- 2017 is hypothesized.

## 2. LITERATURE REVIEW

Cross-border migration is the movement of people across national boundaries. This is the most dynamic feature of population distribution since the creation of the universe [1]. Food security, according to FAO [11], is a situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

However, are series of controversies on the impact of cross-border migration on food security. For instance, Ambler, De Brauw and Hildebrandt, [12]. Argued that migration can also enhance food security for both migrants and left behind relatives, particularly in the rural areas. The departure of family members may trigger a complex shift in the household they left behind. Pressure on specific resources reduces, increasing the availability of food for remaining household members. Still, at the same time, when a vital labourer (unskilled labourer within the productive age bracket) leaves the household, it creates a vacuum, especially family in the agricultural sector. Though remittances sent home by migrants can also assist the family members in the making up for the lost labour and, in many cases, even provide more income before migrating.

Further, studies on the relationship between migration and food security are replete in the literature. For instance, studies such as [13] and [14] revealed that food insecurity is one of the causes of migration. Contrary to the above views, the works of Deshingkar [15] and Warner and Afifi [16], found out that environmental and financial shocks limit the availability of food and increase costs coupled with the weak institution and unemployment contributed to migration.

Again, there are scholars on the impact of migration on food security: some argue that migration improves food security by funding, investing in agriculture, or purchasing food. For instance, Barreto [17] examined the relationship between emigration and food security in 22 communities in three countries, namely El Salvador, Guatemala, and Honduras, and its impact on nutritional security. The study revealed a relationship between emigration and food insecurity. They were suggesting that emigration negatively impacts the family members that are left behind. In another study, Shi, Ling-Ling, Waibol, Ji-Kun, and Yue-Ying [5] investigated the impact of food consumption and nutrition of left-behind family members evidence from a minority mountainous region of South-Western China. The finding indicated that the movement of family members contributed to improving household net earnings.

In contrast, it negatively affected the left-behind family members' intake of grain and pork. Quinones, Karamba, and Winter [18] examined the relationship between migration and food consumption patterns in

Ghana using data from a thousand and one hundred and thirty (1,130) households. The findings indicated that migration does not significantly impact total food expenditure per capita and has little effect on food expenditure patterns. In a similar study, Romano and Traverso [10] investigated the impact of international migration on food and nutritional security of left-behind Households for Bangladesh. The study revealed that international migration negatively impacts the quantity, quality, and variety of food consumed by left-behind households.

According to Barreto [17], voluntary migration can also improve the food security of migrants and families left behind, especially those residing in rural areas. He further reiterated that the departure of family members might trigger a complex shift in the households they left behind. As pressure on financial resources declines, increasing the availability of food for remaining household members. Still, at the same time, money sent home (remittances) by migrants can assist the family members in making up for the lost labour. In many cases, migration of family members contributed to improving household net income while negatively impacting the left-behind family members' consumption of pork and grain.

In a study, Ofuoku [19] analyzed the contributions of rural-urban migrants remittances on household food security in the Agricultural central zone of Delta State, Nigeria. Analyzing the data with descriptive statistics revealed remittances from migrated household members had a significant and positive relationship with household food security. Similarly. In a related study, Rosenzewig and Stark [20] investigated the impact of migration on consumption smoothening and marriage in rural India. The findings indicated that migration contributed significantly to a reduction in household food intake variability. Farm households affected with more variable profits tend to engage in longer-distance marriage cum migration.

In a similar vein, Airola [21] examined the impact of remittances on households and communities in Mexico; and the findings revealed that remittances receiving families spend a more significant amount of their total income on durable goods and healthcare; and housing. The study of Lall, Selod, and Shalizi [22] analyzed rural-urban migration in developing countries, surveying the existing theoretical model; the findings indicated that migration is a gainful phenomenon. It also revealed that remittances from migration increase consumption and promote living standards in the short term and the long-term bring about the development of rural areas. However, Durand, Kandel, Parrada, and Massey [23] investigated the nexus between international migration and development in Mexican sending communities using variables at individual household, community, and macroeconomic levels. The findings revealed the multiplier effect of remittances under which United States earnings are sent to Mexico as savings, even though the left-behind use them for consumption expenditure. In assertion, the work of De Haas [24] suggest that remittances increased the level of consumption of migrant-sending-households and created a multiplier effect on locally produced goods. Corroboratively, Ratha [25] examined workers' remittances as a stable source of external development finance. The findings revealed that remittances play an essential role in the advancement of migrant-sending economies.

## 2.1 Cross Border Migration and Food Consumption Expenditure

On the studies of expenditure pattern of migrant sending-households, few studies focused on the impact of migration on food consumption expenditure. Among such studies, only a few went further to examine the nexus between migration and food expenditure on nutrition or food security. The two significant studies that focused on the relationship between migration and food security are the studies conducted by Nguyen & Winters [8] in Vietman and Karamba et al. [9] in Ghana. The study in Vietnam revealed that short-term migration considerably contributed to food consumption and food security. Similarly, in Ghana, Karamba et al. [9] utilized food consumption patterns as measured by expenditure to examine the relationship between migration and food security; the findings indicated that food expenditures increase only in the high mobility area.

There are two lines of thought on the measures of migration. Some of the studies opined that the impact of migration is evident in remittances. So they measured the effect of remittances on the expenditure patterns of migrant-sending households (MSH's). However, the other studies conducted by Taylor & Mora [26] have noted that remittances might not be sufficient to capture the effect of migration, as migration can have impacts farther than on factors such as information, knowledge, or alteration in MSH's labour supply. Nevertheless, as Mora and Taylor [26] noted regarding expenditure outcome, the remittance impact is not different from the migration impact. They described migration narration as a mechanism for cross-border migration choice. They revealed that financial plan share on investments, health, and consumer durables is enormous compared to food and housing.

Similarly, Gobel [27] employed the remittances approach to examine the household expenditure pattern in Ecuador. The findings indicate that remittances considerably increase education, health, and housing but reduce food expenditure. In measuring migration, studies are not limited to internal, international, and rural-urban migration but also the duration of the movement period, which is a crucial factor that can have consequences on the result of the movement. However, the study by Chandrasekhar, Das, & Sharma [28] examined the impact of Short-Term-Migrants (STM) on food consumption expenditure in India, while Nguyen and Winters [8] in another study differentiated between short-term and long-term migrants in Vietnam. Both studies utilizing instrumental variable approaches reported contradictory impacts on food consumption. In India, Migrant-Sending-Households (MSH's) and Short-Term-Migrants (STM) have reduced per capita food consumption compared to non-migrant households. In Vietnam, short-term migration raises per capita food expenditures. Long-term migrants from Vietnam have the likelihood to live permanently in host countries once they settle, so they have a weaker relationship and remit less to their home country compared to short-term migrants.

They were preceding the re-conceptualization of food security by the World Food Summit [29]. Food security was defined and interpreted in various ways. For instance, in these studies that examined the direct nexus between migration and food security, Fransen and Mazzucato [30] employed an indicator of the frequency of difficulties in food needs in Burundi. In another study, Anaglo, Sakyi-Dawson, Boateng, and Mahama [31] measured food security utilizing food availability in Ghana. These studies revealed different results of migration. In Burundi, remittances improved the household living conditions and food security index in the lowest group of the asset index. On the contrary, the findings in Ghana showed no significant differences in the food availability of migrant-sending communities. The two studies' simple food indicators contributed to a preliminary examination of the direct relationship of migration to food security, but food security involves more than just meeting food availability [32].

Contrary to this view, Matemiola and Elegbede [33] examined the challenges to food security in Nigeria employing secondary data and literature analysis. The findings suggest that enormous financial resources from the oil sector distorted the Agricultural industry. The study also revealed that insufficient production, gender disparity, inefficient policies, corruption, conflict, climate change, civil insecurity, low technology for storage and processing are significant obstacles impeding food security in Nigeria. Similarly, Ayinde, Torimiro & Koledoye [34] examined the effects of youth migration on Agricultural production in Osun State, Nigeria, employing a two-stage sample procedure of 295 farmers in selected farming communities; is negatively correlated with youth migration. In another study, Sithole and Dinbabo's [35] works examined the interrelationship between youth migration and food security in Cape Town, South Africa, using survey techniques and descriptive statistical analysis. The study found out that the leading cause of migration from Zimbabwe to South Africa was mainly due to socio-economic crisis and, to some extent, political reasons. The study further revealed that access to food is a significant obstacle for migration in general and lack of dependable income, specifically for youth migration. Laborde, Bizikova, Lallement, and Smaller [36] investigated the relationship between Hunger and migration in a related study. The study revealed that economic growth could reduce migration; it also revealed that there is no clear link between migration and Hunger.

Two studies employed a combination of household food security indicators. In another study, Crush [7] examined migrants at the Urban areas of destination by comparing the food security between migrants and non-migrants in Southern Africa, concentrating on the assumption that poor migrants contributed to agricultural production in rural areas of their destination Tanzania. While Tageje's [6] study found out that migration enhances food security in the rural area of destination, concurring, Crush's findings also indicated that migrants in urban areas are more likely to be food insecure than non-migrants.

## 2.2 Theoretical Exposition

This study adopted the classical Migration theory propounded by Ravenstein [37]. This theory explains the form and origin of migration within a country and across boundaries and also the importance of Cross-Border Migrations to nation-states [38]. According to Ravenstein, it is impracticable to detach expansion from movement. He publicized the seven laws of migration which are; "(1) Migration depends on distance (2) Migration takes place in phases(3) Every successful migration process is gifted with a migrating plan flow (4) Most times the natives in their territory have less level of (educational qualifications) than the fellow counterparts (migrants) (5) Gender of the migrants (6) There is a relationship between the level of technology, several migrants and distance traveled economic interests have always influenced (7) Migration."

According to Haas [39], other scholars who also contributed to this theory are Lee, among others [39]. According to Lee, the dynamic need for opportunities and enhancement of one's standard of living often drives Cross-Border Migration. However, cross border migration usually occurs when the benefits from the "pull" factors at the destination country - outweighs the "Push" factors at the individual's country of origin, These "push" and "pull" factors, according to Donald, is referred to as Negative (Push factors) and Positive (Pull factors). These "Push" and "Pull" factors (determinants of migration) by most scholars are demographic, economic, environmental, and social. Myrdal and Prothero opine that only "Push" factors are responsible for Cross-Border Migration. In contrast, others oppose the statement revealing that the combination of "Push" and "Pull" factors are responsible for the migrant's decision in leaving their territory [39].

According to Lee [40], "pull" and "push" migration theory positively and negatively represents migration since migration is motivated by two (2) factors which are the "pull" and "push" elements. Lee also recognized certain aspects that can encumber Cross-Border Migration between the two (2) countries [39]. Lee's contribution reveals why Cross-Border Migration occurs and why many individuals find it challenging to migrate.

Lee, cited in Haas [39] addition reveals that; "(1) Migration is insightful. This choice can be positive or negative. It is hopeful for the wealthy migrant and negative for the opposite individual. (2) Most migrants who retort to the "pull" factors are selective about their destinations since they only want to move because of their desire and obvious opportunities out there. (3) Migrants who retort to push factors are negatively looking for an opportunity to migrate out to another destination. Some of these people predisposed by "push" factors are more of the illegal and undocumented migrants. These two (2) categories of migrants are; the one prone by the pull factors (predisposed by positivity) in the destination countries and the other influenced by the "push" factors (influenced by pessimism) at the state of origin. (4) The degree of "pull" factors (optimism) at the destination countries determines the level of difficulties and the challenges encountered in the entrance into the destination countries due to the high cost of migration and immigration restriction in those destinations countries. (5) the youth are the most welcomed in the destination countries; they are within the productive age (15-64yrs) that will add up to the labour force. (6) These migrants are the center of the "pull" factors of the receiving state and the "push" factors of the source of origin. In as much as people migrate for better opportunities, they also assist the receiving countries by increasing their labour force which invariably contributes to the productivity of the economy of the destination countries. The highlight of Lee's Oriented Approach ("pull" and "push" migration theory), Postulates that Cross-Border Migration is determined by the "Pull" and "Push" factors. The human mobility back and from Nigeria can be best explained within the Push and Pull migration theory. People move in search of a better standard of living, food security, secured environment, etc.

## 3. METHODOLOGY

This study sourced secondary data from, Journals, books and the official Archives of reputed organizations, such as the online database of the World Bank Development Index [41], World food programme report, for Food and Agricultural Organization and World Bank Governance Indicators, IOM, CHS, ICHR, UNDP, etc.

### 3.1 Method of Data Analysis

Descriptive Statistical measures such as tables, percentages and Graphs were used in the analysis of trend. Also the Pearson Correlation Coefficient was also employed to establish relationship between the variables of cross border migration (X) and food security (Y) in Nigeria and Benin Republic. The 2 tailed test at 0.1 and 0.05 levels of significance was used to test the hypothesis of the relationship between the variables.

The formular for Pearson Correlation is $r = \frac{n\varepsilon xy - \varepsilon x.\varepsilon y}{[\varepsilon x2 - [\varepsilon x2]\,[n\varepsilon y2 - (\varepsilon y)2]}$ r tale is values between -1 and 1 hence $-1 \leq r \leq 1$

### 3.2 Data Presentation and Analysis

The trend in cross border migration for Nigeria and Benin Republic are relatively stable and feeble during the period (2010 to 2017). This indicates a normal flow of persons across Nigeria and the Benin Republic, depicting a gradual rise over time. This implies that the citizens of both countries are incessantly leaving for greener pastures.

**Table 1. Descriptive Analyses of the relationship between Cross Border Migration and food security in Nigeria and Benin Republic**

| YEAR | Nigeria | | | Benin | | |
|---|---|---|---|---|---|---|
| | Migration (as % of Pop) | Consumption Expenditure | Food production index | Migration (as % of Pop) | Consumption Expenditure | Food production index |
| 2010 | -0.15 | 77.72 | 85.36 | -0.46 | 77.71 | 106.24 |
| 2011 | -0.20 | 80.58 | 88.89 | -0.47 | 75.48 | 99.39 |
| 2012 | -0.18 | 73.99 | 94.43 | -0.43 | 73.60 | 105.93 |
| 2013 | -0.22 | 75.16 | 99.59 | -0.32 | 76.70 | 104.1 |
| 2014 | -0.19 | 63.25 | 105.97 | -0.21 | 76.39 | 89.98 |
| 2015 | -0.19 | 77.57 | 99.23 | -0.12 | 74.28 | 93.57 |
| 2016 | -0.07 | 65.24 | 105.45 | -0.10 | 75.02 | 119.35 |
| 2017 | -0.17 | 75.21 | 93.29 | -0.09 | 73.19 | 122.92 |

*Source: World Bank Development Index [41], 2018 edition.*

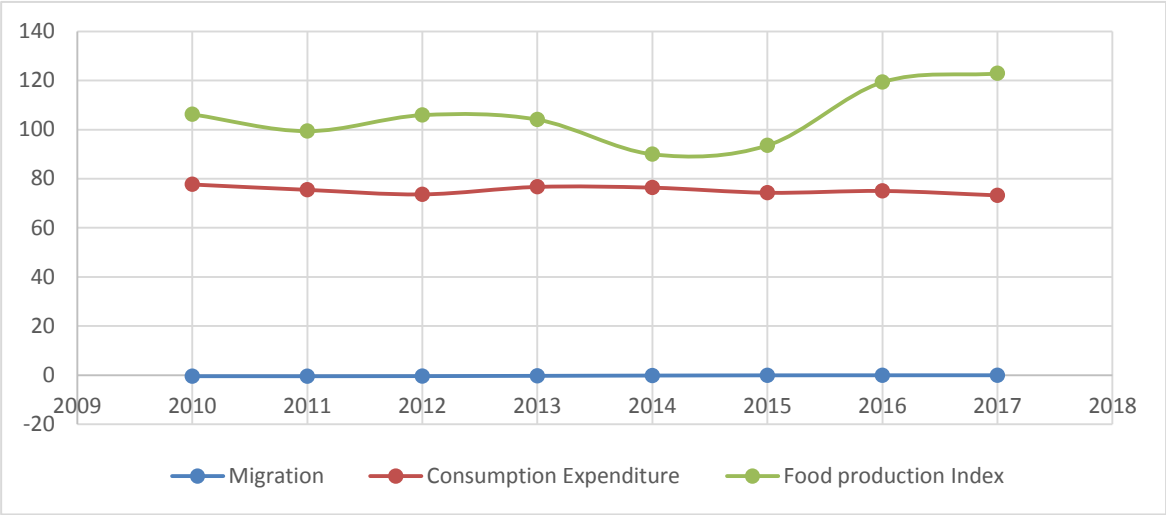


**Fig. 1. Trend analyses of the food security and cross border migration in Nigeria**

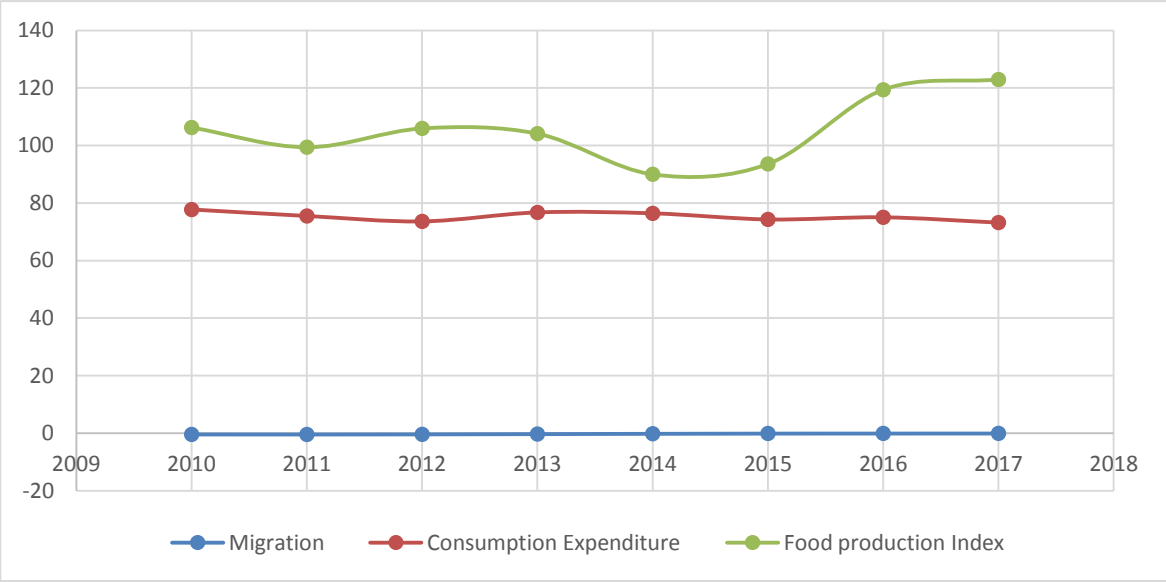


**Fig. 2. Trend analyses of the food security and cross border migration in Benin Republic**

**Table 2. Correlation betweeen net migration and food security in Nigeria and Benin Republic**

| | | Cross Border Migration in Nigeria | Cross Border Migration in Benin Republic |
|---|---|---|---|
| Consumption Expenditure | Pearson Correlation | -.466 | -.442 |
| | Sig. (2-tailed) | .244 | .273 |
| | N | 8 | 8 |
| Food production index | Pearson Correlation | .220 | .290 |
| | Sig. (2-tailed) | .600 | .486 |
| | N | 8 | 8 |

*** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed)*

Food security is the propensity to feed adequately from food production. Food security can be measured with consumption expenditure and the food production index. Consumption expenditure measures the propensity to afford quality and a balanced diet, while the food production index captures the growth tendency of food production per population. The influence of cross-border migration on food security is shown in Figs. 1 and 2 for Nigeria and the Benin Republic, respectively.

Fig. 1 shows the trend of food security variables (consumption expenditure and food production index) and cross-border migration in Nigeria. The result depicts that consumption expenditure and food production index are rising. However, consumption expenditure remained relatively stable while the food production index gyrates as the trends surge. Within these periods, the migration timeline tends to remain relatively stable moving on a steady-state. It suggests that food security seems not to relate to cross-border migration.

Fig. 2 depicts the trend of food security for the Benin Republic. The trends of consumption expenditure seem to gradually decrease over time. This suggests a gradual sustainable reduction in the cost of living. The food security in the Benin Republic improves in recent times in terms of consumer spending. In terms of production index, there was a swift gyration in the trend. However, 2015 till recent, witnessed rapid growth in the food production index. This implies increasing food availability and adequacy in recent times. This tends to suggest sustainable food security in the Benin Republic.

## 4. RESULTS

The relationship between food security and cross-border migration is measured by the Pearson correlation coefficient. The coefficient for consumption expenditure is - 0.466 for Nigeria and - 0.442 for Benin. This shows that cross-border migration and consumption expenditure has a weak negative correlation in Nigeria and Benin Republic. For the food production index, the coefficients are 0 .290 for Nigeria and 0 .220 for Benin. This suggests a positive and very weak correlation. These results indicated that food security variables have weak relationships with migration. As net migration is on the negative (suggesting outflows), decreasing consumption expenditure and increasing food production brings about a reduction in the outflow migration trend. However, the probability value of the correlation coefficient for Nigeria is greater than 0.05 level of significance for consumption expenditure and food production. This implies that cross-border migration does not have a significant relationship with food security.

## 5. DISCUSSION

The above results revealed that cross border migration does not contribute to food security in Nigeria and the Benin Republic. This result is in accordance with the findings of Quinones Karamba and Winter [19] and Romano and Traverso [10], whose findings revealed that migration have no significant impact on total food expenditure per capita, food expenditure patterns and the quantity and quality of food consumed by the left –behind. This result is not in line with the findings of Food and Agricultural Organizations (2016) and Black et al, [14] which indicated that food insecurity is one of the causes of migration, and also the classical migration theory, particularly Lee's Oriented Approach ' push' and' Pull' migration Approach and the neo-classical migration theory which states that the desire for better economic opportunities , access to food security and better income are the drivers of migration. The above results implies that;

- Some of the migrants from Nigeria and the Benin republic may not have remitted enough back home for the left- behinds due to the barriers encountered in the process of remitting. While some of the migrants who do not have market economic outcome (requisite skills) and do not have anything to remit back home.

- The left –behind may have been spending much on food and consumption, rather than investing in productivity especially in the agricultural sectors.
- Again, some of the immigrants are illegal. They have no valid travel documents, and this will make it almost impossible for such immigrant to secure paid employment. Consequently, there will be little or nothing to remit home by such immigrant.

## 6. CONCLUSION AND RECOMMENDATIONS

The analysis and findings above revealed that there is no significant relationship between cross-border migration and food security in Nigeria and Benin Republic. This implies that .cross border migration is not responsible for food insecurity in Nigeria and Benin republic. This implies that international remittances and food stamps did not promote food security. Thus, restraining citizens of both countries from travelling abroad will not bring about food security and promote Agriculture. Hence, the study recommended that both Nigerian and Benin republic governments should encourage and provide economic opportunities to the rural populace beyond farm level, promoting rural-urban fiscal relationship and invest in productive sectors that will generate better economic opportunities.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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