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رهانات و آفاق

**Land Deals and Sustainable Income: Evidences from Rural Communities in
Nigeria**

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Abstract

This study examined the extent to which land deals affect the sustainable income of Ota - a rural community in Ogun State, Nigeria - dwellers. Particular interest was paid to the interplay between land deals and other covariates like education, age and other incomes aside land deals. A survey consisting of about 500 Ota indigenes was analyzed using logistic regression, which was complemented by other descriptive statistics. The results reveal that land deals have not sufficiently and positively affected the income of the individuals. Pertaining to the sustainability of income, land deals act in direct opposite with the other covariates such as age, education, number of children and income aside from land deals. This implies that when land deal is significantly affecting sustainable income, the other variables act otherwise, and vice versa. The implication from this is that land deal is not a sustainable source of income for indigenes in our study area. This is particularly because its inclusion in the model has an adverse effect on the other covariates.

Key words: Agriculture; Foreign Land Acquisition; Land deals; Logistic Regression; Poverty; Rural Community; Sustainable Income.

Introduction

Issues on the consequences of land deals and income sustainability of affected individuals have received considerable attention in recent times, especially in African countries. Most of the researches are concerned with the economic implication of these land deals on landowners and the community as a whole (Doss, Meinzen-Dick & Bomuhangi, 2014; Osabuohien, 2014). Land as an economic asset, is expected to contribute to poverty reduction at both the micro and macroeconomic level. This is because of the activities that land fosters, such as agricultural activities, buildings to rent out, and sale. These activities are expected to translate to a consistent flow of income which will improve the welfare of the individuals/households.

Evidences exist that expose the contrary outcomes from land deals. For instance, Liversage (2010) found that foreign land acquisitions pose potential threats to the land rights and livelihoods of smallholder farmers, pastoralists, indigenous communities and other vulnerable groups. Nolte (2014) also realized that land deals have negative consequences on affected communities, especially the socio-economic development of the community. Strikingly, many of the deals that have raised alarming interest have been initiated by foreigners and are domiciled in African countries. For instance, 60% of global foreign land deals (FLDs) are targeted at African countries (Bruntrup, 2011; Deininger et al, 2011). Anseeuw et al (2012) specifically noted that from the 56.6 million hectares (ha) of land deals, 56.2 million ha are in Africa.

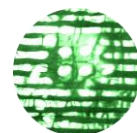
Prior to the country's independence in 1960, variations in land deals and transactions existed across the various geo-political zones in Nigeria. This came about as a result of different



cultural, religious, economic, political and social differences on land matters. Additionally, the variations in government arrangements and land policy were evident in the way and manner 'land owning families' and traditional rulers handled land deals from their respective domains. Since then, there have been re-occurrences of land deals in Nigeria. Markedly, the southern region of the country has recorded over a 100,000 ha of land deals, making the country among the 16 African countries where land deals have been reported, (Anseeuw *et al*, 2012; Osabuohien, 2014). This size is marginal compared to other African countries like Angola, Democratic Republic of Congo and Sudan, which witnessed millions of ha of land deals. However, the land deals in Nigeria cannot be neglected because of the relevance of this country to the African developmental trajectory. This implies that findings from this country, with regards to developmental issues, can be suitable for policy replication in other African countries. This was well elucidated in Asiedu (2006), where she highlighted the relevance of research findings of African countries that become insightful for policy action in other African countries.

Land deals in Nigeria can be perpetrated by a direct contact with land owners, without interference from the government. The major regulatory framework that governs land matters is the land Act of 1978, which gives households/individuals the right to access and own lands. This includes the right to own, sell, lease, mortgage, inherit or exchange lands. In Nigeria, the southern region of the country has largely been involved in land deals. Particularly, communities in *Ota*, a local government in Ogun state (one of the South-Western states of Nigeria), is a major beneficiary of this Act. This is owing to the fact that majority of the households in this community have ancestral lands, that has become the major source of income of individuals living in this community. Most of these ancestral lands are sold to both foreign and domestic investors, which are evidenced in the vast industrial concentration in the area, second only to Lagos State-a major industrial hub in Nigeria.

Despite the increasing rate of land deals in Nigeria, and the southern part of the country, to be specific, the extent to which these deals affect the sustainability of income of the land owners is not well-known. To the best of our knowledge, the closest and most recent study that made enquiry on a similar issue is Osabuohien (2014), which pointed out a major limitation that this current study intends to overcome. The author noted the need for further research on the domestic aspect of land deals that will present additional interesting discussions on land deals in Nigeria. Taking note of this, micro data from rural communities in *Ota*, were gathered to examine the extent to which land deals affect individuals who engage in it. For generalization, the study site-*Ota*, yields relevant policy implications. Apart from the fact that land deals are continuously reoccurring in this community, a somewhat paradoxical outlook persists in the poverty profile of the communities: poverty still looms large among the residents as evidenced by the extent of underdevelopment in the communities. This assertion is based on anecdotal inference; however, the Nigeria Poverty Profile 2010 Report averred that the





absolute, relative, and dollar per day poverty rates in Ogun state, where *Ota* represents a major fraction of, were 62.3, 69 and 62.5 percent, respectively (National Bureau of Statistics, 2012).

The main innovation in this study is the use of an individual survey to examine the extent of land deals on income and sustainability of individuals who engage in them. Vast studies exist that have considered land deals, but only on its drivers (Cotula *et al*, 2009; Bruntrup, 2011; Anseeuw *et al*, 2012) and these studies have also concentrated on global evidence, which blurs this issue when considering country specific dynamics. In essence, country specific dynamics annotates the specific issues that require consideration when explaining land deals in countries. Osabuohien (2014) observed that little is known regarding the impact of land deals from community based analysis, despite the fact that these deals can shape the development and livelihood of individuals in these communities. Due to the sensitive nature of the research topic, the study relied mainly on primary data through the use of a well-structured questionnaire containing both open and closed-ended questions to elicit first-hand information from selected respondents across the research location. The fact that no previous study or data exists on the research topic in the study location justifies the choice and use of primary data. The gap provided in literature, data collection and empirical analysis is what this study fills in addition to knowledge contribution in this area of scientific inquiry.

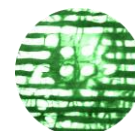
The remainder of the study is distributed as follows: an overview of the study site is presented in the next section; followed by a brief literature review in the third section. The research method is discussed in the fourth section, while the results and empirical analysis were in the fifth section. The final section concludes with policy recommendations.

Brief Overview of the Study Site¹

The study site-*Ota* (also called Ado-Odo) is the most populous industrialized local government in Ogun State. The state is the second largest, in terms of geographical coverage and the second most industrialized in Nigeria. She is located in the tropical region, lying between 60 47°N of the equator and 20 33°E and 30 18°E of the Greenwich Meridian, covering a land area of 1,263 square kilometres. Out of this land coverage, 1,010.4 square kilometres are plain land and about 252.6 square kilometres are bad terrain (comprising of 16% riverine and 4% hills). The boundary to her south is Lagos state, which is the main industrial hub in Nigeria.

From the 2006 census, the local government had an estimated population of 527, 242, which consists of 49.6% male and 50.40% female. There are 450 towns, villages and settlements, with main occupation of settlers being agrarian farming, with majority dealing on cocoa, kola

¹Most of the information in this section was gotten from the Ogun State website on information about the local governments in the state. Information can be sourced from http://ogunlgca.com/index.php?option=com_content&view=article&id=37&Itemid=37





nut, oil palm, cassava, timber, maize and vegetables. Furthermore, anecdote evidence reveals that more than 80% of the indigenes are engaged in the sale and resale of ancestral lands for their livelihood. This has given rise to the maxim, “as crude oil is to the *Niger-Deltas*², so is land to the *Ota* people”, which depicts the importance of land as a principal economic resource to the indigenes in this locality.

The youths in *Ota* take land deal as a major trade and they are tagged *Omo-oniles*, which is a colloquial representation for children of the land owners. These youths have attributed varying charges for different facets of land development for land purchased in their community. For instance, to acquire land, there has to be a financial settlement to the *Omo-oniles* for land purchase, to put up the foundation of a building, for actual building and for roofing the building. After building, they also charge for moving into the building, which implies that at every stage of the development of the land, the land acquirer must make a financial commitment before he/she is allowed to execute the development. The main reason that was put forward for this is because of the reality of the depletion of their inheritance. This and other violent activities of the *Omo-oniles* have remained a major concern of land acquirers.

Most land transactions in *Ota* are informally enacted while the head of the family has an oversight role to ensure that acceptable moral rules governing the family land are upheld. However, this informal system is bedeviled with land disputes because of the breakdown of the rules and social relationships governing transactions. This becomes even worse when the remaining land of the *Omo-oniles* dwindles and when the resale of already sold lands is prevalent. Lands that were genuinely acquired by individuals or organizations, but left undeveloped over a long period of time are commonly impounded by the children of the land owning families, and then resold without considering earlier contracts.

Review of Literature on Land Deals

Land comprises all naturally occurring resources, whose supply is inherently fixed. It is a fundamental asset for all classes of people and for all countries of the world on which all human activities are performed (Omolabi, 2010). Omolabi (2010) is of the opinion that land as a natural resource provides not only a foundation for economic and social development, but when properly managed, can help to empower people to adjust to the challenges posed by urbanization and globalization. It is so important that in the sustainable development agenda, land policy issues lie at the root of solutions to many urban problems including, housing problems, poverty alleviation, urban productivity, good governance, participation by civil society and women's rights (Deininger, 2004; Nalker, 1997).

² The Niger-Delta region of Nigeria is known for large deposits of crude oil and the region is the major producers of Nigerian crude oil export.



Land deal defines the process through which land is acquired by investors and delivered by the land owners. The acquirer and the land owners are the market land actors. This process can either be formal or informal. The formal system hinges on land policies and law by various governments and enforced by government agencies, while the informal system follows customary rules and it is dictated by social norms and practices. Leach, Mearns and Scoones (1997) state that the informal system of land deals is upheld by mutual agreement and rules that are enforced endogenously. Though rural dwellers normally access land through a wide variety of channels (De Janvry et al. 2001), land transactions can play an important role by allowing those who are productive but are either landless or own little land to access land. Land markets also facilitate the exchange of land as the off-farm economy develops and, where the conditions for doing so exist, provide a basis for the use of land as collateral in credit markets.

Deininger (2003) asserted that capital market imperfections and policy distortions have, in many instances, prevented land sale markets from contributing to increased levels of productivity or reduced poverty. He opines that to understand why in some cases land transactions may fail to contribute to improving productivity and equity, it is necessary to review the conceptual foundations that underlie the operation of land markets and how some of the market imperfections frequently encountered in rural areas of the developing world will have a differential impact on land rental and sales. According to him, imperfections in labor and credit markets, and the scope of economies of scale in production, will affect the way in which land markets function.

According to Liversage (2010), most of the land in Africa is already owned by rural communities under a range of diverse tenure systems, although often these rights are not registered. The author shows that frequently, national states consider underused land as being available for disposal to outside investors. However, this has changed in many developing countries as it is increasingly recognized that, while some land may be underutilized, very little is vacant or unused. The study further established that there is still uncertainty as to the nature and scale of the demand for land and the actual number of acquisitions or long-leases realized.

Deininger and Byerlee (2010) also posits that many reported land deals have not materialized and of those that have, only a small portion of the land acquired is actually being realized. It was further established by Liversage (2010) that there is insufficient information on the impacts that realized land deals have had on the livelihoods of the rural communities affected – negative or positive, indicating mixed results. While some researchers suggest that some land deals have not met expectations but rather have had a negative impact, there is also evidence to suggest that some smaller deals, especially in agriculture, have positive impacts (Andrianirina-Ratsialonana & Teyssier, 2010).



Existing evidence in literature further reiterates that in most cases, land deals or transfers do not seem to be contributing to the livelihoods of a substantial share of the households involved (Valente, 2009). In a survey conducted by Ahmed et al (2003), only 8.1% of the households surveyed reported achieving a higher income, and only 11.1 per cent reported achieving a more secure income as a consequence of participation in land redistribution. McCusker (2002) found out in a study on communal land redistribution projects, that change in livelihoods following land reform is very minimal (only 21.1% of the beneficiary households experienced increase in income as a result of the communal land redistribution). This insignificant change is a result of farm size problems, lack of capital, skills and labour, gender bias, disorganization and skewed age distribution. Bradstock (2005) carried out a case study on land reform projects in Northern Cape of South Africa and found that a majority of the household income that increased during the survey period was not as a result of land redistribution. Other studies in literature have also documented either a negative or non-significant impact of land deals on the livelihood of beneficiary households (van den Brink et. al., 2006; Borras, 2005; Deininger & May, 2000).

In yet another study, Osabuohien et al (2014) examined the influencers and implications of FLDs in Uganda, an East African country. In their study, they examined the implication of land deal on the host communities, in terms of selected outcome variables like education, road, water and health care facilities. They found that the presence of FLDs in a particular community seems to exert a substantial positive effect on the extent of availability of these outcome variables. They concerted their findings by stating the views of some community leaders in the host communities, who seem to support the fact that the presence of FLDs has affected some of these outcome variables. Considering the case of Ethiopia, the Oakland Institute (2011) observed that the communities in Ethiopia have experienced drastic clearing of forests, loss of wildlife, and destruction of livelihoods. The main explanation for this is that the activities of land dealers are prerogative of the land investor and they are discrete in deciding their activities in the host country. More so, indigenes do not benefit from these investments and they bear the brunt of the adverse impacts of these investments.

Research Method

The Data

Both quantitative and qualitative data were collected in 2014, from a total of 22 rural communities in *Ota*. The qualitative data involves focus group interviews that include community leaders and heads of land association. The second aspect is the quantitative data that involved the selection of the 22 communities, which was based on vast coverage/representation and capturing the heterogeneity across individuals/households in these communities. The sampling frame was designed in a way as to reduce the problem of exclusion bias from the sampling process, through random selection of individuals from the



communities, which forms the primary sampling units (PSUs). This process involve the following: the training of about 20 fieldwork assistants and a supervisor, who were mandated to cover the communities and distribute the questionnaire to individuals, without recourse to gender and other discriminatory criteria. More so, rigorous supervision was ensured in order to avoid the possibility of one individual filling more than one questionnaire. About 500 individual responses were successfully included in this study, with an uneven distribution across the 22 communities.

Analytical Approach

In order to measure the impact of land deals on sustainable income of individuals in *Ota* community, a *probit* model was estimated based on an underlying response variable y_i^a that is defined by:

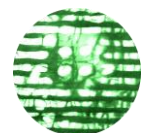
$$Y_i^a = X_i\beta + \mu_i \quad (1)$$

Where a categorical variable was only observed for the explained variable, Y , that takes the values $Y=1$, if $Y_i^a > 0$ (i.e. if households report an outcome that shows that their income have improved after the sale of land and $Y_i^a = 0$, if otherwise). The justification for using this variable as the main outcome variable is based on the fact that we perceive that the extra fund from the sale of land can be used for investment into other income yielding ventures. For instance, apart from reckless spending and other forms of frivolous living that emanates from the extra cash and which will be controlled for, the fund can be used to start up new businesses, engage in capital formations like buildings and human development. All these have an effect on the improvement of the household welfare and income.

Therefore, the predicted probabilities of observing the outcomes of interest, Y , are estimated by computing the equation below:

$$Pr(Y=1|X_i) = \int_{-\infty}^{x_i\beta} \phi(t)dt = \Phi(x_i\beta) \quad (2)$$

The density of the distribution function and the cumulative distribution function of the standard normal distributions are ϕ and Φ respectively. Z is the main explanatory variable, the occurrence of land deals in the past 12 months, while X is a vector of household characteristics that contains the following covariates: *age*, a continuous variable that captures the age of the individual; *education*, which captures the individual's educational attainment; the *number of children* of the respondent, which is used to capture the intra-household composition of the liquidity requirements for consumption expenditure. This variable is very useful since majority of the respondents are either household head or are in positions to head the household and the number of children that depends on them can explain their capacity to utilize funds from land deals for investment purposes. For example, an individual with more children is more likely to utilize land deal's fund for welfare or children education, which



may not likely be enough for investment in other income generating ventures. Finally, the *income* of the individual, apart from funds from land deals, was included as a covariate.

Prior to the estimation of the *logit* model, an in-depth descriptive analysis will be reported in order to portray the perspectives of the respondents pertaining to land deals. The main focus of this section is to underscore the responses of those that have been involved in land deals in relation to their income status. This will also be examined across age and other varying factors as included in the empirical model.

Table 1 includes further details on the variables, their measures and a summary statistics. On the average the disparity between the individuals that experienced improved aggregate income after land deals and those that did not was minimal. In essence, about 56 percent did not experience improved income after the occurrence of land deals while about 44 percent had an increase in land deals. Of course, the individuals who were involved in land deals (in the past 12 months) were dismal (about 22 percent)³ and of those involved in land deals, almost half of them experienced an improved aggregate income. By this statistics, it is not distinguishingly clear about the role of land deals in improving the individual's aggregate income. However, some suspicions may arise since almost half of those that engaged in land deals experienced improved aggregate income.

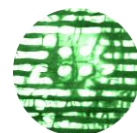
Curiously, the responses from an in-depth interview of some of the indigenes were examined to be sure of the percentage change in the value of the land and the actual involvement of land owners in land deals. A 56 years old non-indigene had the following remark to state:

At the time I bought my one plot of Land at 'Bells' Area in Ota two years ago, it was sold for N1,200,000 (7,384.62 USD) but as at the date of the interview, land goes for between N2,200,000 (13,538.46 USD) and N2,500,000 (15,384.62 USD) per plot in that same area. Apart from the money paid to acquire the land, I have spent/ given more than N172, 000 (1,058.46 USD) to Omo-oniles for the security and development of the land.

Another interview with a 62 years Old non-indigene, who is also the chairman of the Landlords' Association in one of the study area – Benja community in Ota – has this to say:

In the state where I come from, no Omo-onile comes to trouble you because you are constructing your house. The Omo-oniles here have different groups. As an interested land buyer, it is important for you to identify the deadliest of the group to avoid paying same fee to different persons. The reason why we have Omo-oniles is because of unemployment. I recall

³This does not in any way contradict the earlier assertion that was made that Ota indigenes engage mostly in the sale of land. It is important to note that the question about the sale of land was asked in relation to the last 12 months and anecdote experience reveals that land deals in this area follow a random sequence. In essence, a sale of land in a month does not imply that land deals can likely occur in the following month. However, the indigenes desire to sell their land at any opportunity they have.



that I paid them during the Muslim festival but to my surprise, they are extravagant, they wasted the money on alcohol and women. I know of one Omo-onile that died of HIV/AIDS because of his reckless lifestyle. Because most of them do not engage in productive activities, the proceed they get from land deals do not improve their lives. They re-sell land that has been previously sold because their access to land is dwindling.

An 80 years old non-indigene who has lived in the study area for over 50 years add that:

In the region where our study area is cited 'Yoruba land', land belongs to the family and sometimes several families but not an individual. If anybody especially non-indigene needs to acquire land, you first make enquiry and locate the head of the family that owns the land you are interested in buying, who is expected to contact other family members and agree at a meeting the portion and amount it should be sold for, in addition to the income sharing formula. Because of unemployment, manipulations, distrust and greed these days, some family members tend to outsmart others at the detriment of the innocent land buyer.

In the words of another interviewee, who is an Estate Manager residing in the study area, had the following remarks to state with regards to the frequency of land deals:

Land is not something you buy every day. I have been living in Ota for the past ten years. The one plot I have is the first. If government can create employment opportunities for the able-bodied youths involved in land matters, it will assist to reduce the current situation. Government can focus on providing technical education in areas such as welding, carpentry etc. The Omo-oniles can become more relevant thereby reducing land crises.

In this light, it is certain that the value of land in this region experiences a consistent increase, however, the mechanisms through which land deals transmit to improved income is determined by underlining factors. The attitude of the land dealers towards the utilization of the income from land deals for profitable venture is a key factor. Like the second interviewee noted, land dealers squander the revenue from land deals on frivolous life styles and do not care to re-invest the funds into profitable ventures that would have hitherto enhanced their income level. More so, some informal institutions – principally family rules and dictates – on the price and quantity of land to be sold is another underlining factor that affect the sustainability characteristics of land deals. More so, the frequency of land deal is another important attribute.

The average age of the sampled respondents was 47 years, most of which had only secondary school leaving certificates (46.84 percent) and 37.88 percent of them had attained tertiary education. Few of them (2.65 percent) were not educated in any form and 12.63 percent just have primary school education. In terms of the family size, the respondents have 4 children on the average and they earn an average of 416.64 USD per month.

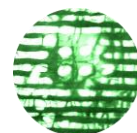


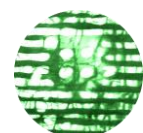
Table 1: Variables and Measures

Variables	Measures	Summary
Main Variable	Explained	0 = 56.76%
Sustainable Income	1, if there is an increase in the individual's aggregate income after the occurrence of land deals and 0, otherwise.	1 = 43.24%
Main Variable	Explanatory	0 = 78.36%
Occurrence of land deal	1, if the individual has been involved in the sale of land in the past 12 months and 0 otherwise	1 = 21.64%
Covariates		
Age	Continuous variable that captures the age of the individual	47 Years*
		1 = 2.65%
		2 = 12.63%
		3 = 46.84%
Education	Highest educational attainment, measured as 1- no form of formal schooling; 2-attained only primary school; 3-attained only secondary school; 4-attained tertiary education	4 = 37.88%
Number of Children	A count variable that captures the number of biological children of the respondents and who depends on them for welfare.	4 Children*
Income aside land deal	A count variable that is measured as the average monthly income of the individual in local currency Unit-LCU	67, 679.83**

Note: * connotes that the mean values was the item that was reported. ** To convert this value to the USD, we applied the exchange rate as at April, 2014 (1 USD @162.50 LCU i.e. 416.64 USD).

The Empirical Results

In considering the effect of land deals on the sustainability of the income of dwellers in *Ota*, multiple approaches were adopted in presenting the results. The first approach considered the responses of individuals who have earlier being involved in land deals and asks questions

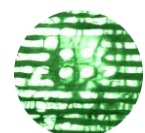
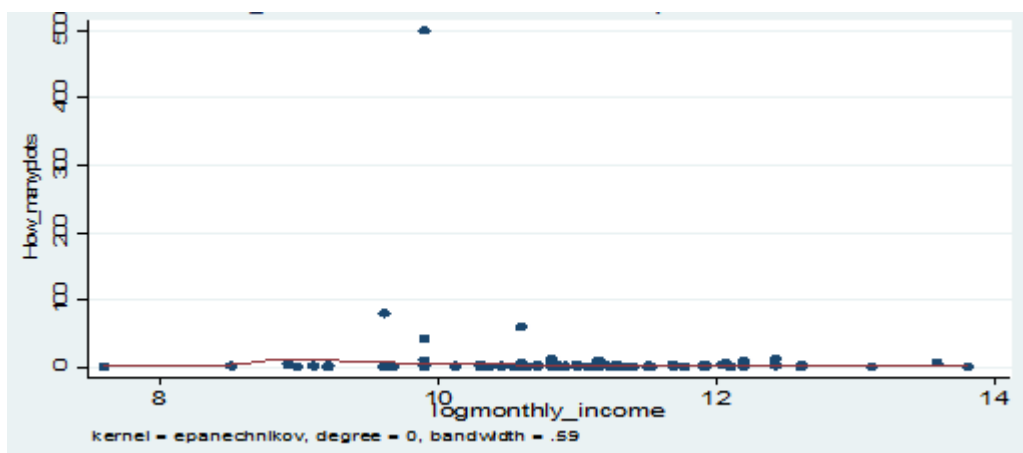


regarding their previous income prior to the deal and their current income after the deal. Then consider, through graphical or tabular illustration, if there was an improvement or otherwise. The second approach is to use a regression analysis, in order to take care of alternative explanations to the relationship.

As part of the descriptive analysis, the study presents in Figure 1 a non-parametric approach in underscoring the linkage between land ownership and income of individuals. This approach reveals smooth scatter plots and models the functions, by using each point of the logarithm of income as a low-order polynomial weighted least square regression to fit the number of plots owned. In this case, we did not observe any tangible causal linkage between the income level and the number of plots owned by the individual. Most of the individuals, though own less than 100 plots, revolve around the middle income category. Just very few were at the higher income margin, but the number of plots were not patently different. There was just one individual, who owned about 500 plots of land and it was observed that his income level remained at the middle category.

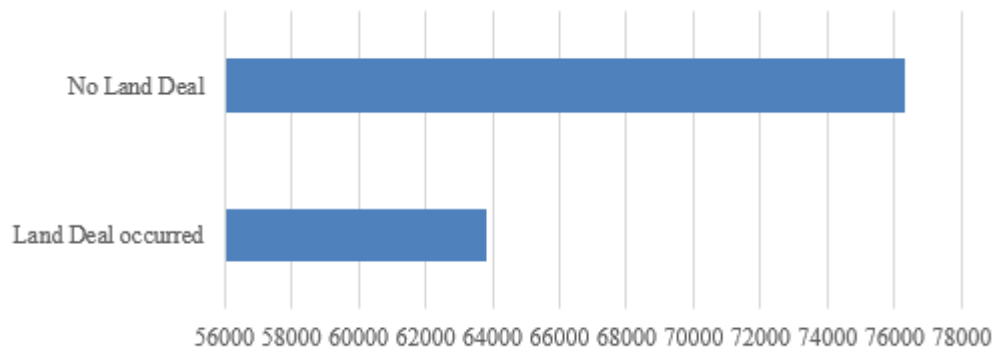
Not surprising, the majority of these individuals are within the middle income class despite their ownership of land. Of course, it is possible that these individuals do not have absolute consent over the activities on the land. This implies that even if they own the land in terms of titles, they may not have the right to the absolute income from any deal that transpires on the land. The issue of family ownership comes to bear and the income is shared among the family members based on some tacit sharing framework. This has already shortened the income ration of the acclaimed land owner. Furthermore, the kind of lifestyle that the individuals lead may be another explanation to the clustering of land owners in the middle income category. This point was based on the revealing information that we had access to during the in-depth interview.

Figure 1: Land Ownership and Income



Running with this question, the study went further to examine the relative change in the income of difference that exist between the average income of individuals who own land and have used the land for commercial activities like sales or lease, and those who have not. Figure 2 reveals that those who have not used their land for commercial activities earn more income than those who have used their lands for commercial activities. Taking a further view, those who had no land deal had about twice the relative income of those who were once involved in land deals. This further suggests the disparity, in terms of income, that exists between land dealers and non-land dealers.

Figure 2: Relative Income Based on Occurrence of Land Deals



Having observed this trend, the study further examines the relative income of individuals prior to and after engaging in land deals. We plotted a non-parametric plot to foretell the probability density function of income prior to engaging in land deals and after engaging in land deals. From this plot, the higher probability of individual respondents falling within each of the category of income was ascertained. From Figure 3, the probability of the surveyed individuals having more income is higher prior to land deals than afterwards. Of course, the difference is slight: but, it reveals some underlining peculiarity about the survey area, which was earlier discussed. For instance, this divergence cannot be disassociated from the fact that individuals' pleasurable lifestyles and their inability to utilize these funds for profitable living, can be the reason for this divergence. This implies that the chance of the individuals earning more income reduces after land deals.

To further buttress this outlook, the qualitative data (as earlier reported) reveals that some of the indigenes engage in land deals to meet pressing needs and not for future investments. This likely explains the relationships experienced between land deals and current income of indigenes. Since the interest in this study is on sustainability of income of *Ota* indigenes as a result of land deals, the study was not able to conclusively assert that land deals does not have a positive effect on sustainable income of the indigenes. Therefore, the study proceeds to examine the logistic regression, which is reported in Table 2 in the next subsection.

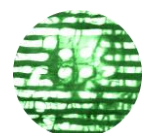
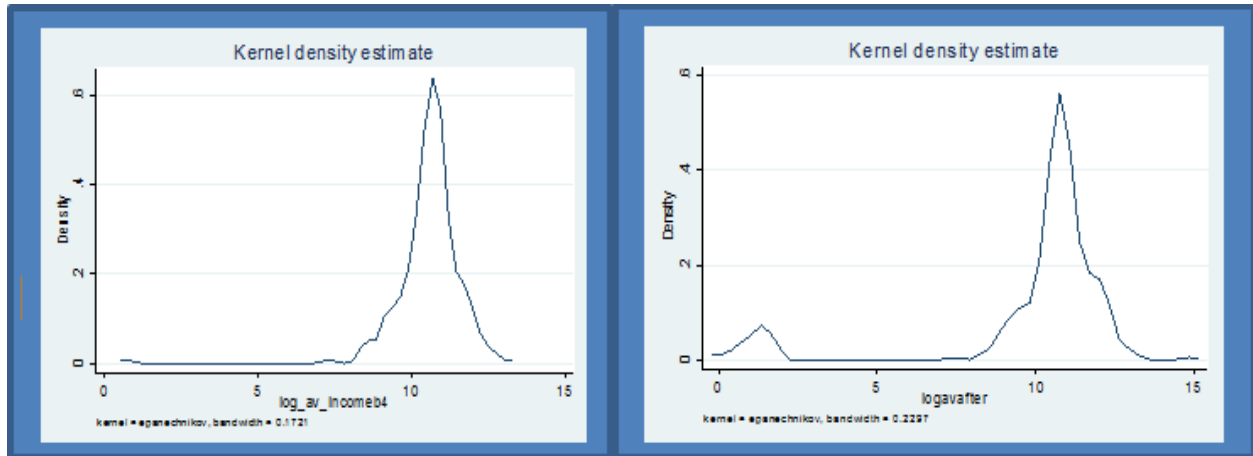


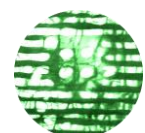
Figure 3: Kernel Density Estimates



Logistic Regression

The logistic regression was presented in five (5) columns, where column 1 represents the combination of the entire variables that were presented in the empirical model. In column 1, the land deal variable was not significant, although it was positive. Just the age of the respondents, educational attainment and income from other engagements, were found to be significant. This outlook connotes that the probability of individuals sustaining their income is not significantly affected by income from land deals but by the other significant variables, especially when considering the model in this study holistically. Considering the underlining 'story' here, it is prudent to observe that the implication of land deals on sustainable income becomes unverifiable when the other covariates like education and income from other engagements is 'actively' affecting sustainable income. Relating this to the occurrences in *Ota*, when the indigenes education, income from other engagement are able to significantly affect their sustainable income, then they do not resort to land deal.

The above outlook is reverberated in the earlier submissions from the qualitative statistics and the non-parametric analysis. More so, when considering the other columns, it is observed that land deal was significantly affecting sustainable income when the other covariates were insignificant. This connotes that in situation where indigenes proffer to use land deals for sustainable income, then the indigenes will most likely not be able to derive outcome (like income) from their education and may be other income engagements. Possibly, the income from land deals overshadows their ability to gainfully engage other covariates. The message from this is that land deal is not a sustainable source of income for indigenes in our study area. Main explanations for this are two-fold: attitudes of the individuals towards the productive utilization of funds from land deals and the underlining frameworks that govern the land market in this area. This implies that their attitudes towards the utilization of funds from the sale of land deals for investment is low and it affects their ability to transform these



funds to sustainable investment. These two factors are the major explainer of the reasons why land deals does not translate to sustainable income of the land dealers.

Table 2: Logistic Regression

	1	2	3	4	5
	0.614	0.784***	0.819***	0.858***	0.820***
Occurrence of land deal	(0.222)	(0.097)	(0.079)	(0.065)	(0.081)
	-0.067**	-0.029			
Age	(0.019)	(0.145)			
	0.703**		0.099		
Educational Attainment	(0.059)		(0.711)		
	0.099			0.038	
Number of Children	(0.534)			(0.753)	
	0.568**				0.218
Income aside land deal	(0.072)				(0.387)
	-1.294	1.209	0.059	-0.114	-2.647
Constant	(0.664)	(0.219)	(0.946)	(0.823)	(0.339)
Pseudo R2	0.083	0.039	0.026	0.026	0.028
Log likelihood	-57.839	-62.615	-66.822	-66.841	-64.654

Note: *, ** or *** represent 1, 5 or 10 percent levels of significance. The variable-income aside land deals is presented in its logarithmic form.

Conclusion

This study examined the relationship between land deals and sustainability of income of dwellers in *Ota* community in Ogun state, Nigeria. Survey data was gathered in 2014 comprising 500 households/individuals, which was reported in this study. Logistic regression was applied as well as other descriptive analysis technique. The findings of this study show that land deals have not sufficiently affected the income of the individuals. Pertaining to sustainability of income, land deals act in direct opposite with the other covariates. This implies that when these indigenes engage in land deals, the potential of other variables





significantly affecting income becomes unverifiable. This is because land deals significantly affect income only when the other variables become insignificant and vice versa.

Like every other empirical research, this study has some limitations and suggestion for further study. Firstly, the study did not consider the income of the individuals over a period of time; it only applies the incremental change of the income prior to and after land deals. This is suitable in some instances, but for further robust estimations, it will be logical to consider the income over a period of time to be able to ascertain the extent of sustainability. Secondly, the role of gender in this discourse should be examined. This is because of the ongoing debate that women are mostly excluded from land inheritance and the extent, to which this affects their income, will be suitable for policy actions. Thirdly, a more qualitative examination of the outlets to which these indigenes use the fund from land deals, will give credence to the conclusions on the role of land deals in income sustainability.

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