

**SUSTAINABLE LAND TENURE AND FOOD SECURITY IN DEVELOPING ECONOMIES: EMPIRICAL
EVIDENCE FROM OSUN, NIGERIA**

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ABSTRACT

The study examined the causal linkages between land tenure security and food security in Osun, Nigeria. The targeted population for the study comprised 16,762 agrarian households in Ede, Ile-Ife, Ilesha, Ikire, Ikirun and Egbedore towns. Sample size for the study comprised 3, 600 households. Random sampling technique was adopted in administering questionnaire to household heads in the study area. Descriptive and inferential statistical tools such as frequency counts, averages, percentages and Granger Causality test were used for data analysis. Findings from the study revealed that there was a uni-directional causality between land tenure security and food security in the study area. The study concluded that for agrarian households to have sustainable food security in the study area in particular and similar developing economies in general, farmers need to have secured land tenure as this encourages investments in the secured land which consequently improves access to food for such households.

Keywords: Agrarian, food security, household, sustainability, tenure security.

INTRODUCTION

Land plays a vital role in the life of man, hence, land tenure security in relation to food security is an important issue which is observed to have been receiving increasing attention in recent time by researchers and practitioners alike (De Bruyn & Veer, 2014; and Buntaine, Hamilton & Millones, 2015). This is because attaining the status of food security by any nation increases its chances of better economic development, eradication of poverty and increase in longevity of its citizenry (Davis, 2009). The nexus between land tenure security and food security is a desirable one as observed by Nasrin & Uddin (2011, p. 90) who asserted that 'secured access to land is vital for diverse land-based livelihoods, sustainable agriculture, economic growth, poverty elimination and food security'. Simply put, security of land tenure induces farmers to increase agricultural productivity which subsequently leads to food security. Even though land tenure security and food security are two different areas of research, this paper attempted to find the correlations between the two. This paper assessed how land tenure security affects and is affected by household food security in a developing economy (Osun, Nigeria).

The Food and Agriculture Organization [FAO], (2002) defined land tenure security as the relationship (legally or customarily) among people or group of people with respect to land, determining who can use such land and for how long. Holden & Ghebru (2016) identified two major sources of land tenure insecurity which includes: land encroachment and land grabbing by either private individuals or expropriation and redistribution by the government. On the other hand, food security was said to exist when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. In this perspective, food security is about: availability, access, utilization and stability or sustainability (FAO, 2004). This could be at a global, international, national, regional or household levels. For this study, the focus is restricted to food security at the household level rather than regional, national, international or global levels. At the household level, food security is defined by both economic and physical access to food that is sufficient or adequate in terms of quality and quantity to meet individuals' need in the households in question (Ingawa, 2002). To create a conducive environment for agricultural productivity and consequently food security hinges on security of land tenure for agrarian households.

Abdulai (2007) and Baylis, Honey-Roses & Borner (2016) observed that Land tenure insecurity, exacerbated by population pressure, escalate conflict over land use, inhibit land transactions, and discourage investment in farming, consequently leading to food insecurity. Ihimodu (2004) and Alabi, Okunola, Dabara, & Odewande (2012) observed that the problem of food security in especially Nigeria had kept increasing despite various interventions by both government and individuals to curb the situation. This assertion was supported by Babatunde, Olorusanya, & Adejola (2008) and Adebisi (2012). Babatunde et al. opined that over 70% of Nigerian households do not have food security, while Adebisi noted that about ₦1.3 billion (\$3.6 million) was used on annual basis to import food items to the country. This situation is not peculiar to Nigeria, the Food and Agriculture Organization [FAO], (2010) reported that about 900 million people in the world are still experiencing food insecurity.

Despite the various studies on the importance and central contribution of tenure security to food security, tenure insecurity still persists in developing economies (Ankeli, Odewande, Agidi, Adeleke & Dabara, 2015; Ankeli et al. 2017; Dabara et al., 2019).

This assertion can be buttressed by examples of fall out of land insecurity in Nigeria which had led to numerous conflicts such as the Tula and Awak land contestations in Gombe state in the 90's; Ife and Modakeke land disputes of 1997; 1999; and 2000; Zango Kataf crisis of 1993 and 2000; Ezza and Ezillo crisis of 2008 and the Jos crisis of 2008. These land contestations and insecurity have negatively impacted on agriculture in the aforementioned locations. Despite the much research and expensive intervention by government and NGO's, very little has been achieved so far in the quest for solutions to pervasive failure of tenure security and food security issues in developing countries especially in Nigeria as this is manifested in the aforementioned land contestation and disputes (Ankeli, Dabara, Omotehinshe, Tanimu & Oladimeji, 2017). Recent studies on tenure security have suggested some possible causes of tenure insecurity, but there is little or no empirical work to support these opinions in developing nations specifically in the study area for this research work, hence this study. The importance and centrality of land tenure security and its impact on food security cannot be overemphasized. The result of this study will contribute to knowledge by creating awareness among Nigerians and similar developing economies on the need for adequate land tenure security. It will provide information that will guide in formulating and implementing policies that will enhance land security, create self-sufficient communities through the provision of tenure security and aid in the provision of sustainable food security in especially developing economies.

According to Ankeli, Agidi, Dabara, Oni & Oladimeji (2015), Land is a unique, valuable and immovable resource of limited quantity. It is the most basic aspect of subsistence for many people around the world and therefore a very strategic socio-economic asset particularly in poor societies where wealth and survival are measured by control of, and access to land (Williamson and Ting, 2008; Agbosu,2009). This assertion was re-echoed by Deininger (2003) and Alix-Garcia, Kuemmerle & Radeloff (2012), who noted that for most of the poor in the developing countries, land is the primary means of generating livelihoods and a main vehicle for investment, wealth accumulation and transferring assets between generations.

Vast literature abounds on studies related to land tenure and food security. Examples includes the study conducted in Ethiopia, by Deininger & Jin (2006), findings from the study revealed that land tenure security impacts positively on the amount of investments made on such lands. In Bangladesh, Islam, Miah & Haque (2008) found that land use pattern in the study area increases food production, consequently ensuring food security for farm households. In Malawi, it was found that land reform programmes impacts on both food production and agricultural productivity in general (Chirwa, 2008). The Economic Commission for Africa [ECA], (2009), conducted a study which examined the impact of land tenure system on food security in Africa. Findings from the study revealed that there is a linkage between land tenure systems and food security in the study area. Holden & Ghebru (2013) found in their studies that land reform had causal linkages with food security as the former led to increase in food production as well as food access by female-headed households. Abu & Soom (2016) in a study conducted in Nigeria, examined factors affecting food security in farming households in Benue. The study found that income of households head, households' size and farm size are the major factors impacting on food security in the study area. Dabara et al., (2019) found a positive correlation between land tenure systems and agricultural productivity in Gombe, Nigeria. Other similar studies conducted around the world included the studies conducted in Latin America by Deininger & Chamoro (2004); in Asia by (Feder, 1988) and Islam, et al. (2008); in the UK by Sen (1981); in Africa by Babatunde et al. (2008) and Abu & Soom (2016) and in Europe by De Bruyn & Veer (2014). The general consensus in literature as observed from the

aforementioned studies, suggests an increasing growing evidence that secured land tenure has positive impact on food security. This is because when land rights are secured, owners of such lands tend to invest more on such land which generally improves agricultural productivity. On the other hand when such lands are not secured, farmers generally are cautious and have limited incentives to invest, consequently affecting production negatively.

The literature gap observed from the above studies borders on the dearth of high quality impact studies that explores the nexus between land tenure security and food security in agrarian settlements of developing economies. Many of similar studies that were conducted were not nationally representative, thereby limiting the geographical coverage and providing further additional motivation for this study. Presently, there is scanty literature that focused on Nigerian land tenure security and food security; most related studies were carried out in developed economies. Hence, this study aimed at assessing the causal linkages between land tenure security and food security in Osun, Nigeria with a view to providing information that could aid in the provision of a sustainable food security among farming households in developing economies. Therefore, the researchers assessed the degree of land tenure security among agrarian households in Osun, Nigeria; examined the level of food security among households in the study area; and determine the causal linkages between land tenure security and food security in the study area. The remaining part of the paper is organized as follows: the next section (section two) explained in detail the methodology adopted for the study; result and discussions was presented in section three; while section four provides the conclusion of the study.

METHODOLOGY

The study area is Osun State, situated in the South Eastern Region of Nigeria. It was created from the then Oyo State in 1991. The state shares boundaries with Kwara, Ekiti, Ogun and Oyo States. It is mainly an agrarian state with a land area of about 9,251km². The state has two distinct seasons (rainy season which starts from March to November with an average rainfall of about 1,300mm and the dry season which starts around December to February). From the last population census conducted in Nigeria in 2006 it was recorded that the population of the state was around 3,423,535 people with an average growth rate of about 3.5%. Osun is made up of three senatorial districts and thirty Local Government Areas (LGA).

The targeted population for the study comprised 16,762 households in agrarian settlements in the study area. Six study locations were purposively selected from the study area, these includes: Ede, Ile-Ife, Ilesha, Ikire, Ikirun and Egbedore. The sample size for the study comprised 600 households in each of the six study locations. Questionnaire survey was used to obtain data from the field. Hence, 600 questionnaires were administered on the household heads of each of the six study locations, making a total of 3,600 questionnaires. However, only 2,429 questionnaire were correctly filled and returned for analysis, this represents 67.47% response rate. The random sampling technique was adopted in the questionnaire administration. The questionnaire was structured into three sections. Section 1 was designed to obtain data on the socio-economic characteristics of the respondents such as sex, education, family size etc. Section 2 was designed to obtain data on land tenure security in the study area while section 3 was designed to obtain data on food security among households in the study area. In line with studies such as Sen (1981), Nasrin & Uddin (2011) and Abu & Soom (2016), this study focused on food security not on national nor international levels, but rather on access to food at the household level. Holden & Ghebru (2016, p.26) defined rural households as

households that ‘may derive income from agricultural as well as nonagricultural activities, and they may obtain food by producing it themselves or buying it from the market’. Data was collected to cover a period from January to December 2019.

Descriptive statistical tools such as frequency counts, averages and percentages were used in analyzing the data obtained. Likert scale was used in the study similarly, the Granger Causality test was conducted to determine the causality between land tenure security and food security in the study area. Granger causality is a way to examine the causality between or among two or more variables. The Granger Causality test is a probabilistic account of causality; it uses empirical sets to find patterns of causal relationships in a uni-directional or bi-directional way among the variables.

Decision rule for Granger Causality tests

If P-Value > 0.05 , do not reject the null hypothesis of no Granger causality.

If P-Value < 0.05 , reject the null hypothesis of no Granger causality

RESULTS AND DISCUSSION

This section presents and discusses the results obtained from analysis of data collated from the study. Table 1 presents profile of the respondents’. It captures information with regards to their socio-economic characteristics. The study area covers the following agrarian settlements in Osun state Nigeria: Ede, Ile-Ife, Elesha, Ikire, Ikirun and Egbedore. To obtain data from the respondents 600 questionnaires were administered on farm household heads from each of the six study locations. A total of 3,600 questionnaires were distributed. However, the researchers were only able to retrieve 2,429 which were correctly filled by the respondents. The following number of questionnaire were retrieved from each of the study locations: 481 from Ede; 387 from Ile-Ife; 394 from Elesha; 457 from Ikire; 378 from Ikirun and 332 from Egbedore. The data collected covered the period from January to December 2019.

Table 1: Respondents' profile

		Ede	Ile-Ife	Ilesha	Ikire	Ikirun	Egbedore	Total
Gender	Male	447	346	357	432	347	309	2238
	Female	34	41	37	25	31	23	191
Age	below 30	3	2	8	31	17	9	70
	31-40	48	29	19	59	67	23	245
	41-50	89	108	189	136	103	87	712
	51-60	282	187	60	191	149	169	1038
	above 60	59	61	97	40	42	44	343
Marital status	Married	427	326	329	387	309	273	2051
	Single	0	7	8	12	16	17	60
	widow/widower	41	51	42	31	41	32	238
	divorced	13	3	15	27	12	10	80
Family size	1-4	12	17	16	12	32	22	111
	5-8	132	38	94	72	105	138	579
	9-12	221	239	137	203	143	96	1039
	13-16	108	71	138	143	59	63	582
	above 17	8	21	9	27	39	1	105
Educational qualification	None	239	163	201	267	206	178	1254
	Primary Certificate	107	98	128	54	109	77	573
	Secondary certificate	77	69	84	95	27	44	396
	ND/NCE	28	34	11	21	21	21	136
	HND/B.Sc	25	14	17	20	13	12	101
	M.Sc	5	8	9	0	1	0	23
	PhD	0	1	0	0	0	0	1
Years of experience	Under 5 years	7	11	14	17	25	9	83
	6-10years	56	57	93	89	53	75	423
	11-15 years	102	129	128	107	132	73	671
	16-20	121	117	74	165	103	102	682
	above 20 years	195	73	85	79	65	73	570

Source: Field survey, 2019

Table 1 presents the socio-economic characteristics of the respondents'. 2,238 male respondents participated in the survey representing 92.1% of the respondents. 191 (7.9%) female participated in the survey. The participation of more male than female could be because the questionnaire were administered on household heads most of which are of the male gender. Most

of the respondents i.e 1,038 (42.7%) are between the ages of 51 to 60 years old. Similarly most of the respondents 2,051 (84.4%) are married with a family size of predominantly between 9 and 12 members (1039, representing 42.8%). A greater percentage of the respondents (51.6%) had not been to school, hence, they do not possess any educational certificate. It was observed that most of the respondents have farming experience of over ten years. Table 2 presents land tenure systems subscribed the respondents.

Table 2: Land tenure systems subscribed by respondents

Land tenure systems							
subscribed	Ede	Ile-Ife	Ilesha	Ikire	Ikirun	Egbedore	Total
Statutory	36(7.5)	86(22.2)	62(15.7)	52(11.4)	74(19.6)	124(37.3)	404(16.6)
Customary	189(39.3)	193(49.9)	231(58.6)	309(67.6)	273(72.2)	157(47.3)	1352(56.7)
Informal	162(33.7)	108(27.9)	101(25.6)	96(21.0)	31(8.2)	51(15.4)	549(22.6)
Total	481(100)	387(100)	394(100)	457(100)	378(100)	332(100)	2429(100)

Source: field survey, 2019

Note: the figures in parenthesis are in percentage

Table 2 presents the predominant types of land tenure systems practiced in the study area. The three major types of land tenure systems practiced in the study area includes: the statutory, customary and informal systems. This is in agreement with similar studies conducted by earlier researchers such as Akinola & Adeyemo (2013) and Dabara et al. (2019). From Table 2, it was seen that customary land tenure system is the predominantly practiced tenure system in the study area. This is shown by a total of 56.7% of the respondents practicing this tenure system. An earlier study conducted by Alden (2011) provided similar result. The next was the informal land tenure system. Table 2 revealed that 22.6% of the respondents subscribed to this type of tenure practice. The least practiced tenure system in the study area is the statutory tenure system. Only 16.6% of the respondents practiced this type of tenure system.

The informal land tenure system was observed to be highest in Ede (33.7%) this could probably be because Ede is opined to have the largest land size in Osun state. Ilesha had the highest customary land tenure system (58.6%) meaning more than half of the population subscribed to this type of tenure system. It was also observed that Egbedore had the highest number of respondents that subscribed to statutory land tenure system (37.3), this could be due to the fact that Egbedore is close to Osogbo (the state capital). And as a result of frequent land contestations, land owners arm themselves with relevant statutory documents. This was also seen in similar studies conducted by Dabara, Ankeli, Akinjogbin, Omotehinshe & Omoyosi (2017) and Dabara et al. (2019). However, Payne (2001) asserted that the situation is different in developed nations

Table 3: Land acquisition by respondents in the study area

How land was acquired	Ede	Ile-Ife	Ilesha	Ikire	Ikirun	Egbedore	Total
Inheritance	203(42.2)	197(50.9)	209(53.1)	213(46.6)	169(44.7)	136(40.9)	1127(46.4)
Purchase	127(26.4)	73 (18.9)	81 (20.6)	77 (16.8)	75 (19.8)	83(25)	516(21.2)
Gift	27(5.6)	13(3.4)	32(8.1)	48(10.5)	13(3.4)	06(1.8)	139(5.7)
Lease	95(14.2)	79(20.4)	63(15.9)	88(19.3)	109(28.8)	70(21.1)	504(20.7)
Squatting	29(6.0)	25(6.5)	09(2.3)	31(6.8)	24(6.3)	37(11.1)	155(6.4)
Total	481(100)	387(100)	394(100)	457(100)	378(100)	332(100)	2429(100)

Source: Field Survey, 2019

From Table 3, it was revealed that the major means by which respondents accessed or acquired land was by inheritance from their family lineage (46.4%). This is a common practice in most communities and ethnic groups in developing nations. About 21.2% of the respondents acquired their land through purchase. While 20.7% of the respondents acquired theirs through lease of such lands. This is followed by access by means of illegal squatting (6.4%) and lastly through gift (5.7%). These results implies that custodians of land in any clan, community or ethnicity are to ensure that family lands are held in trust and are passed from one generation to the other in perpetuity. This is why in most traditional settings in Nigeria, women do not inherit land from their parent. This is to ensure that the ownership of such land is not transferred to their husbands' family. This also explains why most of the respondents (46.6%) obtained their lands by means of inheritance. This findings is in agreement with a similar studies conducted by Chimhowu (2019).

Table 4: Documentary evidence of land ownership in the study area

Documentary evidence	Ede	Ile-Ife	Ilesha	Ikire	Ikirun	Egbedore	Total
Title deed/certificate of occupancy	76(15.8)	129(33.3)	73(18.5)	53(11.6)	101(26.7)	119(35.8)	551(22.7)
Purchase agreement	127(26.4)	73(18.9)	81(20.6)	77(16.8)	75(19.8)	83(25)	516(21.2)
will/letter of administration	27(5.6)	52(13.4)	26(6.6)	22(4.8)	37(9.8)	48(14.5)	212(8.7)
lease agreement	95(14.2)	79(20.4)	63(15.9)	88(19.3)	109(28.8)	21(6.3)	504(20.7)
No documentary evidence	156(32.4)	54(13.9)	151(38.3)	217(47.5)	56(14.8)	61(18.4)	695(28.6)
Total	481(100)	387(100)	394(100)	457(100)	378(100)	332(100)	2429(100)

Source: Field Survey, 2019

Table 4 presents data on land tenure security by means of documentary evidence of land rights obtained by the respondents. The majority of the respondents (28.6%) indicated that they do not possess any documentary evidence (certificate of occupancy, deed of sale, lease agreement, letter of administration etc) in relation to their land. 21.2% of the respondents have purchase agreement; 20.7% of the respondents have lease agreement; while 8.7% have letter of administration as evidence of land ownership. Contrary to this, in developed economies having documentary evidence by land owners is taken more seriously (Payne, 2001; Food and Agricultural Development [FAD], 2002).

Table 5: Perception of land tenure security by respondents

Level of certainty of tenure security	Ede	Ile-Ife	Ilesha	Ikire	Ikirun	Egbedore	Total
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Security of land tenure is certain	301(62.6)	278(71.8)	259(65.7)	316(69.1)	212(56.1)	245(73.8)	1366(56.2)
Security of land tenure is not certain	180(37.4)	109(28.2)	135(34.3)	141(30.9)	166(43.9)	87(26.2)	1063(43.8)
Total	481(100)	387(100)	394(100)	457(100)	378(100)	332(100)	2429(100)

Source: Field Survey, 2019

Table 5 presented the perception of the respondents as regards the security of their land tenure. 56.2% of the respondents opined that they are certain that their lands are secured, while 43.8% are not certain as to whether their lands are secured or not. In a similar study Dabara et al. (2019, p.56) asserted that such feeling of security ‘could not be unconnected to the fact that most of the respondents inherited their lands from their family lineage. In such communities, contestation and conflicts over land ownership is minimal since almost everyone knows each other and which land belongs to which family’. This explains why the respondents have a sense of tenure security without recourse to documentary evidence. It was observed that only 22.7% of the respondents have documentary evidence in form of legal title deed or certificate of occupancy (see Table 4). Table 6 presents the perception of respondents in relation to food security in their respective households.

Table 6: Perception of respondents on food security

Food security indicators	Strongly				
	Agreed	Agreed	Undecided	Disagreed	Strongly Disagreed
availability	293(12.1)	397(16.3)	214(8.8)	479(19.7)	1046(43.1)
access	263(10.8)	517(21.3)	144(5.9)	633(26.1)	872(35.9)
utilization	512(21.1)	464(19.1)	21(0.9)	698(28.7)	734(30.2)
stability	281(11.6)	449(18.5)	201(8.3)	813(33.5)	685(28.2)

Source: Field Survey, 2019

Table 7: Access to three square meal per day

Access to meals	Strongly Agreed	Agreed	Undecided	Disagreed	Strongly Disagreed
My family have access to three square meals per day throughout the year	326(13.4)	283(11.7)	148(6.1)	894(36.8)	778(32.1)
My family missed a meal a few times within the year	1096(45.1)	543(22.4)	178(7.2)	297(12.2)	315(12.9)
My family frequently missed meals within the year	698(28.7)	761(31.3)	169(6.9)	389(16.1)	412(16.9)

Source: Field Survey, 2019

The perception of the respondents were sought with respect to the major four components of food security. These includes: food availability, access, utilization and stability or sustainability. The study period covered from January to December, 2019. Table 6 shows that only 43.1% of the respondents indicated that they had food available throughout the year 2019 from January to December. However, only 35.9% of the respondents indicated that they have access to food throughout the year. 30.2% indicated utilization of food throughout the study period, while 28.2 indicated stability and sustainability of food throughout the study period.

In line with studies such as Ingawa (2002) and Babatunde et al. (2008), food security in this study was measured by households' access to adequate food. Hence, access to three square meals per day throughout the study period was used to measure household food security in the study area. From Table 7 it was revealed that most of the respondents do not have access to three square meals per day within the study period (with 36.8% and 32.1% disagreeing and strongly disagreeing having three square meals respectively). Only 13.4% strongly agreed, while 11.7% agreed that they do have access to three square meals per day in 2019. The researchers further asked whether the respondents missed meals a few times within the study period due to unavailability of food. 45.1% strongly agreed with the assertion, while 22.4% agreed. However, 12.2% and 12.9% disagreed and strongly disagreed respectively. When asked if they frequently missed meals within the study period, 28.7% strongly agreed, 31.3% agreed. However, 16.1% disagreed while 16.9% strongly disagreed.

In summary, it was observed that only a few of the respondents (25.1%) had access to three square meals per day throughout the study period (meaning they had food security). While 74.9% of the respondents had missed meals at one time or the other, not because they choose to miss meals but because meals were not available for them at such times (meaning they do not have food security). The findings of this study is congruent with an earlier study conducted by Babatunde et al. (2008) where the authors found that over 70% of Nigerians do not have adequate access to food. This is quite disheartening as access to adequate food is very important to man's wellbeing. The researchers assessed the causality between land tenure security and food security by means of Granger Causality Test and the result is presented in Table 8.

Table 8: Granger causality test on land tenure security and food security in the study area

Null Hypothesis:	F-Statistic	P-Value
LTS does not Granger Cause FS	0.20255	0.0436
FS does not Granger Cause LTS	2.43303	0.4129

Source: Analysis of survey data, 2019

From Table 8 we can reject the null hypothesis that Land Tenure Security (LTS) does not Granger Cause Food Security (FS) with F-Statistic of 0.29255 and P-Value of 0.0436. However we cannot reject the hypothesis that FS does not Granger Cause LTS with F-Statistic of 2.43303 and P-Value of 0.4129. Therefore the analysis reveals that Granger causality runs in one way from LTS to FS and not the other way. Meaning that there is a uni-directional relationship between the variables. This could be interpreted to mean that LTS affects FS and not the other way round. This is in agreement with the findings of Holden & Ghebru (2016, p.23) where the authors asserted that ‘secured access to sufficient land is an important means of achieving food security in poor agrarian land-scarce societies’. However, the result of this study is not in agreement with studies such as Place & Otsuka (2001) and Brasselle et al. (2002) who opined that a reverse causal effect between food security and land tenure security investments exists.

CONCLUSION

The study examined the causal relationship between land tenure security and food security in Osun state, Nigeria. The study revealed that majority of the respondents (28.6%) do not possess any documentary evidence (certificate of occupancy, deed of sale, lease agreement, letter of administration etc) in relation to their land. This is congruent with the findings of Dabara et al. (2019). The study also found that only about 25.1% of the respondents had access to three square meals per day throughout the study period (meaning they had food security). However, 74.9% of the respondents had missed meals at one time or the other (meaning they do not have food security) within the study period. This finding is congruent with an earlier study conducted by Babatunde et al. (2008) where the authors found that over 70% of Nigerians do not have adequate access to food. Furthermore, the study indicated that causality runs in one way from land tenure security to food security and not the other way. Meaning that there is a uni-directional causal relationship between the variables. This could be interpreted to mean that land tenure security affects food security and not the other way round. This is in agreement with the findings of Holden & Ghebru (2016). But however disagrees with the findings of Place & Otsuka (2001) and Brasselle et al. (2002).

The implication of this study for especially developing economies like Nigeria, is that to ensure food security for especially agrarian households, farmers need to have secured land tenures as this encourages investments in the secured land which consequently translates to availability and access to food for household consumption. It was recommended that household heads of agrarian settlements should ensure that all their lands have adequate documentary evidence even if such land were

inherited. This could aid in the provision of sustainable food security among farming households in the study area in particular and households in developing economies in general. The limitation of this study borders on its geographical coverage (i.e just covering only Osun State). For further studies, researchers can consider a wider coverage to include other regions in the nation. Similarly, a comparative study between countries in developing nations or both developing and developed nations could be considered in future studies in this field.

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