Determinants of Choice of Finance by Coffee Farmers in Machakos County

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ABSTRACT

Coffee farming in Kenya has faced numerous challenges over time ranging from land ownership to access to information, cultural beliefs and collateral challenges to acquisition of bank credit. This study aims to establish the determinants of choice of finance by coffee farmers in Machakos County Kenya. The study adopted a descriptive approach which utilized both quantitative and qualitative research methodologies. The study used questionnaires to collect data from a sample of ninety-six (96) respondents. Multiple regression analysis was undertaken to test the relationship between the independent variable (collateral, interest rates, bureaucracy and accessibility to financial institutions) and the dependent variable (choice of finance). The findings indicate that R is 0.726, \( R^2 \) is 0.527 and adjusted \( R^2 \) is 0.5905. ANOVA of the data showed that \( F \) calculated is greater than \( F \) critical (26.361>2.49), indicating that the overall model was reliable in predicting the relationship between the independent variable (collateral, interest rates, bureaucracy and accessibility to financial institutions) and the dependent variable (choice of finance). The study concludes that there was a statistically significant association between collateral, interest rates, bureaucracy and accessibility to financial institutions and selection of funding as the p values 0.039, 0.001, 0.015, 0.011 and 0.018 are less than 0.05 at 5% level of significance. The study recommends that government and financial institutions, as well as other lending institutions, should consider coming up with policies and procedures geared towards catering for specific credit needs of farmers.

Key words: Coffee Board of Kenya, Coffee Marketing Board, Collateral, Interest Rate
1.0 INTRODUCTION

Coffee is an essential economic commodity in Kenya, and it is estimated that about 9 billion dollars of coffee were traded between 1999 and 2000 (Angula, 2010). It is also estimated that about 20 million families globally depend on coffee production, most of which are from developing countries (Giovannucci, Potts, Killian, Wunderlich, Soto, Schuller & Vagneron, 2008). As of 2015, this numbers had reached 25 million people (Njabani, 2015). However, the coffee crisis of 1989 which resulted from the collapse of the International Coffee Agreement led to a decline in coffee prices, and this was regarded as the biggest crisis in coffee ever to happen. Before this crisis, prices were stable due to the management led by the International Coffee Organization (ICO). This coffee crisis resulted in social and financial hardships among coffee farmers all over the world (Zeller, Sharma, Henry, & Lapenu, 2006).

In Ethiopia, a key producer of coffee in Africa and globally (Anteneh, Muradian, Ruben 2011), the value chain consists of a multiplicity of actors both in public and private sector (Gemech & Struthers, 2007). The length of this value chain often leads to failure of the coffee market, with coffee producers reaping very low profits from this enterprise. In Uganda, the performance of the coffee market is reduced due to challenges in access to credit by farmers (Angula, 2010).

In Kenya, coffee farming was introduced in 1893 in Bura (Taita Hills), and later spread to Kibwezi and then Kikuyu in 1904 (Coffee Board of Kenya, 2014). The Kenyan brand is famous and known worldwide for its pleasant aroma and flavor. 160,000 hectares of Kenyan land is estimated to be under coffee, the bulk of which is in the co-operative sub-sector (75.5%) followed by the estates (24.5%) estates (Coffee Board of Kenya, 2014).

A study conducted by Gathura (2013) in Githunguri District revealed that the productivity of coffee in Kenya is significantly affected by the prevailing marketing factors especially finances. Other factors that also influence coffee production in Kenya include government policies human and physical (Gathura, 2013). The study also found that small-scale coffee producers are more vulnerable to the adverse factors in coffee production as compared to the plantation and estate owners, and also. According to Njoroge & Mbogo, (2010), farm inputs contribute to 66% of total farm costs in coffee production.

In Machakos, coffee farmers, a majority of who are smallholder, may not be able to meet the full demand of farm inputs. It is, therefore, necessary for them to source for external funding from credit and finance institutions to enable them to meet these needs. However, these farmers face challenges in accessing these funds, ranging from lengthy bureaucracy and protocols to fraud and corrupt institutions.

The current study’s primary objective was to establish the factors that determine the choice of finance by coffee farmers in Machakos County. The specific objectives of the study are to: determine the effect of collateral on the high-interest’ choice of finance and establish the effect of interest rates on the farmers’ choice of finance in the County. This study would be useful in validating the range of coffee farmers’ decision criterion to be used in selecting the best finance option; it would hence, therefore, contribute to...
knowledge gaps and help financial institutions to devise more efficient ways of funding agricultural produce in the coffee growing zones.

2.0 LITERATURE REVIEW

2.1 Theoretical Literature Review

i) Consumer Choice Theory
Theory of consumer choice is the study of the way people choose to spend their money on their preferences and depending on the constraints of their budget (Berliant, 2008). It shows how individuals make choices about their income and the market prices of goods and services. The theory gives an understanding of how the benefits and tastes of a person influence the demand curve (Berliant, 2008). People select to consume less than what they would have desired due to the limitation on their spending by their income.

The budget constraint of a consumer shows the combinations of different goods the customer can buy given the price of the goods and his income (Mankiw, 2007). A fall in the price of a good creates both a substitution effect and income effect on the consumer’s choice. The reduced price may make the impact’s life better off and hence creates an income effect while substitution effect for if there is a change in what develop because the reduction of price encourages a greater consumption of cheaper goods (Mankiw, 2007).

ii) Rational Choice Theory
The Rational Choice Theory is used to explain the economic and social behaviors of individuals. The theory explains that the choices of humans are influenced by their preferences and goals and their actions are regulated by the conditions within which they work or operate to achieve their targets (Cullis & Jones, 2009). According to the theory, it is close to impossible for humans to achieve all that they want, and so they should have a clear understanding of the selection of their goals and the possible consequences of such choice (Barberis & Thaler, 2003). People will always try to make choices that will give them the best results. The theory treats any social contact or interaction as a mode of social exchange, and the contact can be economic thus leading to the exchange of goods and services (Cullis & Jones, 2009). The theory puts into consideration rewards as benefits and punishments as costs to keep the economic and social actions parallel, the reason for this is to ensure the economic and social activities remain identical. The human actions are therefore dominated by their desire always to get rewards.

iii) Prospect Theory
The prospect theory gives the investors a chance to choose alternatives from risks which they deem right. Moreover, the theory gives consideration to the empirical evidence describing how people can evaluate their potential gains and losses (Barberis et al., 1999). There are two stages involved in this theory which include editing and
evaluation. In the editing process, expected outcomes from the decision are arranged on a probability basis. In the second stage of the assessment, computation of values is done depending on the potential outcomes expectations they have. People can then choose an alternative, which has higher utility as compared to the other (Kahneman & Tversky, 1979).

**iv) Cumulative Prospect Theory**
This cumulative prospect theory defines a model for descriptive decisions in the context of risk and contributes to the domain of behavioral economics (Tversky & Kahneman, 1992).

This theory allows investors to factor in risk in their gains and losses. Besides, extreme events are often underweighted and weak events underweighted. Also, this selection allows for the arbitrary and distinct outcomes. This theory is applied in various situations which seem inconsistent with common economic and standard understanding (Tversky & Kahneman, 1992).

**2.2 Empirical Literature Review**

**i) Collateral and Farmers’ Choice of Finance**
Collateral refers to any property or asset that a borrower may offer to a lender as security against the loan. The collateral is, therefore, important as it reduces the credit risk. Collateral is a term commonly used in lending agreements to define the pledge of the borrower to a lender and can be in the form of a particular property (Sheffrin, 2003). It serves as the protection to the lender so as to cushion against borrowers’ chances of default. The collateral can as well be used to offset the loan in a case where the borrower fails to pay the principal loan plus the interest by the terms of agreement on the obligations of the loan (Sheffrin, 2003). In the case of coffee farmers, they can pledge their properties like farm produce, land or any other assets they possess. Collateral applies in the context of banking and can be more complex in a case there is the need to secure trade transactions in a concept referred to as capital market collateralization (Onysko, Sholudko & Sodoma, 2015). A study conducted by Berger and Udell (2006) revealed that the relationship developed between the lender and the borrower has a great impact on the way the loans are handled in small firm finance. The study findings showed that the borrowers who have a long banking relationship with the lenders would get reduced interest rates, and at times they may become less likely to pledge collaterals (Berger & Udell, 2006). The relationships developed between the coffee farmers, and the lending institutions will be very vital when it come to the use of collaterals or even the loan rates.

According to Swinnen, (2007), most banks find the financing of agriculture as a very high-risk activity due to the low profitability of the sector, high inflation rates, poor land markets and problems associated with collateral relating to the uncertainty of property rights. It was also observed that there is a weak relationship between the bankers and the farmers and due to this; farmers have often been made to provide long-term collateral as security for short-term loans (Hayes, 2004). Lending institutions also always prefer the use
of insurance in urban areas than the countryside because it becomes very hard to sell a property like land in the rural area in a case where the borrower defaults (Swinnen, 2007).

In Kenya, most popular forms of collateral to access formal credit include house and home goods, land, animals, agricultural equipment, vehicles and household goods. The extent of the collaterals cover guarantors, good credit history, car log books, a copy of business license, land title, KRA pin and household goods which are required by financial institutions (Nyanamba & Omari, 2013). The study also found out that most farmers apply for funds from various organizations which include Faulu, Mwalimu Sacco and Murata Sacco Limited, Equity Bank, KCB Bank, K-rep Bank, Family Bank, and each of the financial institutions had its collateral characteristics which farmers prefer before taking money.

**ii) Interest Rates and Farmers’ Choice of Finance**

According to Adofu, Abula and Audu (2010), the interest rates charged by banks on loans are a key impediment to the economy and were found to discourage local investors. The local small-scale farmers may not afford the high-interest rates and so may opt not to take the loan thus affecting their choices of finance. Evidence from a study conducted by Bernard, Sare and Musah (2014) showed that a majority of small-scale businesses resort to informal sector financing for support of their activities. This was attributed to several factors where the interest rate was found to be the major factor influencing the decisions made by the choices of finance.

It has also been realized that the level of financial literacy and awareness or information about loans and interest rates have a significant influence on the way in which individuals take part in the loans (Wachira & Kihiu, 2012). Most coffee farmers in Machakos only have primary education and their knowledge of finance and credit may be very limited, hence influencing their choice of funding. Various studies have shown that the cost of interest rate, the way interest rate is spread and the duration of the loan repayment significantly influence an individual’s decision to take a loan and his/her choice on the form of financial support (Njongoro, 2013). It can be concluded that interest rates play a significant role in decision making by coffee farmers to take up loans or their choices of the source of the loan or any other form of finance. High-interest rates have been found to discourage farmers from taking up loans and limited information about the operation of the credit institutions and other financial sectors influence their decisions.

**Collateral, Interest rates, Government Regulation and Choice of Finance**

A study conducted by Gathura (2013) in Githunguri District revealed that the productivity of coffee in Kenya is significantly affected by the dominant market factors especially the finances. Other factors that also influence the production of coffee in Kenya include government policies (Gathura, 2013). Coffee growers from Machakos County have raised concerns with the running of some of their farmer self-help groups, the reason being the officials have not been trained on proper governance and accounting. The county government can intervene to ensure that all farmer self-help groups are registered in the county, and its officials are trained to run the farmer self-help groups.
Choice of Financing

Farmers prefer free financial associations to formal financial institutions. Scholars have argued that this preference exists as result of the information asymmetry which exists between formal financial institutions and farmers (Weyant, 2014). Those farmers who need loans have difficulties in obtaining guarantors, a requirement at formal financial institutions; and thus posing a challenge for them to borrow funds from legal institutions. This means they lack a choice and thereby turn to informal credit markets. Some scholars have also highlighted high-interest cost as an important factor affecting farmers’ choice of a loan (Guirkinger, 2008). Moreover, free loans don’t need to be written loan agreements, and this makes them more flexible in borrowing terms, reducing the transaction costs (Wang, Huang & Rozelle, 2005). Also, there is contention from the supply side, making choices to be affected by risks associated with repaying the loan.

The financing of coffee farmers in Kenya has faced numerous challenges over time ranging from land ownership to access to information, cultural beliefs, and collateral challenges. The manner in which the coffee farmers are dispersed all over the country has also made it hard for credit delivery to the farmers (Cheruiyot, 2015). The Government of Kenya finances coffee farmers through Commodities Development Fund and this has largely remained to be the primary source of coffee financing (Cheruiyot, 2015). This sub-sector of coffee farming has become less attractive to private investors because of the long turnover periods and a high-risk client base. The commercial banks have in recent times become quite reluctant towards financing coffee farmers. The credit demands in this sub-sector have accumulated up to an approximate cost of US $ 100 Million (Wangari, 2014).
2.3 Conceptual Framework

The conceptual framework of this study shows the relationship between variables to be used in the analysis. The dependent variable of this study is the choice of finance by farmers. The independent variables are collateral, and interest rates and the moderating variable is Government Regulations as shown in Figure 2.1.

**Independent Variable**

- **Collateral**
  - Assets possessed
  - Value of the assets
  - Adequacy of the assets

- **Interest rates**
  - Interests charged on loans is fair
  - Period of Banking relationship with lender
  - Review on interest rates when applying for a loan
  - Knowledge on implication of interest rates

**Moderating**

- Government Regulations

**Dependent Variable**

- Choice of Finance by Farmers
  - Family Savings
  - Income from sale of coffee
  - Loans from financial institutions
  - Loans from informal institutions

*Figure 2.1 Conceptual Framework*
3.0 RESEARCH METHODOLOGY

This study employed a descriptive design utilizing both quantitative and qualitative research methodologies. This is because the research involved interaction with groups of farmers. The study focused on coffee farmers in three coffee growing sub-counties of Machakos County including Matungulu, Kangundo and Kathiani. The coffee farmer’s selection criteria for the interviews were based on the ones who produce the highest, average and least kilograms recorded in each of their respective coffee factories. A stratified random sampling technique was used to select respondents from the coffee growing areas. Convenience sampling was also used in areas where the farmers were hard to find. The sample size for this study was 96 respondents, and a questionnaire containing both closed and open-ended questions was used. A pilot study was undertaken on ten coffee farmers to ascertain the clarity of meaning, language clarity and general layout of the questionnaire. In the analysis, percentages, frequencies, mean, mode and standard deviation were used. Regression analysis was used to test for the relationship between the independent variable (collateral and interest rates) and the dependent variable (choice of finance).

The Regression model is:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \]

Where Y= Choice of finance
\[ \beta_0 = \text{Constant} \]
\[ \beta_1 \text{ and } \beta_2 \text{ are Coefficients.} \]
\[ \varepsilon = \text{error term} \]
\[ \beta_1 = \text{collateral} \]
\[ \beta_2 = \text{interest rates} \]
4.0 RESEARCH FINDINGS AND DISCUSSION

This section presents research findings and discussion on the determinant of choice of finance by coffee farmers in Machakos County. The data was collected using a questionnaire as indicated in the research methodology. The findings are arranged according to the research objective and presented using tables and figures.

Collateral and Choice of Finance by Farmers

*Table 4.1: Collateral and Choice of Finance by Farmers*

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a loan with a Farmer Self Help Group</td>
<td>4.28</td>
<td>0.911</td>
</tr>
<tr>
<td>I have a loan from a SACCO</td>
<td>3.97</td>
<td>1.084</td>
</tr>
<tr>
<td>I have savings which I use to guarantee my loans in a SACCO</td>
<td>3.91</td>
<td>1.081</td>
</tr>
<tr>
<td>I have valid title deed which I can pledge as collateral for a loan in a bank</td>
<td>3.81</td>
<td>0.925</td>
</tr>
<tr>
<td>The bank have refused using my rural land as collateral for loans</td>
<td>3.75</td>
<td>0.986</td>
</tr>
<tr>
<td>Most banks find the financing of agriculture as a very high-risk activity</td>
<td>3.45</td>
<td>0.594</td>
</tr>
<tr>
<td>I have adequate assets to pledge as collateral in loan application</td>
<td>3.19</td>
<td>1.058</td>
</tr>
<tr>
<td>I have used my collateral to secure a loan from a financial institution</td>
<td>3.18</td>
<td>0.891</td>
</tr>
<tr>
<td>I have adequate coffee produce to pledge as collateral for loan applications</td>
<td>2.61</td>
<td>1.294</td>
</tr>
<tr>
<td>I have a comprehensive financial statement to support the farm produce previously recorded</td>
<td>2.14</td>
<td>0.789</td>
</tr>
</tbody>
</table>

Table 4.1 reveals that respondents had varied types of collaterals and choices of finance. A majority had a loan with a Farmer Self Help Group averaging 4.28. Others have a loan from a SACCO (mean of 3.97), savings which they use to guarantee loans in a SACCO (a mean of 3.91), have valid title deeds which they can pledge as collateral for a loan in a bank (mean of 3.81). And in other cases, the bank have refused to use rural land as collateral for loans (mean of 3.75). These results agree with Girante (2008) who found that guarantees in securing loans taken by the farmers boost the rate at which the payments are made and thus encouraging the farmers to gain access to the loans quite often.

The respondents to a moderate extent indicated that most banks find the financing of agriculture as a very high-risk activity, averaging 3.45. They have sufficient assets to pledge as collateral in loan application had a mean of 3.19, and they have used their collateral to secure a loan from a financial institution (mean of 3.18) (Table 4.1). These results are in line with Swinnen (2007) who found that a majority of banks consider the financing of agriculture a very high-risk activity due to the low profitability of the sector, high inflation rates, poor land markets and problems associated with collateral relating to the uncertainty of property rights.

The respondents to a moderate extent indicated that they have adequate coffee produce to pledge as collateral for loan applications with a mean of 2.61.
and they have a comprehensive financial statement to support the farm produce previously recorded with a mean of 2.14 (Table 4.1). These results concur with Hayes (2004) who found a poor relationship between the bankers and the farmers and due to this; farmers have often been made to give long-term collateral for Ph.D. loans.

**Interest Rates and Farmers’ Choice of Finance**

Several statements were given on how interest rates affect the choice of funding among farmers and the extent to which each of them influenced their selection of funding for their farming activities. Data on the responses was analyzed and mean, and standard deviations were compiled (Table 4.2), interpreted and general findings drawn from this study.

**Table 4.2 : Interest Rates and Farmers’ Choice of Finance**

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a clear understanding of how credit facilities from financial institutions operate</td>
<td>3.39</td>
<td>1.423</td>
</tr>
<tr>
<td>Interest rate is a major determinant of my choice of finance</td>
<td>3.28</td>
<td>1.351</td>
</tr>
<tr>
<td>I am well informed of the financial services available in the credit market</td>
<td>3.24</td>
<td>1.152</td>
</tr>
<tr>
<td>The loan repayment periods for loans from banks are flexible</td>
<td>3.18</td>
<td>1.232</td>
</tr>
<tr>
<td>The repayment of interest and principal within allowed time interval i.e. a month</td>
<td>2.86</td>
<td>1.023</td>
</tr>
<tr>
<td>I am offered a competitive interest rate by my bank when I apply for a facility</td>
<td>2.81</td>
<td>1.005</td>
</tr>
<tr>
<td>The interest rates changed by formal financial institutions is flexible</td>
<td>2.78</td>
<td>0.887</td>
</tr>
<tr>
<td>The loan review period among financial institutions is reasonable</td>
<td>2.66</td>
<td>0.919</td>
</tr>
<tr>
<td>Farmers have a high ability of borrowing from banks</td>
<td>2.65</td>
<td>0.915</td>
</tr>
<tr>
<td>The interest rates charged by formal financial institutions is competitive</td>
<td>2.54</td>
<td>0.854</td>
</tr>
<tr>
<td>The credit facilities repayment amounts are affordable</td>
<td>2.39</td>
<td>0.946</td>
</tr>
</tbody>
</table>

The respondents to a great extent indicated that they have a clear understanding on how credit facilities from financial institutions operate (mean of 3.39). The interest rate is a major determinant of their choice of finance at an average of 3.28; they are well informed of the financial services available in the credit market (mean of 3.24) and the loan repayment periods for loans from banks are flexible (mean of 3.18) (Table 4.2). This finding is consistent with that of Bernard et al. (2014) who showed that a majority of small-scale businesses resort to use of informal sector financing for their operations of activities. The reason behind this was attributed to several factors where the interest rate was the major cause.

The respondents agreed to a moderate extent that the repayment of interest and principal within allowed time interval i.e. a month (mean of 2.86). The interest rates charged by formal financial institutions is flexible (mean of 2.78). The loan review period among financial institutions is reasonable (mean of 2.66), Farmers have a high ability of borrowing from banks (mean of 2.65), interest rates charged by formal financial institutions is competitive (mean of 2.54) and the credit facilities repayment amounts are affordable.
(mean of 2.39) (Table 4.2). This finding concurs with Njongoro (2013) that the cost of the interest rate, the way interest rates are spread and the duration of the loan repayment greatly influences the individual’s decision to take the loans and make choices on their desired form of financial support.

**Choice of Finance by Farmers**

**Table 4.3: Choice of Finance by Farmers**

<table>
<thead>
<tr>
<th>Choice of Finance</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Savings</td>
<td>4.15</td>
<td>0.894</td>
</tr>
<tr>
<td>Income from sale of coffee</td>
<td>3.97</td>
<td>1.029</td>
</tr>
<tr>
<td>Loans from informal institutions i.e. SACCOs, MFIs, etc</td>
<td>3.45</td>
<td>1.003</td>
</tr>
<tr>
<td>Loans from financial institution</td>
<td>2.61</td>
<td>0.958</td>
</tr>
</tbody>
</table>

From the findings in Table 4.3 to a very great extent the respondents indicated family was saving as their choice of finance (mean of 4.15). To a great extent, the respondents reported income from sale of coffee at a mean of 3.97 and loan from the financial institution at an average of 3.45 as their choice of finance. To a moderate extent, they indicated that loans from informal institutions i.e. SACCOs, MFIs, etc. (mean of 2.61) as a choice of finance (Table 4.3). This finding agrees with Wang, Huang & Rozelle (2005) that informal loans don’t need to be written loan agreements and this makes them more flexible in borrowing terms, reducing the transaction costs.

**Test of Significance**

Chi-square test was used to test the relationship between the dependent (choice of finance by farmers) and the independent variables (collateral and interest rates) at 5% confidence level. With a critical significance value set at 0.025 in a 2-tailed test, a calculated value below 0.025 implies a significant relationship.

**Collateral and Choice of Finance by Farmers**

Chi-square test on the data revealed a significant relationship between the choice of finance by farmers and the collaterals ($X^2 = 9.030; d.f=2; p=0.0109$) (Table 4.4).

**Table 4.4: Chi-Square Tests on Collateral and Choice of Finance by Farmers**

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>9.030</td>
<td>2</td>
<td>.0109</td>
</tr>
</tbody>
</table>
**Interest Rates and the Farmers’ Choice of Finance**

Chi-square test on this data showed a significant relationship between the choice of finance by farmers and the interest rates ($X^2 = 8.651; d.f=2; p=0.0132$) (Table 4.5).

**Table 4.5: Chi-Square Tests on Interest Rates and the Farmers’ Choice of Finance**

<table>
<thead>
<tr>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>8.651</td>
<td>2</td>
</tr>
</tbody>
</table>

**Regression Analysis**

A multiple regression analysis was undertaken to test the relationship between the collateral and interest rates and the choice of finance. The findings are summarized in subsequent sections.

**Table 4.6: Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.84</td>
<td>.5905</td>
<td>.572</td>
<td>0.1847</td>
</tr>
</tbody>
</table>

A regression analysis of data from this study revealed that 57.2% variation in the choice of finance by farmers is explained by collateral and interest rates (Table 4.6).

**Table 4.7: ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>18.414</td>
<td>2</td>
<td>9.207</td>
<td>41.779</td>
<td>.018</td>
</tr>
<tr>
<td>Residual</td>
<td>16.528</td>
<td>75</td>
<td>0.220</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>34.942</td>
<td>77</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ANOVA of the processed data indicates that the overall model was significant ($F=41.779; d.f=2; p=0.018$) and hence reliable in predicting the influence of collateral and interest rates on the choice of finance by farmers (Table 4.7).

**Table 4.8: Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.290</td>
<td>5.871</td>
<td>.731</td>
<td>.039</td>
</tr>
<tr>
<td>Collateral</td>
<td>1.941</td>
<td>3.103</td>
<td>.913</td>
<td>.626</td>
</tr>
<tr>
<td>Interest Rates</td>
<td>.042</td>
<td>.913</td>
<td>.021</td>
<td>.046</td>
</tr>
</tbody>
</table>

The established equation becomes:

\[ Y = 2.290 + 1.941X_1 + 0.042X_2 + \varepsilon \]

Where $X_1$ and $X_2$ represent the independent variables (collateral and interest rates) respectively and $Y$ is the choice of finance.
Holding all the independent variables constant, choice of finance would be at 2.290. A unit increase in collateral while holding other variables constant would increase the choice of finance by 1.941. A unit increase in interest rates holding other variables constant would increase the choice of finance by 0.042. There was a significant association between collateral, interest rates and choice of finance as the p values 0.001 and 0.015 are less than 0.05 at 5% level of significance (Table 4.8).

5.0 CONCLUSIONS AND RECOMMENDATIONS

The study established that farmers in Machakos County get loans through Farmer Self Help Groups, have savings which they use to guarantee loans in a Sacco, they can pledge valid title deeds as collateral for a loan in a bank and that the banks do not accept the use of rural land as collateral for loans. The study also established that most banks find the financing of agriculture as a very high-risk activity, they have sufficient assets to pledge as collateral in the loan application and they used their collateral to secure a loan from a financial institution. The study revealed that the farmers had a clear understanding of how credit facilities from financial institutions operate, the interest rate was a major determinant of their choice of finance, they are well informed of the financial services available in credit and the loan repayment periods for loans from banks were flexible. The study concludes that loans are charged relatively high interest rates by financial institutions in the area and in some cases inaccessible by farmers. Also, banks take into consideration the high transaction costs of small loans and may sometimes decline to provide farmers credit due to absence of collateral.

The study concludes that commercial banks rely on the financial statements of applicants, and strictly push for collateral for the loans given to farmers. Financial Institutions view farmers as profitable customers with high returns, however, the location of the banks within easy reach to facilitate borrowing by farmers were not a serious factor. High interest rates hamper on adoption of modern coffee farming in that the interest rates discourage the farmers from applying for the loans for fear of heavier obligations, especially during the low season when sales are low. The study recommends that farmers should form farmer self-help groups to increase their eligibility for loans from commercial banks. This is because farmer self-help groups can access savings and loans from commercial banks at better rates due to their associative size and members can guarantee each other for loan repayments.

The study also recommends that the financial institutions should revise their lending strategies to accommodate those with assets that are not documented but are credit-worthy. There is the need for financial institutions to continuously carry out market research to generate information that can inform on farmer characteristics and their preferred credit attributes.

The study recommends that the county government of Machakos particularly the Department of Public Service, Labour, ICT and Cooperative Development to assist the coffee farmers in developing more farmer self-help groups in Matungulu,
Kangundo and Kathiani sub-counties between January - March 2017. The county field officers in the respective departments should prepare a comprehensive plan on training the current and newly developed farmer self-help groups on practicing good governance and accounting. The county field officers should prepare an up to date database of names of farmer self-help groups formed, their monthly financial statements and names of the several officials as of the end of August 2017. Once the farmer self-help groups are recognized and approved by the county government as well governed and with credible financial statements, they will be eligible to apply for a loan from a financial institution at a lower interest rate. After that, the farmer self-help group can issue customized loans to individual coffee farmer registered within the group. This study recommends that further studies be undertaken on determinants of choice of finance by coffee farmers; the aim being to confirm the current results, and to determine their application in other localities.
REFERENCE


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