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**AN ECONOMIC ANALYSIS OF PARTICIPATION IN  
CREDIT MARKET AND CREDIT RATIONING AMONG  
FARMERS IN KANO STATE, NIGERIA**



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**DOCTOR OF PHILOSOPHY  
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CREDIT RATIONING AMONG FARMERS IN KANO STATE, NIGERIA**



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**Thesis Submitted to  
School of Economics, Finance and Banking,  
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## ABSTRACT

Apart from providing fertilizer and machineries, agricultural credit provides access to all other resources, which may lead to remarkable improvement in output. However, due to lack of farm credit, agricultural production particularly in Kano-State, Nigeria does not significantly improve over the years. Therefore, this study aims at estimating the demographic and socio-economic indicators that are responsible for influencing farmers' decision to participate in credit market and factors that constraint them from accessing the farm credit. Micro data is used in this study involving 835 households and 45 microfinance banks, respectively. The result of the logistic model reveals that commercial farming, credit information, neighbourhood credit participation, traditional title and possession of radio and television relate positively to the credit market participation whereas a negative impact is noticed on the application of traditional tools. Similarly, results from the discrete choice models show that farmers who are either being engaged in subsistence farming or trading have a significant effect on the choice of credit market and credit rationing with the greatest impacts found on the farm profit and farmers' location. Moreover, the result of the partial proportional odds model indicates that the amount of credit received by farmers shows a positive relationship on irrigation, vehicle, farm record, number of creditors, financial literacy and location, albeit negatively related to subsistence farming. Even though proximity to lenders seems to play a role in credit supply equation, creditworthiness in general and its staff in particular are even more important. In conclusion, this research attests that poorer farmers are more likely to be excluded from the credit market than better-off households. Consequently, the finding in the credit market model recommends that there is need to build trust, encourage commercial farming, apply modern farming tools, strengthen property rights and increase financial literacy among farmers.

**Keywords:** agricultural credit, credit participation, credit choice, credit rationing, partial proportional odds model

## ABSTRAK

Kredit pertanian bukan sahaja melibatkan penyediaan baja dan mesin, tetapi juga menyediakan akses kepada sumber-sumber lain yang boleh membawa kepada peningkatan keluaran pertanian. Bagaimanapun, pengeluaran pertanian di Kano-State, Nigeria tidak mengalami perubahan yang signifikan selepas beberapa tahun disebabkan oleh kekurangan kredit pertanian. Oleh itu, kajian ini bertujuan untuk menganggarkan indikator demografi dan sosioekonomi yang mempengaruhi keputusan petani untuk mengambil bahagian dalam pasaran kredit dan faktor-faktor lain yang mengekang mereka daripada akses kepada kredit pertanian. Kajian ini menggunakan data mikro yang melibatkan 835 isi rumah dan 45 buah bank pembiayaan mikro. Keputusan model logistik menunjukkan bahawa pertanian komersil, maklumat kredit, jiran yang menyertai pasaran kredit, kedudukan status tradisional, pemilikan radio dan televisyen mempunyai hubungan positif dengan penyertaan pasaran kredit. Sebaliknya, penggunaan peralatan tradisional mempunyai kesan negatif terhadap penyertaan pasaran kredit. Keputusan model pilihan diskrit juga menunjukkan bahawa petani yang terlibat dalam pertanian sara-diri atau menjalankan perdagangan mempunyai kesan yang signifikan kepada pemilihan pasaran kredit dan catuan kredit. Kesan yang terbesar dapat dilihat ke atas keuntungan ladang dan lokasi petani. Selain itu, keputusan daripada model ganjil berkadar separa menunjukkan bahawa jumlah kredit yang diterima oleh petani mempunyai hubungan positif dengan pengairan, kenderaan, rekod ladang, bilangan pemiutang, literasi kewangan dan lokasi, tetapi berhubungan negatif dengan amalan pertanian sara-diri. Walaupun lokasi pemberi pinjaman penting dalam persamaan kredit pertanian, namun pemboleh ubah bilangan kakitangan pembiayaan mikro merupakan pemboleh ubah yang lebih penting. Kesimpulan umum kajian ini menunjukkan, petani miskin lebih cenderung tersisih atau terkeluar daripada pasaran kredit berbanding isi rumah yang lebih kaya. Penemuan analisis model pasaran kredit mencadangkan pentingnya untuk membina kepercayaan, menggalakkan perladangan komersil, menggalakkan penggunaan alat pertanian moden, mengukuhkan hak harta dan meningkatkan literasi kewangan dalam kalangan petani-petani yang terlibat.

**Kata kunci:** kredit pertanian, penglibatan kredit, pilihan kredit, catuan kredit, model ganjil berkadar separa

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## **TABLE OF CONTENTS**

	<b>Page</b>
<b>TITLE PAGE</b>	<b>i</b>
<b>CERTIFICATION OF THESIS WORK</b>	<b>ii</b>
<b>PERMISSION TO USE</b>	<b>iv</b>
<b>ABSTRACT</b>	<b>v</b>
<b>ABSTRAK</b>	<b>vi</b>
<b>ACKNOWLEDGEMENT</b>	<b>vii</b>
<b>TABLE OF CONTENTS</b>	<b>viii</b>
<b>LIST OF TABLES</b>	<b>xiii</b>
<b>LIST OF FIGURES</b>	<b>xiv</b>
<b>LIST OF ABBREVIATIONS</b>	<b>xv</b>
<b>CHAPTER ONE INTRODUCTION</b>	<b>1</b>
1.1 Background of the Study	1
1.2 Problem Statement	7
1.3 Research Questions	8
1.4 Research Objectives	9
1.5 Significance of the Study	9
1.6 Scope of the Research	11
1.7 Background of Kano State, Nigeria	12
1.8 Organisation of the Study	15
1.9 Definitions of Key Terms	15
1.9.1 Agricultural Credit	15
1.9.2 Access to Credit	16
1.9.3 Participation in Agricultural Credit Market	17
1.9.4 Credit Rationing	17
<b>CHAPTER TWO AGRICULTURAL CREDIT IN NIGERIA</b>	<b>18</b>
2.1 Introduction	18



2.2	Major Agricultural Financial Programs in Nigeria	18
2.2.1	Nigerian Agricultural Cooperative Bank	18
2.2.2	People's Bank of Nigeria	19
2.2.3	Nigerian Agricultural Cooperative and Rural Development Bank	20
2.2.4	Agricultural Credit Guarantee Scheme Fund	21
2.2.5	Agricultural Credit Support Scheme	22
2.2.6	Commercial Agriculture Credit Scheme	24
2.3	Conclusion	26
	<b>CHAPTER THREE LITERATURE REVIEW</b>	<b>27</b>
3.1	Introduction	27
3.2	Access to Credit and Participation in Credit Market	27
3.3	Theories of Credit Participation	29
3.3.1	Permanent Income Hypothesis	29
3.3.2	The Community Relationship and Risk Sharing Hypothesis	31
3.4	Determinants of Credit Participation	33
3.4.1	Farmers Attributes	34
3.4.2	Farms Attributes	38
3.4.3	Institutional Characteristics	42
3.4.4	Wealth of the Farmers	45
3.5	The Concept of Credit Rationing	48
3.6	Theories of Credit Rationing	54
3.6.1	Asymmetric Information Theory	54
3.6.2	The Contract Theory	57
3.7	Empirical Review on Credit Rationing	59
3.7.1	Farmers Attributes	61
3.7.2	Farmers' Wealth and Farms Attributes	63
3.7.3	Institutional Attributes	66
3.8	Credit Constraints Detection	69
3.9	Conclusions	71
	<b>CHAPTER FOUR METHODOLOGY</b>	<b>73</b>
4.1	Introduction	73

4.2	Theoretical Framework	73
4.2.1	Theory of Demand for Loan	73
4.2.2	Life Cycle Hypothesis	76
4.2.3	Microeconomic Household Model	80
	4.2.3.1 The Decision of the Borrowers	80
	4.2.3.2 The Decision of the Lenders	83
4.3	Conceptual Framework	85
4.4	Model Specifications	86
4.5	Justification of the Variables	88
4.5.1	Age of the Farmers	89
4.5.2	Marital Status of the Farmers	89
4.5.3	Educational Qualification of the Farmers	90
4.5.4	Farm Size	91
4.5.5	Occupation of the Household	91
4.5.6	Farming Experience	93
4.5.7	Deposit Account	93
4.5.8	Political Affiliations of the Farmers	94
4.5.9	Ownership of Vehicle	94
4.5.10	Ownership of Radio and Television	95
4.5.11	Farm Profit	96
4.5.12	Farming System	96
4.5.13	Farm Record	98
4.5.14	Presence of Lenders	98
4.5.15	Number of Marketing Staff	99
4.5.16	Distance to Lending Agencies	99
4.5.17	Liquidity of the Lenders	100
4.5.18	Neighbourhood or Family Credit Participation	100
4.5.19	Financial Literacy of the Farmers	101
4.5.20	Irrigation System	102
4.5.21	Location of the Farmers	102
4.6	Data and Sample	103

4.6.1	The Study Area	103
4.6.2	Population of the Study	104
4.6.3	Sampling Procedure and Sample Size	106
4.6.4	Pilot Test	108
4.6.5	Data Collection	109
4.6.6	Data Preparation	110
4.7	Method of Analysis	111
4.7.1	Logit Model	111
4.7.2	Multinomial Logit Regression Model	117
4.7.3	Multinomial Logit Model for Credit Rationing	121
4.7.4	Ordered Models	123
4.7.5	Tobit Regression Model	129
4.8	Conclusion	131
	<b>CHAPTER FIVE ANALYSIS AND DISCUSSION OF THE RESULTS</b>	<b>133</b>
5.1	Introduction	133
5.2	Socio-demographic Profile of the Respondents	133
5.3	Correlation Analysis	140
5.4	Results of Agricultural Credit Market Participation	145
5.4.1	Estimation and Discussion for Credit Market Participation	145
5.4.2	Marginal Effects at Representative Values	152
5.4.3	Diagnostic Tests for Credit Participation Model	154
5.4.4	Robustness Check for Logit Credit Participation Model	157
5.5	Results of Credit Market Choice	158
5.5.1	Estimation and Discussion of Credit Market Choice	158
5.5.2	Diagnostics Tests for Credit Choice Model	172
5.5.3	Robustness Checks for Multinomial Logit Model of Credit Choice	175
5.6	Results of Credit Rationing Model	176
5.6.1	Estimation and Discussion for Credit Rationing Model	177
5.6.2	Diagnostic Checks for Credit Rationing Model	188
5.6.3	Robustness Checks for Multinomial Logit Credit Rationing Model	191
5.7	Results of the Amount of Credit Received by Farmers	191

5.7.1	Estimations for Ordered Logit and Probit Models	192
5.7.2	Estimation and Discussion for Partial Proportional Odds Model	194
5.7.3	Diagnostic Checks and Model Specification Test	209
5.7.4	Robustness Checks for Partial proportional odds Model	210
5.8	Results of Credit Supply Model	212
5.8.1	Estimation and Discussion for Credit Supply Model	212
5.8.2	Diagnostics Checks for Credit Supply Model	220
5.8.3	Robustness Checks for Credit Supply Model	221
5.9	Conclusion	222
<b>CHAPTER SIX SUMMARY, CONCLUSION AND RECOMMENDATION</b>		<b>223</b>
6.1	Introduction	223
6.2	Summary and Conclusions	223
6.3	Policy Recommendations	229
6.4	Limitations and Future Research	234
<b>REFERENCES</b>		<b>236</b>
<b>APPENDICES</b>		<b>286</b>

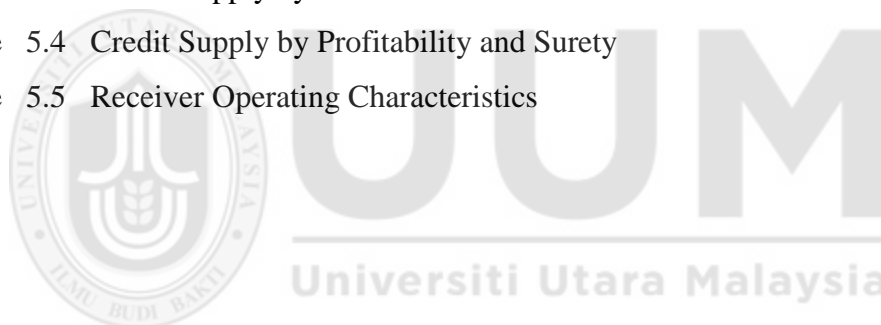


## LIST OF TABLES

<b>Table</b>		<b>Page</b>
Table 1.1	Sectoral Contribution to GDP in Nigeria in Percentage, 1960 - 2014	2
Table 1.2	Sectorial Distribution of Banks' Loans in Nigeria in Percentage, 1960 -2014	4
Table 5.1	Socio–demographic Profile of the Respondents	136
Table 5.2	Descriptive Statistics	139
Table 5.3	Pairwise Correlation Coefficients of Credit Participation Model	142
Table 5.4	Pairwise Correlation Coefficients of Credit Choice Model	142
Table 5.5	Pairwise Correlation coefficients of Credit Rationing Model	143
Table 5.6	Pairwise Correlation Coefficients of Credit Demand Model	144
Table 5.7	Pairwise Correlations Coefficients of Credit Supply Model	144
Table 5.8	Logit Regression Coefficients	148
Table 5.9	Marginal Effects at Representative Values	153
Table 5.10	Diagnostics Test and R-squares	156
Table 5.11	Odds Ratio of Multinomial Logit Model of Choice of Agricultural Finance	167
Table 5.12	Odds Ratios of Choice of Agricultural Finance in Percentage	168
Table 5.13	Tests for Combining Outcome Categories	172
Table 5.14	Hausman Test for Independence of Irrelevant Alternatives (IIA)	173
Table 5.15	Tests for Goodness of Fit for Credit Choice Model	175
Table 5.16	Wald and LR Tests for the Joint Significance of the Independent Variables	176
Table 5.17	Average Marginal Effects for Multinomial Logit Model for Credit Rationing	184
Table 5.18	Wald $\chi^2$ Tests for Combining Outcome Categories	188
Table 5.19	Hausman, Suest-based, Hausman and Small-Hsiao Tests of IIA	189
Table 5.20	Wald and Likelihood Ratio Tests	189
Table 5.21	Tests for Goodness of Fit for Credit Rationing Model	190
Table 5.22	Ordered Logit and Ordered Probit Models	193
Table 5.23	Tests for Parallel Line Assumption	194
Table 5.24	Partial Proportional Odds Model- The Odds Ratios	204
Table 5.25	Partial Proportional Odds Model- Odds Ratio in Percentages	205
Table 5.26	Tests for Parallel Line Assumption, Model Specification, Selection and Fitness	210
Table 5.27	Tests for Model Specification and Selection	210
Table 5.28	General Model Specification and Threshold Parameter Tests	211
Table 5.29	Tobit and OLS Regression Coefficients	216
Table 5.30	Goodness of Fit Tests	220
Table 5.31	Internal Validity, Model Selection and Specification Tests	221

## LIST OF FIGURES

<b>Figure</b>	<b>Page</b>
Figure 1.1 Sectorial Distribution of Banks' Loans in Nigeria between Agriculture and Manufacturing Sector in Millions, 1998-2014	5
Figure 1.2 Agricultural Production of Kano State in Thousand Metric Tonnes, 2002-2014	6
Figure 1.3 Map of Kano State Showing Agricultural Production Activities	14
Figure 4.1 Conceptual Framework	86
Figure 4.2 Map of Kano State Showing Sampling Points	106
Figure 4.3 Population and Sample	108
Figure 5.1 Amount of credit Obtained by Farmers	138
Figure 5.2 Credit Obtained from Different Source	138
Figure 5.3 Credit Supply by Off-farm and Account	139
Figure 5.4 Credit Supply by Profitability and Surety	139
Figure 5.5 Receiver Operating Characteristics	158



## LIST OF ABBREVIATIONS

<b>Abbreviation</b>	<b>Full Meaning</b>
ACGSF	Agricultural Credit Guarantee Scheme Fund
ACSS	Agricultural Credit Support Scheme
ADP	Agricultural Development Project
AIC	Akaike Information Criterion
ASCAs	Accumulated Savings and Credit Associations
BIC	Bayesian Information Criterion
BOA	Bank of Agriculture
CACS	Commercial Agricultural Credit Scheme
CADP	Commercial Agricultural Development Program
CBN	Central Bank of Nigeria
CDF	Cumulative Distribution Function
DCM	Discrete Choice Model
DEM	Direct Elicitation Method
DMO	Debt Management Office
FAO	Food and Agricultural Organisation
FEAP	Family Economic Advancement Program
FMAWR	Federal Ministry of Agriculture and Water Resources
GDP	Gross Domestic Product
GOLOGIT	Generalized Ordered Logit Model
IM	Information Matrix
KSME	Kano State Ministry of Environment
LPM	Linear Probability Model
LR	Likelihood Ratio
MLM	Maximum Likelihood Method
MNLM	Multinomial Logit Model
NA	Native Authority
NACRDB	Nigerian Agricultural Cooperative and Rural Development Bank
OLS	Ordinary Least Square
PBN	People's Bank of Nigeria
PDF	Probability Normal Density Function
PCP	Percentage of Correct Prediction
PPOM	Partial Proportional Odds Model (GOLOGIT2)
ROC	Receiver Operating Characteristics
ROSCAs	Rotating Savings and Credit Associations
RUM	Random Utility Model

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

About 3.5 billion of the world population live in rural areas in 2014 (mostly in the developing world), 75 percent of them are in the poverty trap. In Sub-Saharan Africa (SSA) or Nigeria in particular, the ratios are higher with rural dwellers amounting to more than 50 percent (Todaro & Smith, 2011; World Bank, 2015a). Most of these people have been bypassed by economic progress, and engaged primarily in subsistence agriculture. Survival is their ultimate goal. Report from the Food and Agricultural Organisation (FAO) indicates that more than a billion people in the world are without adequate food supply to meet the basic nutritional requirement (Babatunde, 2012). This leads to the malnutrition of more than 270 million Africans. There is an increasing concern by economists over the growing number of farmers, missing market, poor rural infrastructure, access to working capital and decreasing agricultural productivity, especially in African nations (Todaro & Smith).

Evidence from the World Development Indicators show that in 2014, only 1.6 percent of the total workforce was committed to agriculture in the United States (U.S.), 12.2 percent in Malaysia and 4.6 percent in South Africa. However, when it comes to Nigeria, more than half of farmers engaged in agricultural sector, but not produce adequate for the country (World Bank, 2015a). In fact, the average cereal crop yield per hectare in Nigeria was three times lower than that of Malaysia (3889.23 kg per hectare) and South Africa



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