ACCESS TO CAPITAL FINANCE AND PERFORMANCE OF SMALL SCALE FARMS IN NYANDARUA COUNTY, KENYA

Njui William Ndung'u & Dr. Jeremiah Koori, PhD

The Strategic JOURNAL of Business & Change MANAGEMENT
ISSN: 2312-9492 www.strategicjournals.com

Vol. 10, Iss.4, pp 1226 – 1239. November 19, 2023. www.strategicjournals.com, ©Strategic Journals

ACCESS TO CAPITAL FINANCE AND PERFORMANCE OF SMALL SCALE FARMS IN NYANDARUA COUNTY, KENYA

[1] Njui, W. N., & [2] Koori, J.

[1] MBA Student, School of Business, Economics and Tourism, Kenyatta University, Kenya
[2] Lecturer, Department of Accounting & Finance, School of Business, Economics and Tourism, Kenyatta University, Kenya

Accepted: November 1, 2023

DOI: http://dx.doi.org/10.61426/sjbcm.v10i4.2813

ABSTRACT

The general objective of this study was to establish the effect of access to capital finance on the performance of small scale farms in Nyandarua County. The specific objectives include identifying the effect of money market, cost of credit, terms of credit and, financial knowledge on the performance of small scale farmers in Nyandarua County. Finance and growth theory, finance and inequality theory are the two main theories that guided the research. The study used descriptive research design whereby questionnaires were used to collect primary data. Proportionate sampling technique was applied to select the required sample size. The sampling frame was proportionately calculated as per the sub-counties population in the 2019 Census using a sample of 100 firms. The study applied panel random effect regression model. Statistical Package for Social Sciences STATA, was used to analyse the data. Multiple regressions was applied for analysis of data. The study established that costs of credit, terms of credit and financial knowledge significantly influence the performance of small scale farmers in the county while money market has insignificant influence. Other factors that influence the performance of small scale farmers are education level and account ownership. The study recommended that financial institutions should lower lending rates to small scale farmers to enable financial flow in order to enhance crop yield and spur economic growth for the farmers and Kenya at large. Further, the financial institutions should provide credit at affordable terms by extending repayment period to allow the farmers to harvest their produce, sell and then make repayment. Further research should be carried out in other counties to determine which factors influence crop production to promote food security and accelerate economic growth. Further studies should also be done to determine what contributes to low agricultural yield, even though Kenya is considered to have a well-developed financial sector to support agricultural production. Lastly, research should be done to determine the insignificant influence of money market on the performance of small scale famers in Kenya and how it can be harnessed to increase agricultural productivity.

Key Words: *Money Market, Cost of Credit, Terms of Credit, Financial Knowledge, Finance*

CITATION: Njui, W. N., & Koori, J. (2023). Access to capital finance and performance of small scale farms in Nyandarua County, Kenya. *The Strategic Journal of Business & Change Management,* 10 (4), 1226 – 1239. http://dx.doi.org/10.61426/sjbcm.v10i4.2813

INTRODUCTION

Small scale farming is frequently denoted reciprocally with family means, low-pay, resource poor, low-info, or low-innovation cultivating, albeit not always appropriately (Heidhues and Brüntrup, 2003). Small scale farms in rural America serve a dual purpose as a source of household food security and also as a source of revenue for small scale farms. Small scale farms here have a more efficient farming process than most other parts in the world. Small scale farming also enhances local economic development as it creates a source of employment for the locals while ensuring that the income stays local as it is predominantly localized. In traditional USA the produce from small scale farming is first meant for households after which the surplus is sent to the market; thereby in essence ensures that there is food security (Kutya, 2012).

In recent years in the United Kingdom (UK), small scale farmers have received attention both in economic talk as well as political. The UK has 'agricultural advisors' that offer managerial knowledge thereby ensuring performance of small scale farmers and facilitate easy access to capital finance. The United Nations (UN) 2014 resolution affirmed that family farming and smallholders farming are important bases for a maintainable food creation and guaranteed food security.

Smallholders' access to fiscal services is typically perceived as one of the limitations restricting their ability to benefit from credit services. However, in most cases, particularly in formal financial organizations, the access issue is one that the institutions have generated basically through their loaning policies. This shows itself as set minimum advance sums, convoluted application requirements, and credit limitations for specific purposes (Schmidt and Kropp, 1987). Dependable access to short-term and lesser amounts of credit is more important to small businesses, and emphasizing it in credit programs targeted at them could be more fitting. Schmidt and Kropp go on to say that the sort of monetary organization and its arrangements are often the deciding variables in access issues. Prospective borrowers will not apply for loans even if it is available if the credit length, payment conditions, necessary protection, and complementary services offered do not meet the needs of the target community.

It is generally recognized that although minimal, small scale farmers make an impact in the economy of any developing country. Their presence in any enterprise ensures a thriving business environment that significantly impacts on the economy of any particular locality. Some of the factors that create an impact in small scale farming include; the use of technology, training and credit access. These factors greatly affect performance of small scale farms in terms of output and profitability.

In Kenya agriculture contributes 25-26 percent of GDP with small scale farming assuming a crucial part. Most rural homes are estimated to contribute to this, with each home estimated to be practicing some kind of small scale farming. Small scale farming in Kenya still needs to undergo considerate restructuring to ensure an increase in production. This is one field that should be readily considered as it has the potential to be highly productive (Njenga, 2005).

A large portion of the land in Nyandarua County has been partitioned, assigned and settled by small scale farmers. The land holding sizes are likely to decrease to below 3.5 acres as partitioning and sale of land continues to accommodate the snowballing populace and increase in urban centres. (Nyandarua County Integrated Plan, 2018-2022). Nyandarua County has a climate suitable for farming, many small scale farmers engage in the farming of potatoes, peas and dairy keeping.

The yield of major crops produced in Kenya has been steady or diminishing significantly in recent years. This is accentuated by the unreasonably expensive costs of inputs especially certified seeds and fertilizer. Low output in peas, carrots, Irish potatoes, cabbages, and kales is also impacted by the weighty dependence in rainfall during their production. In the

livestock subsector, factory-made feeds for cattle and poultry are pricey for farmers. Moreover, the failure of various agricultural cooperative societies suggest that many of the member ranchers can't access cheap inputs that were provided by the cooperatives as they benefitted from economies of scale. Yield inconsistency as a result of favourable weather effect on beans and cabbages which require shorter periods to mature. Conversely, yields for crops such as wheat and potatoes has dropped as the rains dwindled. Cultivating under irrigation and utilization of higher yielding assortments along with manure would invert this pattern. (Nyandarua County Integrated Plan, 2018). Below graphical representation of data from FAO (Figure 1.1) and (Figure 1.2) illustrate the gloomy situation of plummeting potato yield, which is Nyandarua's major crop farmed, and wheat productivity in the country.

Statement of the Problem

Fiscal access in today's economy is vital for small and micro business enterprises as well as a major determinant of financial performance (Cracknell, 2012). Due to the unpredictable nature of the agricultural sector, only informal and semiformal financial institutions are interested in lending finances to the farmers. These informal and semiformal institutions have one common characteristic; they are unregulated, which increases the challenge of high interest rates charged, consequently lowering the margins realized by the farmers (Michael and Cesare, 2006).

In Nyandarua County, the productivity of major crops produced like potatoes, peas and cabbages has been constant or declining significantly in recent years. Latest Food and Agricultural Organisation statistics show a country wide drop from an average of twenty two tonnes per hectare for potatoes in the year 2010 to nine tonnes per hectare in 2020 (FAO statistics, 2020). This points out to dwindling financial fortunes for the Kenyan farmer.

Past studies carried out on the effect of access to capital finance by small scale farmers on performance show conflicting results. Spio (2002) in his study on the credit worthiness of small scale farmers in Limpopo South Africa found out that those who have access to credit have better performing farms than their colleagues with no access to capital finance. In their research, Cressy and Ollofson (2006) found that managerial and psychological factors were more important than the availability of external finance in limiting firm growth and financial performance.

Another study by Walter, Xianli and Koech (2016) probed procedural effectiveness of small holder potato farmers in Kenya and established that increased use of technology, better seeds and agricultural extension services significantly increase farm output. The variables used in the above studies are different from the ones that will be used in this study namely; money markets, cost of credit, terms of credit and financial knowledge, and how each affect performance of small scale farmers in Nyandarua County.

There is a need to study the significance of access to capital finance to these small scale farmers and the influence it has to access the other farming needs noted in similar studies done. The study focused on Nyandarua County, well-known for small scale potato, milk and peas farming.

Research Objectives

The general objective of this research was to study access to capital finance as a key factor affecting performance of small scale farms in Nyandarua County. The study was guided by the following specific Objectives;

- To identify the influence of money market on the performance of small scale farms in Nyandarua County.
- To evaluate the influence of cost of credit on the performance of small scale farms in Nyandarua County.
- To examine the influence of the terms of credit on the performance of small scale farms in Nyandarua County.
- To determine the effect of financial Knowledge on access to capital finance and performance of small scale farmers in Nyandarua County.

LITERATURE REVIEW

Theoretical Review

Finance and Growth Theory

Better designed financial structures, according to theory and evidence, help businesses overcome external financing constraints, illuminating one process by which financial development affects economic growth. (Ross Levine, 2010). Investors and capital markets send money to individuals and institutions with investment opportunities through financial systems. Financial structures then generate appropriate data and provide risk distribution to investors by developing diversified portfolios, through borrowing from and lending to large groups.

Theories that expect that capital streams toward more gainful undertakings, typically disregard the way that financial backers don't generally have the ability to gather sufficient data to make the most profitable ventures. To enhance resource allocation, collecting information and improving incentives for obtaining information are critical issues. Financial intermediaries, according to a large body of theoretical literature, boost the ex-risk evaluation of speculative openings, with positive ramifications for asset portioning, by bringing down the expenses of getting knowledge. (Ramakrishnan and Thakor 1984, Bhattacharya and Pfleiderer 1985, Boyd and Prescott 1986, Allen 1990).

A part of this writing unequivocally joins the role of data in a development model. Financial intermediaries, according to Greenwood and Jovanovic (2010), produce better knowledge, improve resource allocation, and foster development. More people can afford to enter financial intermediaries as a result of growth, which enhances the intermediaries' ability to generate better information. Financial intermediaries, according to King and Levine (2013), will build the pace of mechanical advancement by tracking down business people with the best possibilities of effectively launching new products and manufacturing methods.

Finance and Inequality Theory

Financial growth impacts income circulation, since it affects the fiscal prospects of individuals. A colossal group of empirical study proposing that more evolved monetary frameworks lessen inequality. However, hypothetical investigations are not indisputable. Demirgüç-Kunt and Levine (2010) survey the writing on the finance imbalance nexus and recognize three distinct kinds of impacts: direct intensive margin effects, direct extensive margin effects, and indirect effects.

Direct extensive margin effects insinuate the utilization of monetary services by people who had never utilized services. One bunch of models contends that monetary advancement might further develop pay appropriation since admittance to monetary services ought to permit low-pay people to work on their human and tangible capital. For example, models by Becker and Tomes (1986) and Galor and Zeira (1993) feature data and exchanges costs related with financing schooling. Their models estimate that imbalance drops when low-pay families borrow to pay for the education of their minors.

A second set of models contends that monetary improvement might lessen the impacts of outside bad shocks that overall influences all the more emphatically the unbanked, low-pay sections of the populace. Jacoby and Skoufias (1997) and Baland and Robinson (1998) call attention to the association among education and the smoothing of antagonistic pay shocks. Their models gauge that imbalance falls when low-pay families utilize monetary services to limit pay shocks. In these models, guardians with access to monetary services that face a negative pay shock are less inclined to decrease interest in the education of their kids than guardians without access to those services.

A third set of models calls attention to the role of business. Aghion and Bolton (1997) and Bardhan (2000), observed that low-pay business visionaries will quite often stay in poverty because of monetary markets that loan just to individuals with adequate

security rather than to the people who have the most productive thoughts.

Empirical Literature Review

Anang, Sipiläinen, Bäckman and Kola (2015) study focused on farmers in rural Ghana and examined determinants of access to credit for agriculture. The study looked at both the admittance to credit by the ranchers and the size of credit accessed. Heckman selection model was used as the analytical tool. The study's findings were that gender, sex, income, farm assets, technology, farm location, and knowledge of credit organizations in the area influenced access to credit and the size of loan accessed. The current study considered money market, cost of credit, terms of credit and financial knowledge as its variables to measure access to capital finance.

Nosiru, (2010) conducted a study on micro credits and agricultural productivity in Ogun State, Nigeria. The study used structured questionnaire to collect data from a sample of ninety small- scale farmers where 31 are microcredit beneficiaries and 59 non-beneficiaries. The study demonstrated that microcredit permitted ranchers to buy the inputs they needed to expand their agricultural productivity using the OLS regression model. The current study focused on the effect of access to capital finance on performance of small scale farms in Nyandarua County, Kenya.

The American Bankers' Association (0021 Booklet) refers to credit as money lent. Credit cards, overdrafts, mortgage loans, and personal loans are all common types of credit. These words likewise apply to the length of your loan servicing plan with a bank, like two years or three years. MFIs are the major source of external financing for SMEs, according to the Organization for Economic Co-operation and Development (OECD, 2013).

As per Maertens (2011) credit constraint is a significant issue to small holder ranchers in Senegal. The study observed that such ranchers are credit constrained as they need access to credit by any means, while others access yet not to satisfactory sums important to buy the fundamental inputs and make essential ventures. Thusly, Maertens noticed that credit limitations among smallholder ranchers limit their farm production and productivity development. The study saw the necessity for smallholder ranchers to look for off ranch business and pay to ease credit and information limitations.

Access to credit is viewed as a critical variable for speeding up business development (Shinozaki, 2012). Shinozaki noticed that less credit constrained small and medium enterprises can build their business development compared to credit constrained enterprises.

Aivazian, Mazumdar and Santor (2013) investigated on monetary constraints and investment: assessing the impact of a World Bank advance program on Sri Lanka's little and medium-sized businesses**.** The study discovered that small businesses have a harder time getting credit when fiscal markets are undeveloped, sectioned, or exposed to unpredictable credit allocation mechanisms As indicated by the authors, the World Bank interventions have given Sri Lankan financially constrained small and medium businesses with greatly subsidized credit facilities. The current study evaluated the relationship between these constraints of credit access and the effect on performance of the small scale farmers.

Hatab and Hess (2013) recommend that small agrarian exporters suffer liquidity challenges which make it hard for the organizations to cater for expenses of exportation and trade changes. It is likewise seen that such firms lack sufficient capital, experience significant expenses of credit access and export advances from monetary institutions. In certain conditions, the author noticed that small agricultural firms don't get credit because of the reluctance of the banks to serve them. Certainly, the creator notes that firms should foster closer connections and joint efforts with firms that supply them with quality agrarian items and furthermore accumulate data about costs and guidelines of foreign markets.

Njoroge (2013) researched on the correlation between entrepreneurial success and monetary literacy among SMEs in Nairobi County. The objective was to establish whether there exists a relationship between entrepreneurial successes in SMEs in Nairobi County. The findings concluded that the formal SMEs entrepreneurs were more financially literate as compared to their informal counterparts. There was a positive link between monetary Literacy and commercial success among Nairobi County SMEs. However the research focused on SMEs in Nairobi County whereas the current study focused on small scale farmers in Nyandarua County.

Isaiah (2013) studied the effect of monetary literacy on the productivity of some small scale businesses in Calabar, Nigeria. The study investigated their level of financial literacy adoption and reviewed relevant literature. A carefully designed questionnaire and a financial literacy test were applied to collect statistics on the extent of acceptance of monetary literacy. To split the small scale firms into ten bands, stratified random sampling was applied, and then random sampling was used. The study data were analyzed using one-way analysis of variance (ANOVA) and a dependent T-test with a 5% degree of significance. The findings revealed that small businesses in Calabar Municipality have a low level of financial literacy and that the use of accounting records has a direct impact on their profitability. In the current study financial knowledge is just a variable among the four, the study shows the relationship of monetary literacy to performance of the small scale farmers.

Sabana (2014) conducted research to determine the relationship between financial literacy and financial access among Nairobi County micro entrepreneurs. The study's results revealed that entrepreneur financial literacy has a statistically important impact on business performance, indicating that the concept that financial literacy impacts on business performance is endorsed. The study also revealed that monetary literacy has an important impact on commercial access, proving the hypothesis that financial literacy has an impact on financial access. The study however focused on entrepreneurship in Nairobi County, which is quite different from the financial knowledge in Nyandarua County which is less developed and has lesser knowledge of financial services.

METHODOLOGY

The researcher adopted descriptive research design during the study. This study focused on the farmers of Nyandarua involved in small scales farming. According to the 2019 population census, Nyandarua County had a population of 638,274. This comprised of 315,011 males and 323,243 females, projected to grow at 2.4 per cent annually. The small scale farmers number 149,067 from where a well distributed sample was picked using ratified random probability sampling technique to guarantee reasonable representation and generalization of finding to the overall populace. Nyandarua was chosen as the target population as it is dominated by small scale farms and financial inclusion is not well advanced as compared to other counties. The study used a proportionate sampling method to choose a sample size of 100 from the seven Nyandarua sub-counties, thus giving a good representation of the county of Nyandarua.

The main data collection methods was interviews, questionnaires, and observation techniques. To ensure relevance to the research problem in the study, the data collection instruments was generated and organized based on the research questions and specific objectives.

The nature of this study necessitates the use of a questionnaire. A questionnaire, according to Best and Khan (2004), is simple to use. Questionnaires often eliminate bias because, unlike a face-to-face survey, respondents are not influenced by the researchers' own views when answering questions. Each questionnaire had two parts. Part one consisted of personal data of the respondents and section two contained data on factors influencing access to capital finance. The questionnaire was intended to have both open and close ended

questions. For the study of quantitative data, computer programs that are compliant with data analysis, such as Statistical Package for Social Sciences (SPSS), was used. SPSS can deal with a lot of information because of its wide scope of statistical systems, many of which are tailored to the social sciences and are very effective. Multiple regressions was used to analyse the results.

FINDINGS AND DISCUSSIONS

Descriptive Statistics

The study categorizes descriptive statistics into two that is discrete or categorical and continuous variables. The results were presented as follows

Discrete Variables

These are variables which are categorical in nature. The results are presented in table 1.

Table 1: Descriptive Statistics for categorical variables

Variables	Sub-category	Frequency	Percentage
Gender	Female	40	40.0
	Male	60	60.0
	Total		**100.0**
Education Level	Certificate	65	65.0
	Diploma	30	30.0
	Degree	5	5.0
	Total		**100.0**
Crop grown	Kales	4	4.0
	Peas	4	4.0
	Maize	24	24.0
	Cabbage	8	8.0
	Irish potato	60	60.0
			100.0
Su-county	Kinangop	17	17.0
	Kipipiri	15	15.0
	Mirangine	11	11.0
	Nyandurua Central	12	12.0
	Nyandurua North	15	15.0
	Nyandurua South	15	15.0
	Nyandurua West	15	15.0
	Total		**100.0**
Account possession	No account	5	5.0
	Sacco	10	10.0
	Bank	50	50.0
	Bank & sacco	35	35.0
			100.0

Source: Researcher (2023)

The results in table 1 showed that majority of small scale farmers in Nyandarua County were mainly male at 60 percent slightly above 50 percent however, female who engage in the activity are at 40 percent. This implies that men value small scale farming than female in the region. Majority of small scale farmers have certificate level of education at 65 percent, this is because of failure to secure jobs in the formal sector resorting to small scale farming to earn a living. Those with diploma level of education comes second at 30 percent while small scale farming is less dominated by those with degree level of education at 5 percent, this is because majority of degree holders in the county have secured decent jobs in the formal sector. The results also show that majority of small scale farmers, grow Irish potato at 60 percent followed by maize farmers at 24 percent then cabbage farmers at 8 percent and kales and peas farmers at 4 percent respectively. This shows that most small scale farmers in Nyandarua County

prefer growing Irish potatoes as opposed to other crops, this is because of returns received from the sale of Irish potato is higher than the return from other crops in the region.

The results also revealed that most of these small scale farmers are in Kinangop sub-county at 17 percent followed closely by Kipiriri, Nyandarua North, Nyandarua South and Nyandarua West at 15 percent each. Nyandarua Central, Mirangine at 12 percent and 11 percent respectively. Most of the small scale farmers were found to own account in commercial banks at 50 percent and 35 percent have accounts with both banks and saccos. Only 5 percent were found to not own account in any financial institution. This enables small scale farmers to acquire loans from banks and saccos to improve their small scale farming in the county and also save the excess revenue generated from crop sales.

Continuous Variables

The results for descriptive statistics for continuous variables are present in table 2.

Table 2: Descriptive Statistics for Continuous Variables

Variables	Obs.	Mean	Std. dev	Minimum	Maximum
Age	100	2.7	1.23501	0	4
Credit cost	100	1.8833	0.4174	1	2.5
Financial knowledge	100	2.4333	0.72125	0.16667	3.3333
Performance	100	1.9125	0.75910	0.5	3
Money market	100	1.7167	0.41405	0.8333	2.5

Source: Researcher (2023)

The results showed that majority of small scale farmers in county are aged between 45-50 years with a standard deviation of 1.235. Small scale farmers have a maximum age of above 51 years and a minimum age of below 25 years. The age group 45-50 years is the most energetic amongst the population and is capable of active engagement in farming activities in the county. Credit cost has a mean of 1.9 with a standard deviation of 0.42 implying that majority of small scale farmers disagreed that cost of credit hinder access to credit hence affecting crop production. Financial knowledge has a mean of 2.43 with a standard deviation of 0.72 indicating that small scale farmers disagreed that financial knowledge does not affect their crop farming implying that small scale farmers are not well equipped with farming and financial knowledge in terms of where to access credit, rate of interest in the market, credit terms prevailing in the market.

Similarly, financial information does not flow to villages where these farmers reside and there is lack of awareness on source of cheap credit to boost small scale farming in the region. Money market has a mean value of 1.72 with a standard deviation of 0.41 implying that money market conditions were not favourable to small scale farmers because of barriers and conditions set to access credit were beyond the ability of small scale farmers to provide in order to access credit to improve farming activity. The performance of small scale farmers has a mean value of 1.91 with a standard deviation of 0.76 indicating that performance of small scale farmers was not to the standard because of low output per hectare. On the other hand, all the variables have a minimum value of about 1 and a maximum value of about 3 implying that small scale farmers disagreed with measures of these variables and some were neutral with the statements.

Correlation Analysis

Correlation analysis was carried out using Pearson Correlation coefficient to ensure that both the independent and dependent variables not highly correlated to avoid chances of getting spurious results. The results showed that all the variables are not highly correlated since all the coefficients are less than 0.8 and according to the rule of the thumb, a correlation coefficient less than or equal to 0.8 implies no chance of high correlation and therefore

all the variables can be used in the same equation or estimation model.

Table 3: Correlation Analysis results

Variables	Credit cost	Financial Knowledge	Performance	Money market	Credit terms	Gender	Age	Educ. Level	Crop grown	Bank account
Credit cost	1.000									
Financial knowledge	0.333	1.000								
Performance	0.120	0.708	1.000							
Money market	0.424	-0.149	-0.120	1.000						
Credit terms	0.070	0.430	0.717	0.143	1.000					
Gender	0.385	0.066	0.007	0.512	-0.028	1.000				
Age	-0.10	-0.174	-0.150	0.244	-0.031	0.382	1.000			
Educ. Level	0.399	0.163	0.080	0.090	-0.093	0.210	-0.042	1.000		
Crop grown	0.133	0.095	0.122	0.050	0.075	0.166	0.083	0.009	1.000	
Bank account	0.737	0.311	0.126	0.360	-0.089	0.412	-0.262	0.303	0.018	1.000

Source: Researcher (2023)

Reliability Analysis

The test was carried out suing Cronbach's Alpha techniques to ensure that the variables stand future test and results are consistent over time. The results are presented in table 4.

Table 4: Reliability Analysis

Variables	Observations	Sign	Cronbach's Alpha	Decision
Money Market	100	Positive	0.6554	Reliable
Cost of Credit	100	Positive	0.6372	Reliable
Financial Knowledge	100	Positive	0.6562	Reliable
Credit Terms	100	Positive	0.7015	Reliable
Gender	100	Positive	0.7023	Reliable
Age	100	Negative	0.7399	Reliable
Education level	100	Positive	0.7043	Reliable
Crop grown	100	Positive	0.7268	Reliable
Account Possession	100	Positive	0.6501	Reliable
Performance	100	Positive	0.6693	Reliable
Overall Cronbach alpha Index			0.6920	Reliable

Source: Researcher (2023)

The results showed Cronbach alpha is between 0.6 - 0.7 and the overall Cronbach alpha index is found to be 0.6920. This indicates that the instrument was reliable and good for analysis due to its internal consistency. According to Ursach, Horodnic & Zait (2015) a Cronbach alpha index between 0.6-0.7 is generally accepted and implies an adequate level of reliability of the research instrument. All the variables were found to be positive except age of the respondent was found to be negative.

Hausman Test

The test was carried to determine which model between the fixed effect and random effect is the best estimation model. The results are presented in table 5.

Table 5: Hausman Test

Test	Chi-square	Probability
Hausman	0.52	1.000

Source: Researcher (2023)

The results showed that the probability of Chi-square is greater than 0.05 at 5 percent level of significance and according to Hausman if p-value is less than 0.05 then fixed effect model is adopted and if p-value is greater than 0.05 then random effect is used. From the results presented p-value is more than 0.05 therefore random effect is used to analyze the study findings.

Regression Analysis

Regression analysis was carried out using panel random effect regression model to determine how the independent variables influence the dependent variable of the study. The results for the analysis are presented in table 6.

Table 6: Panel Regression Results

Dependent Variable: Performance				
Variables	**Coefficient**	**Standard error**	**z**	**p>|z|**
Terms of credit	1.1544	0.1381	8.36	0.000
Financial knowledge	0.4926	0.0693	7.11	0.000
Cost of credit	-0.4244	0.1768	-2.40	0.011
Money market	-0.1175	0.1745	-0.67	0.503
Gender	0.0064	0.1187	0.05	0.957
Age	-0.01454	0.04367	-0.33	0.798
Education level	0.1258	0.0775	1.62	0.011
Crop grown	0.0441	0.0362	1.22	0.223
Constant term	-0.6087	0.2959	-2.06	0.040
Sigma_u	0	Wald Chi-square		261.06
Sigma_e	0.4139	p-value		0.000
Rho	0			

Source: Researcher (2023)

The results showed that rho value is zero implying that the variability within the sub-counties is large relative to between sub-counties hence no difference within the sub-counties. Similarly, the p-value of Chi-square is 0.000 indicating that performance of small scale farmers in Nyandarua County is influenced by credit terms, financial knowledge, cost of credit, money market conditions, gender, age, education level, crop grown and account holding. Further, the results show that constant term value is -0.6087 indicating that in the absence of the factors the study considered, the performance of small scale farmers in Nyandarua County would be negative meaning that the farmers would be making losses from the farming activities in the area.

The coefficient of terms of credit was found positive (1.1544) with a p-value of 0.000 less than 0.05 at 5 percent level of significance implying that terms of credit significantly influence access to credit which ultimately influence performance of small scale farmers in terms of food production in the county. This means that a change in credit terms by one percent point leads to an increase food production by 115.4 percent points. The finding confirms Prasad *et al*., (2005) and Maerters (2008) that access to credit facilitated by good credit terms in the market greatly determines the degree of credit access leading to high level of food production by the small scale farmers. Similarly, the findings show that the coefficient of financial knowledge was positive (0.4926) and statistically significant at 5 percent level

of significance, meaning that financial knowledge importantly influence performance of small scale farmers in terms of food production. An improvement in financial knowledge by one percent, food production increase by 49.3 percent points, this indicate that better information flow on credit availability allows farmers to apply for credit and access credit leading to better production. The finding agrees with Njoroge (2013) and Isaiah (2013) that a financial literate farmer is able to access credit and also maintain good accounting records in terms of productivity and monitor production standards at each level. The finding also corroborates Sabana (2014) that financial literacy of the entrepreneurs boost business performance and also increases credit access by small scale farmers in the county.

The coefficient of cost of credit was negative (-0.1175) and significantly influence performance of small scale farmers. This means that an increase in the cost of credit by one percent leads to a reduction in food production by small scale farmers by 42.44 percent points. The p-value was also found to be less than 0.05 indicating that cost of credit importantly influences small scale farmers' production capacity in the county. The finding disagrees with Aivazian *et al*., (2013) small scale businesses do not have hard time accessing credit in Sri Lanka though the country is undeveloped and that the financial institutions constraint small businesses with a subsidized credit.

The coefficient of money market was also found negative (-0.1175) and insignificantly influence the performance of small scale farmers in Nyandarua, this means that a change in money market conditions by one percent, performance of small scale food producers in Nyandarua changes by 11.75 percent points. The finding confirms Nosiru (2010) that found no importance of money market on total yield of small scale farmers in Ogun region, Nigeria due to lack of sensible use and redirecting of credit acquired to other uses apart from farming venture. Although money market functions normally in the Nyandarua, credit access is used for various business ventures other than farming hence having no direct relationship. Similarly, the study opined that gender of the applicant does not greatly influence output of the small scale farmers since it have no influence in access to credit. The finding shows that a change in gender status from female to male farm production increases by 0.64 percent points implying that a male small scale farmer is likely to produce more food crops than female counterparts by 0.64 percent holding all other factors constant. The finding contradicts Anang *et al*., (2015) that found out that gender and sex of the applicant positive influence credit access which subsequently lead to high farm yield. Moreover, age of the respondent was negative (-0.01454) and statistically insignificant at 5 percent level of significance, meaning an increase in age of the farmers by one year leads to a decline in farm output by 1.45 percent in Nyandarua County. This implies as the farmer grows old, the energy and strength needed in farming activities declines leading to low production hence low performance.

The coefficient of education was positive (0.1258) and statistically significant at 5 percent level of significance implying that a change in literacy level facilitates knowledge acquisition on the availability of credit hence improving the farm performance of such a farmer. The finding confirms Anang *et al*., (2015) and Obwona (2010) that found education level of the farmers to importantly influence farm yield in Nigeria. Holding an account in any financial institution improves farms performance of the farmers in Nyandarua because the small scale farmers are able to access credit from the financial institutions and buy farm inputs such as fertilizer, chemicals, quality seeds and hire tractors to prepare and even labourers leading to more yield per hectare. From the above findings it is evidenced that access to capital market by small scale farmers importantly influences performance of farmers in terms of crop yield in Nyandarua County.

CONCLUSION AND RECOMMENDATIONS

Financial access in modern economy is important in the growth of both small and medium enterprises as well as the performance of small scale farmers in various parts of the country. Agricultural sector in Kenya is very unpredictable therefore only informal

and semi-informal financial institutions are playing key roles in advancing credit to small scale farmers even though they are normally unregulated by the monetary authority. These financial institutions often offer credit at higher interest rates to farmers leading to a reduction in profit margins once credit has been serviced. In Nyandarua County, the production of major food crops has been on the decline in recent past leading to food insecurity in the country as Nyandarua is one of counties that supply the country with food. A report by FAO show a consistence decline in potato production from 22 tonnes per hectare in 2010 to 9 tonnes in 2020 FAO (2020), pointing to the ever dwindling food production in Kenya. This necessitated the current study to investigate the role played by financial capital market in performance of small scale farmers in Nyandarua County.

The study was supported by four objectives; the first objective was to identify the influence of money market on the performance of small scale farmers in Nyandarua County, secondly, to evaluate the influence of cost of credit on the performance of small scale farmers in Nyandarua County, third was to examine the influence of the terms of credit on the performance of small scale farmers in Nyandarua County and lastly, to determine the effect of financial knowledge on access to capital finance and performance of small scale farmers in Nyandarua County. The study has shown that costs of credit, terms of credit and financial knowledge significantly influence the performance of small scale farmers in the county, while money market had insignificant influence.

The study was guided by two theories; theory of finance and growth together with theory of finance and inequality, where the theory of finance and growth articulates that finance flows towards sectors or activities that have gainful undertakings while other dormant regions or undertaking are discriminated in terms of capital access.

The study employed descriptive research design with a stratified and random sampling technique to select the participants in the study. The primary data was collected using semi-structured questionnaire from 100 respondents selected. The data collected was analyzed using panel regression model in order to estimate the influence of capital finance market on performance of small scale farmers in Nyandarua County. The findings show that access to capital finance greatly influences performance of small scale farmers in Nyandarua.

The study sought to achieve four objectives namely; to identify the influence of money market on the performance of small scale farmers in Nyandarua County, to evaluate the influence of cost of credit on the performance of small scale farmers in Nyandarua County, to examine the influence of the terms of credit on the performance of small scale farmers in Nyandarua County and lastly, to determine the effect of financial knowledge on access to capital finance and performance of small scale farmers in Nyandarua County.

The study concluded that terms of credit and financial knowledge positively and significantly influence access to credit and performance of small scale farmers in Nyandarua County. Terms of credit was measured by sub-variables such as repayment period and socio-demographic factors, while financial knowledge was measured by information flow and business management skills.

On the other hand, cost of credit negatively influenced access to credit and performance of small scale farmers in Nyandarua County, while money market was established to insignificantly influence the performance of small scale farmers in the region. The cost of credit was measured by rate of interest and credit processing fees while money market was measured by barrier to entry, credit demand and availability of financial services. The study also considered the influence of financial knowledge on the performance of small scale farmers and concluded that education level and holding an account with financial institutions greatly influence the performance of small scale farmers in the county.

The study showed that costs of credit, terms of credit and financial knowledge importantly influence the performance of small scale farmers in the county. Other factors that influence the performance of small scale farmers are education level and account ownership.

From the findings, therefore, the study recommends that financial institutions should lower lending rates to small scale farmers to enable financial flow in order to enhance crop production and ensure food security in the county as well as in the country. Further, the financial institutions should provide credit at affordable terms by extending repayment period to allow the farmers to harvest their produce, sale and then make repayment.

Similarly, both county and national governments should provide cheap loans to farmers to enhance food production and economic growth in the country. These cheap loans could be interest-free with a longer repayment period to eliminate barriers posted by the financial institutions. Non-governmental organizations with interest in agriculture should training farmers on the best farming practices and sources of cheap loan so as to ensure financial information flow among the small scale farmers thus facilitating credit access hence improving food production and economic growth in the county.

Both county and national governments should ensure free education to all on agricultural production at the technical college so that all are equipped with technical know-how to improve food production in the country.

Government should introduce agricultural extension officers within the agricultural zones to create awareness on the existence of market for the farms produce as this accelerates production of food crops due to ready market across the country and abroad, leading to improved economic wellbeing of the farmers.

Areas for Further Study

The study has shown that access to financial capital market significantly influence performance of small scale farmers in the county, therefore, further research should be carried out in other counties to determine which factors influence agricultural production to ensure food security and economic growth in the country at large. Further studies should also be done to determine low agricultural production even though Kenya is considered to have a well-developed financial sector to support agricultural production. Lastly, research should be done to determine the insignificance influence of money market on the performance of small scale famers in Kenya and how it can be harnessed to increase agricultural productivity and grow the economy.

REFERENCES

Akinseinde. (2012). Nonfarm activity and production efficiency of farm household in Egbede local government of Oyo state. *An unpublished MSc project, Department of Agricultural Economics, University of Ibadan*.

Central Bank of Kenya, (2020). Central Bank of Kenya: Bank Supervision Annual Report 2020

Hazell, P. B. R. (2005). Is there a future for small farms? Agricultural Economics, 32: 93–101. Dorward, *et al*. (2004). "A Policy Agenda for ProPoor Agricultural Growth." World Development 32 (1): 73-89.

Heidhues, F., and M. Brüntrup. (2003). *Subsistence agriculture in development: Its role in processes of structural change. Vol. 22. Halle, Germany*: Institute of Agricultural Development in Central and Eastern Europe (IAMO).

Kutya, L. (2012). *Small Scale Agricultue.* New York: Afesis-Corplan.

Mugenda, M.O, Mugenda, G.A, (2003). Research Methods: Quantitative Approaches. Nairobi: Acts Press.

Njenga, S. K. (2005). *Productivity and Social-cultural aspects of local Poltry phynotypes in Coastal Kenya.* Denmark: Royal agricultural University.

Nosiru, M. O. (2010). Micro credits and agricultural productivity in Ogun State, Nigeria. *World Journal of Agricultural Sciences 6 (3)*, Pp290-296, 1817-3047 © IDOSI Publications.

Obwona, M. B., (2010). "Determinants of Technical Efficiency Differentials among Small and Medium Scale Farmers in Uganda: A Case of Tobacco Growers." Final Report, AERC Workshop, Kenya.

Odhiambo, W. and Nyangito H. (2003). Measuring and Analyzing Agricultural Productivity in Kenya: a Review of Approaches

Okurut, N., Schobee, A., & Van Der Berg, S. (2007). Credit Demand and credit rationing in the informal financial sector in Uganda. *The Macro-Micro Linkage*, 1-6.

Okurut, N., Schoombee, A., & Van Der Berg, S. (2010). Credit Demand and Credit rationing in the informal financial sector. *Macro-Micro Linkage*.

Oluwatayo, J. 2012. Validity and reliability issues in educational research. *Journal of Educational and Social Research* 2, 391-400.

Prasad S, Green C J, Murinde V. (2005). Company financing, capital structure ownership: a survey and implications for developing countries. In Finance and Development: Surveys of Theory, Evidence and Policy, Green CJ, Kirkpatrick CH, Edward Elgar: Cheltenham

Ross Levine (2010). Handbook of Economic Growth, Volume 1A. Edited by Philippe Aghion and Steven N. Durlauf 12: 866-910

Schmidt, R.H. and E. Kropp. (1987). *"Rural finance guiding principles*". GTZ, Eschborn.

Spio, K. (2002). *The impact and Accessibility of Agricultural credit:A case study of small scale Farmers in Limpopo Province of South Africa.* Pretoria: University of Pretoria.

Vink, N. (2003). *The Influence of Policy on the Roles of Agriculture in South Africa Forum Papers 2003.* Cape Town: School of Economics, University of Cape Town.

World Bank (2017), World Development Report 2018: Agriculture for Development, Washington DC: The World Bank.