Intrinsic drivers of land abandonment in Africa: A case study of Nigeria

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Introduction

- In Africa, especially in Nigeria, agricultural land is not cultivated efficiently and effectively due to economic reasons, technological change, urbanization, industrialization, and land use change (Ali et al. 2014).

- As a result, large land areas are left unused for undocumented periods, which vary between farmers and regions (Ali et al. 2014, Xie et al. 2020).

- In some cases, farmers decide to abandon their land due to labour shortages, scattered plots, distance from their settlements, pre-and post-harvest food damage, poor road networks, the prevalence of conflict or war, limited access to productive resources, climate change, poor institutional features such as inability to access credit, and agricultural inputs (Yan et al. 2016; Subedi et al. 2022).

- Numerous studies have been carried out on the factors that influence land abandonment worldwide.

However, these gaps in the literature reviewed were identified:

o There are few studies on land abandonment in Africa and none from Nigeria.

o The intrinsic factors (particularly behavioural, cultural, and geopolitical factors) that influence land abandonment have not been fully explored.

Yet, these intrinsic factors are essential as they help tell the holistic story of decision-making, as not all decisions are rational.
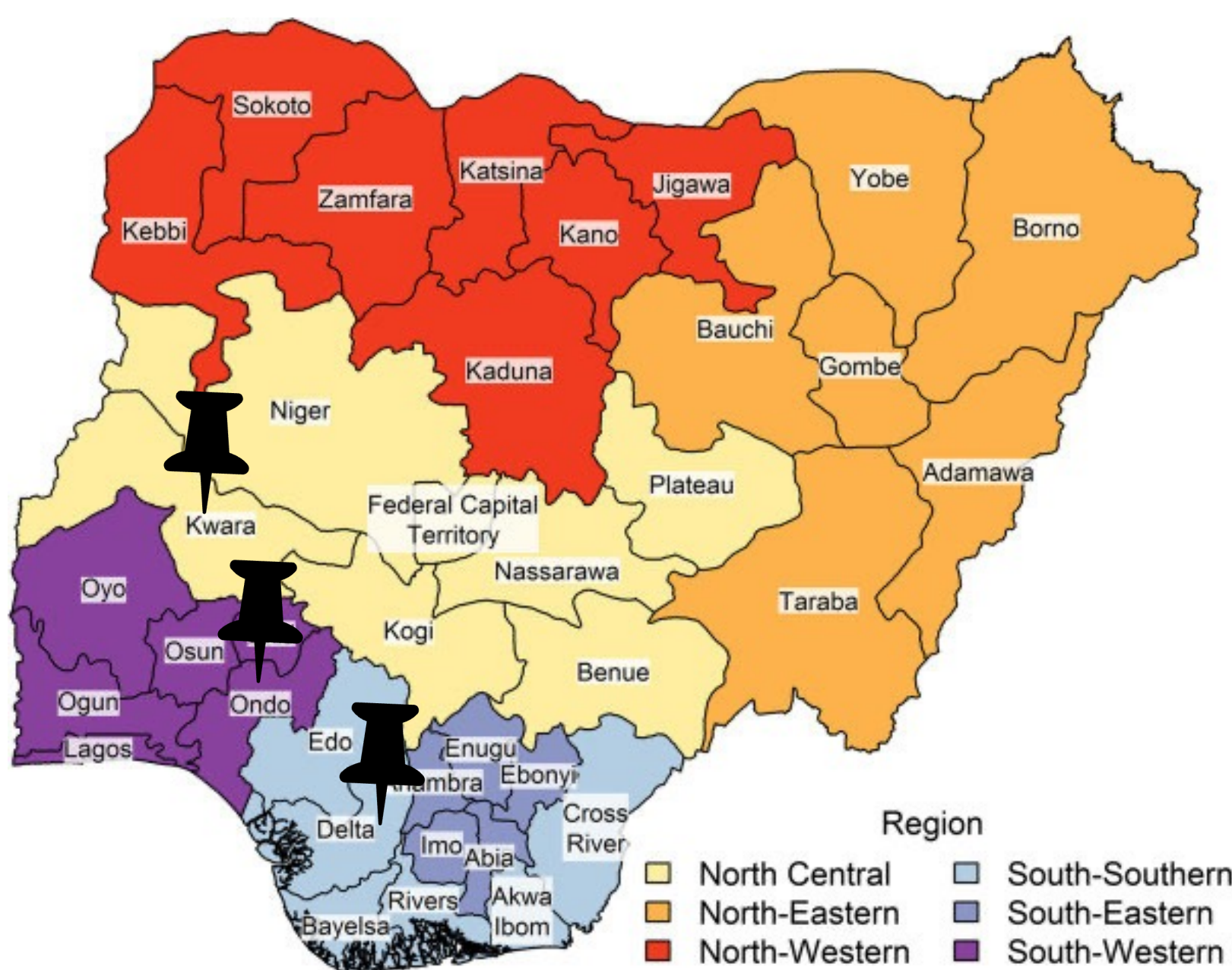
Hence, the main aims of this dissertation is to:

- investigate the intrinsic (behavioral) factors influencing land abandonment decisions in the selected study area

Methods and Materials

- **Study Area**

Nigeria was selected as the study area.

- **Sample Selection**

Multi-stage sampling was employed

- Stage 1 – 3 geopolitical zones

Random selection of 3 out of 6 geopolitical zones

- Stage 2 – 3 states

Convenience selection of 1 state out of each of the three geopolitical zones

- Stage 3 – 9 local government areas

Random selection of 3 local government areas from each of the 3 states.

- Stage 4 – 450 farmers

Random selection of 50 farmers from each of the 3 local government areas.

- Data Collection

The data was collected from May – June 2023 using semi-structured questionnaires.
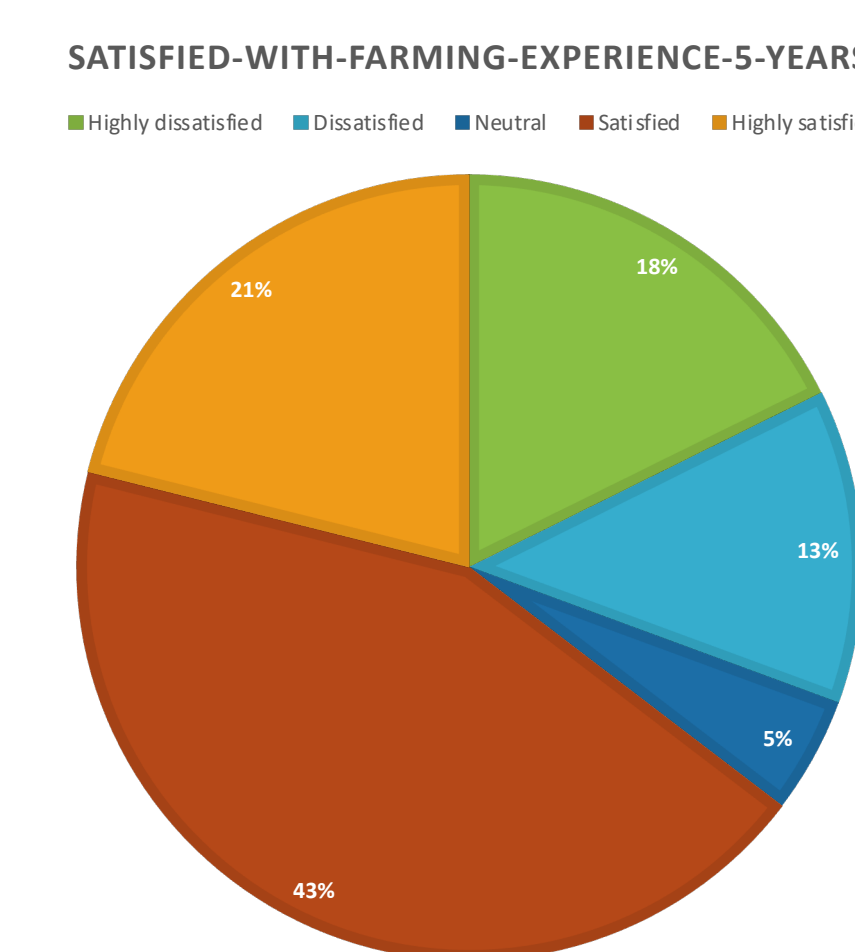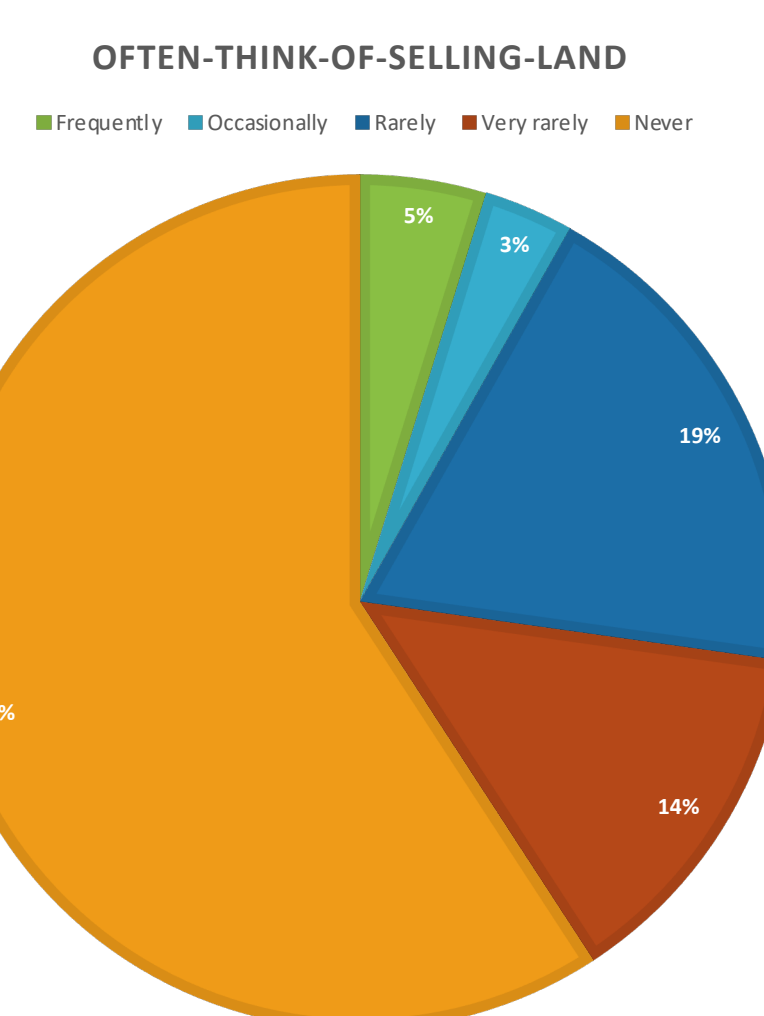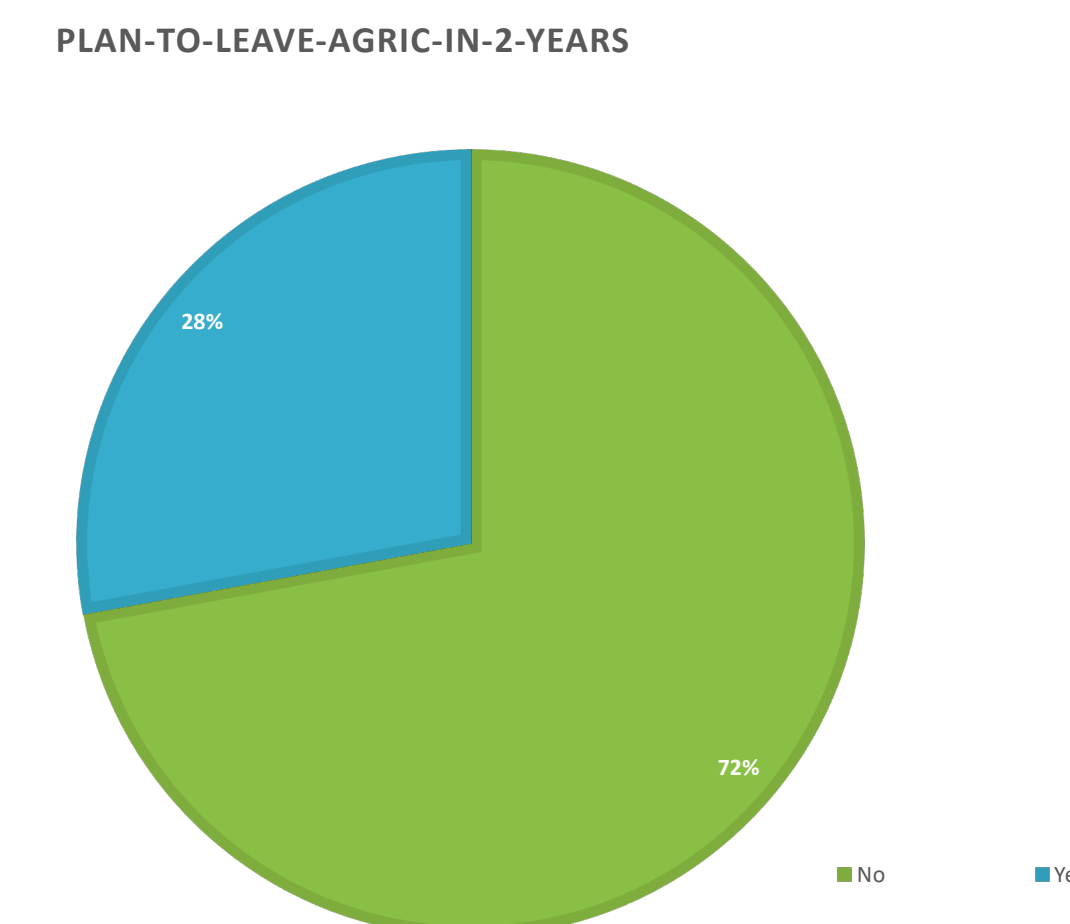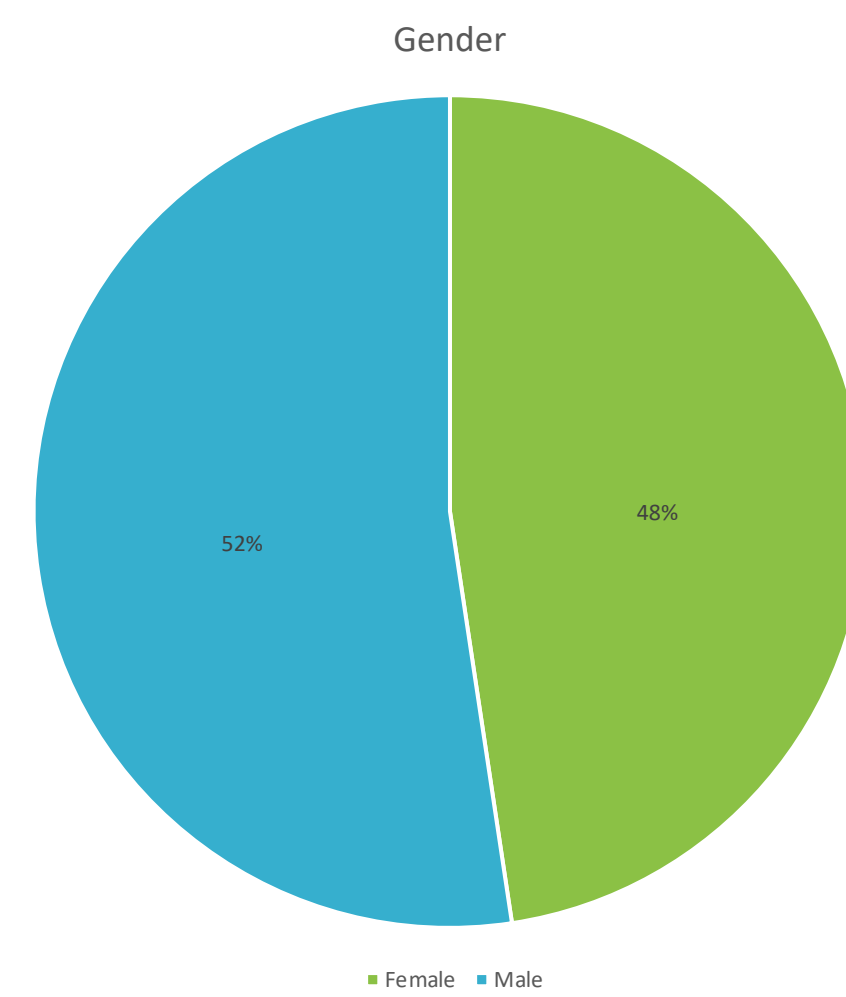
- Data Analysis

Microsoft Excel and SPSS were used to conduct descriptive and inferential analyses – Binary Logistic Regression Model.

Model Development

$$P(Y=1) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + \varepsilon_i)}}$$

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Results

Dependent Variable			
Y = Abandon Land	Yes = 1	No = 0	
Independent Variables	B	S.E	Sig
Constant	-26.183	10.965	.017
Age (in years)	-0.513	0.213	0.016**
Gender	-0.900	1.751	0.607
Household Head	1.103	1.877	0.557
Educational Level (in years)	-1.045	0.449	0.020**
Farming Experience (in years)	0.133	0.100	0.183
Family Size	-0.473	0.558	0.397
Monthly farm income	0.000	0.000	0.070*
Born in the community	5.866	2.459	0.017**
Close friend in the community	0.313	0.206	0.129
Number of crops cultivated	3.757	1.589	0.018**
Rear Livestock	8.911	3.786	0.019**
Land Size (in hectares)	-0.101	0.082	0.217
Willingness to sell land	4.352	1.826	0.017**
Difficulty hiring labour	6.767	2.854	0.018**
Satisfied with farming experience	2.167	1.056	0.040**
Problems with flooding	13.477	6.624	0.042**
Political Instability	3.873	2.731	0.156
Access to subsidies	-14.208	6.768	0.036**
Access to extension agents	-4.468	2.813	0.112
Practice mechanized farming	18.244	8.115	0.025**

*Level of Significance : *** - 1 % level of significance ** - 5% level of significance * - 10% level of significance*

Discussion

- 72% of the respondents do not have any immediate plans to leave agriculture. ; 64% of the respondents are satisfied with their farming experience.

- 59% of the farmers responded to never thinking of selling their lands which is an indicator of land attachment that influences land abandonment behaviour (Scannell & Gifford, 2010, Xu et al. 2019, Zhang et al. 2022).

- The age and level of education of farmers harm the decision to abandon land. This means that the older and more educated the farmer, the more likely he is to abandon his land. The age variable can be attributed to the decreasing ability to cultivate the land, which leads to land abandonment (Lasanta et al. 2017; Chaudhary et al. 2020; Paudel et al. 2020).

- Educated farmers are more likely to get off-farm or non-farm employment, especially with increasing industrialization, urbanization, and economic development, thus increasing the likelihood of land abandonment (Paudel et al., 2020; Yan et al., 2016).

- Being born in the community and how often farmers think about selling their land has a positive influence on the decision to abandon land but with a behavioural component. Farmers tend to practice temporal abandonment, i.e. abandoning land for a specified or unspecified period, depending on their constraints. This is most often due to resource scarcity. In such cases, farmers would instead leave the land unattended (abandoned) but retain ownership as it can be used as a personal asset for the farmer and his family. This was found to be shared even when the land was not economically used for more than 2 years. The land is left idle until the situation improves or there is a need to use the land. This is a strong indicator of land attachment (Xu et al. 2019, Zhang et al. 2022).

Conclusion

- In summary, this research has explored the complex web of factors contributing to land abandonment, shedding light on the interplay between intrinsic and extrinsic drivers. While previous studies have predominantly focused on the external forces that drive land abandonment, our findings underscore the importance of intrinsic motivators, including attachment, perceptions, and personal experiences, in shaping individuals' decisions to abandon land.

- In this study, respondents' being born in the community, willingness to sell their land, and satisfaction with their farming experience had a significant impact on their decisions to abandon their land. This reinforces the need to explore different drivers of land abandonment. This finding invites the research community to explore these intrinsic drivers more deeply.

- At present, our study only scratches the surface of this complex and promising aspect of behavioural drivers influencing land abandonment decisions and thus leaves ample room for further investigation. This will allow researchers to develop a more holistic picture of this interdisciplinary and global phenomenon.

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