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**FACTORS INFLUENCING CREDIT ACCESS FOR FIRMS IN  
THE BIOGAS SUB SECTOR IN KENYA**

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## FACTORS INFLUENCING CREDIT ACCESS FOR FIRMS IN THE BIOGAS SUB SECTOR IN KENYA

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### Abstract

**Purpose:** The purpose of this study was to determine the factors influencing credit access for firms in the biogas sub sector in Kenya.

**Methodology:** The study adopted descriptive survey. The target population of the study was the firms in biogas sub sector in Kenya. A sample of 40 firms was selected from all the firms using the random sampling technique. Both qualitative and quantitative data was collected using a questionnaire that consisted of both open ended and close ended questions. Data was analyzed using Statistical Package for Social Sciences (SPSS) and results presented in frequency tables to show how the responses for the various questions posed to the respondents. The data was then analyzed in terms of descriptive statistics like frequencies, means and percentages.

**Results:** The study findings revealed that firms in biogas sub sector had low access to credit from the banks. It was also possible to conclude that age of firm, capital invested, size of the business, financial records, risk preference and access to information influence the level of access to credit by renewable energy sector firms.

**Policy recommendation:** It is recommended that micro financing institutions should regulate the products and services they offer to SMEs so as to have all clients enclosed in their loan portfolio. The study further recommends that banks should work hand in hand with the government to support upcoming businesses and offer financial support.

**Keywords:** *factors, credit access, firms in the biogas sub sector in Kenya*

### 1.0 Introduction

Biogas technology has been tried and supported through different initiatives in Kenya since 1946 when the first biogas was put up in Nyandarua sub-county financed among others by UNDP, GTZ/PSDA, DGIS (PID, 2009). Technology is defined as people using knowledge, tools, and systems to make their lives easier and better. Biogas technology is therefore, a complete system in itself; it includes cost effective production of energy and fertilizer for the soil. Biogas technology has been recommended as one of the most appropriate renewable energy technologies for rural areas in developing countries because of the many advantages. Biogas dissemination in developing world has been promoted by many governments and non-governmental organizations, but its adoption has been slow.

Biogas is produced by methanogenic bacteria acting on bio-digestible materials in absence of oxygen in the process known as anaerobic digestion. Anaerobic digestion is basically a simple process carried out in a number of steps that can use almost any organic material as a substrate. It occurs in digestive systems, in marshes, rubbish dumps and septic tanks (Harris, 2005). Biogas is mainly composed of 50 to 70 percent methane, 30 to 40 percent carbon dioxide and low amount of other gases like Hydrogen (5-10), Nitrogen (1-2), water vapor (0.3) and traces of hydrogen sulphide (FAO/CMS, 1996).

It takes 1–2 cows, 5–8 pigs, or 4 adult humans to supply adequate daily feed-stocks for a single-household bio-digester (Brown, 2006). The daily input of dung and urine from a single cow produces 1–2 kilowatt- hours of electricity or 8–9 kilowatt hours of heat. In most African applications, a household biogas installation provides sufficient energy for cooking and some lighting. Production of energy is influenced by factors such as microbes, plant design, construction materials, climate, chemical and microbial characteristics of inputs, and the inter-relationships among these factors (FAO/CMS, 1996).

Small and Medium Enterprises (SME's) are important for economic growth of a country, they are breeding grounds for entrepreneurship, innovations and inventions hence a reservoir for employment. Sustainable jobs create income which in turn reduces the level of poverty. Access to credit is a key constraint for SMEs in developing countries and there is need to develop credit access indicators from an individual firm borrower's point of view. Despite extensive economic and financial sector reforms over the last few decades, many SubSaharan African countries, including Kenya still face a severe financial development gap. This is not only relative to the advanced economies but also other peer developing economies as well. A key obstacle to financial development is access of the disadvantaged to credit, which would promote economic growth at the broadest scales.

World Bank report (2007), states that financial inclusion or broad access to financial services is defined as an absence of price or non price barriers in the use of financial services. It recognizes the fact that financial inclusion does not imply that all households and firms should be able to borrow unlimited amounts or transmit funds across the world for some fee. It makes the point that creditworthiness of the customer is critical in providing financial services.

The World Bank report (2007) also stresses the distinction between “access to’ and ‘use of’ financial services as it has implications for policy makers. ‘Access’ essentially refers to the supply of services, whereas use is determined by demand as well as supply. Among the non users of formal financial services a clear distinction needs to be made between voluntary and involuntary exclusion. The problem of financial inclusion addresses the ‘involuntarily excluded’ as they are the ones who, despite demanding financial services do not have access to them.

Access to finance is measured through statistics on number of deposit and loan accounts and the retail locations for banks. To measure credit access, the World Bank collected the first set of indicators of financial access through a survey of bank regulators in countries around the world in 2005 (Beck, Demirguc-Kunt, Martinez Peria, 2007) . The bank then updated these indicators for selected countries in 2008 (“Banking the Poor”, 2008) and rolled out an annual survey starting in 2009 under the name Financial Access implemented by Consultative Group to Assist the Poor (CGAP) with the first report published in October 2009. However, this statistics do not address access of finance by individual firm borrowers.

It is easy to understand how rapid credit access facilitates economic growth. When credit is expanding, consumers can borrow and spend more and businesses can borrow and invest more. Increasing consumption and investment creates jobs and expands income and profit. Moreover, the expansion of credit tends to cause the price of assets such as stocks and property to increase, thereby boosting the net worth of the public. Eventually, however, every credit-induced economic boom comes to an end when one or more important sectors of the economy become incapable of repaying the interest on its debt (Storey, D 2004).

While the success of microfinance institutions (MFIs), such as Grameen Bank, has captured the attention of many economists and policy makers, some MFIs are now beset by nonrepayment problems and high cost of financing. Meanwhile, most established commercial banks view the sectors targeted by MFIs as ‘unbankable.’ In fact, we are only beginning to understand the specific policies and institutions that best promote financial inclusion in environments endowed with asymmetric information, weak institutions and the absence of basic infrastructures necessary for banking (e.g., access to roads) (Chaia et al., 2011). Recent studies such as Honohan (2008) show that in the early 2000s, roughly 2.5 billion adults, or half of the world’s adult population, lacked any bank account; in Sub-Saharan Africa, the setting for our study, over eighty percent of the adult population lacked an account during that same period.

### **1.3 Research Objective**

To determine factors influencing credit access for firms in the biogas sub sector in Kenya.

## **2.0 LITERATURE REVIEW**

### **2.1 Theoretical review**

#### **2.1.1 Credit Rationing Theory**

An increasing body of analytical work has attempted to explain the functioning of credit markets using new theoretical developments. Challenging the paradigm of competitive equilibrium, they have explored the implications of incomplete markets and imperfect information for the functioning of credit markets in developing countries. These provide a new theoretical foundation for policy intervention. According to Stiglitz and Weiss (1981) interest rates charged by a credit institution are seen as having a dual role of sorting potential borrowers leading to adverse selection, and affecting the actions of borrowers leading to the incentive effect.

Interest rates thus affect the nature of the transaction and do not necessarily clear the market. Both effects are seen as a result of the imperfect information inherent in credit markets. Adverse selection occurs because lenders would like to identify the borrowers most likely to repay their loans since the banks’ expected returns depend on the probability of repayment. In an attempt to identify borrowers with high probability of repayment, banks are likely to use the interest rates that an individual is willing to pay as a screening device. However, borrowers willing to pay high interest rates may on average be worse risks; thus as the interest rate increases, the riskiness of those who borrow also increases, reducing the bank’s profitability. The incentive effect occurs because as the interest rate and other terms of the contract change, the behavior

of borrowers is likely to change since it affects the returns on their projects, Stiglitz and Weiss (1981).

Stiglitz and Weiss (1981) research shows that higher interest rates leads to firms undertaking projects with lower probability of success but higher payoffs when they succeed leading to the problem of moral hazard. Since the bank is not able to control all actions of borrowers due to imperfect and costly information, it will formulate the terms of the loan contract to induce borrowers to take actions in the interest of the bank and to attract low risk borrowers. The result is an equilibrium rate of interests at which the demand for credit exceeds the supply. Other terms of the contract, like the amount of the loan and the amount of collateral, will also affect the behavior of borrowers and their distribution, as well as the return to banks. Raising interest rates or collateral in the face of excess demand is not always profitable, and banks will deny loans to certain borrowers.

Bell (1990) demonstrates that incomplete information or imperfect contract enforcement generates the possibility of loan default and eventually problems of credit rationing. The result is loan supply and implicit credit demand functions, both of which are simultaneously determined. The role of risk in allocation of credit through its effect on transaction costs, therefore, becomes important in incomplete credit markets. Accordingly, where default risk exists, with an upward sloping supply curve, lenders offer borrowers only a choice of points on the supply curve, and borrowers are restricted to these points. It is impossible to identify the loan demand schedule using the observed loan amounts since these only reflect the existing supply.

The credit demand function can only be interpreted from the borrower's participation decision, i.e., the decision to borrow or not, and from which sector to borrow. Such a decision will depend on, among other things, the borrower's economic endowment and opportunities. The credit demand schedule identification problem therefore implies the existence of credit rationing (Elhiraika & Ahmed, 1998). The absence of supply for credit creates a lack of demand expressed in low revealed demand. Again, due to market failure in the credit market, the transaction cost involved in obtaining credit is considered greater than the utility, prompting entrepreneurs to switch profits between activities as a way of financing working capital. This also explains the existence of informal credit markets alongside formal credit institutions.

## **2.2 Empirical review**

### **2.2 Determinants of Access to Credit**

A study on the determinants of credit rationing among formal and informal lenders was conducted by Zeller (1994) in Madagascar. The regression results showed that the probability of applying for informal credit increases with age, years of education, and number of sick days of household during the recall period. On the other hand, the probability of being credit constrained by the informal lender increases with age, and years of education. The study also identified the leverage ratio of household as the most important determinant for loan rationing. Physical collateral plays a minor role in credit rationing.

Berger and Udell (2004) conducted a study on how SMEs can overcome growth constraints. The authors argued that the availability of external finance for small and medium enterprises

(SMEs) is a topic of significant research interest to academics and an issue of great importance to policy makers around the globe. However, Berger and Udell (2004) also asserted that a conceptual framework of factors affecting SME credit availability should focus on national financial institution structures and lending infrastructures and the way in which these elements of the financial system affect SME credit availability. By financial institution structure, the authors meant the market presence of different types of financial institutions that provide credit, as well as the competition among these institutions. By lending infrastructure, the authors meant the rules and conditions set up mostly by governments that affect financial institutions and their abilities to lend to different potential borrowers. The authors further argued that differences in the financial institution structure and lending infrastructure may significantly affect the availability of funds to SMEs by affecting the feasibility with which financial institutions may employ the different lending technologies in which they have comparative advantages to provide funds to different types of SMEs.

Kumar and Francisco (2005) conducted a study on enterprise size, financing patterns and credit constraints in Brazil. Looking at the ownership of the lending institution, it was found that public financial institutions are more likely to lend to large firms than to small firms.

Deakins et al (2008) indicated that supply side factors that affected access to finance included lack of business performance and credit worthiness information about the borrower, policy and practices of banks affected access to finance, banking structure (existence of subsidiaries for referral). Specific bank practices and policies include the 5 Cs of lending. The 5 Cs of lending include collateral, character, capacity, capital, conditions. The 5 Cs are most commonly used models by banks in evaluating lending propositions. The 5Cs model looks at a range of aspects associated with lending covering both the finance being sought as well as the characteristics of the borrower. Character stands for the characteristics of the borrower such as honesty and trustworthiness, Capacity considers ability to pay in terms of acquired skills and experience, Capital measures the net value of the entrepreneurs in terms of assets and liabilities, Collateral is the security required in lending which acts as a cushion against borrower's inability to repay the loan / credit. Conditions are those set by the bank such as turnovers levels and profitability, Purpose of loans which refers to the need for the requested amount, period of business operations, Amount which refers to adequacy of the credit, Repayment which refers to source and timing to repay back the credit (Binks, & Ennew, 1996).

Ugbomeh (2008) investigated determinants of loan repayment performance among women self-help groups in Bayelsa State, Nigeria. The estimated regression model indicated that women as household heads, interest rate, household size, price stability of farm proceeds, and commitment to self help groups significantly affected loan repayment of women farmers in the group. Oboh (2009) examined the socio-economic determinants of farmers' loan size in Benue State, Nigeria. The result shows that annual income, distance from the farmer's resident to credit source, farm size and previous loan status were significant factors that encouraged larger loan size to farmers.

Henri-Ukoha et al. (2011) studied determinants of loan acquisition from the financial institutions by small-scale farmers in Ohafia agricultural zone of Abia state, Southeast Nigeria. Factors that influenced the amount of loan disbursed by the financial institutions were age of the farmers, level of education, farming experience and farm size. Oboh and Kushwaha (2009) studied the effect of socio-economic and demographic factors on the rate of credit allocation to

the farm sector by arable crop farmers in Benue State, Nigeria. Empirical result reveals that factors that affect the rate of credit allocation to the farm in the study area were; age, education, farm size, household size, length of loan delay and visitation by lenders.

Lawal et al. (2009) found that a direct relationship exists between social capital and credit access, and that membership and cash contribution in the associations' by the farming households drives access to credit positively for productivity and welfare. According to development professionals, the lack of access to credit by poor rural households has negative effect on farm business expansion.

Akudugu (2012) estimated the determinants of credit demand by farmers and supply by Rural Banks in the Upper East Region of Ghana. Semi-structured questionnaire complemented by key informant interviews and focus group discussions were used in gathering data from 250 farmers in 5 districts of Upper East Region. The logit model was used to estimate the determinants of credit demand by farmers and the Tobit model used to estimate the determinants of credit supply by Rural Banks. The findings showed that age of farmers, gender and political affiliations among others were the main determinants of credit demand by farmers. Type of crop grown, farm size and the amount of savings made were some determinants of credit supply by the Rural Banks.

### 3.0 METHODOLOGY

The study adopted descriptive survey since it focused on more than one firm and it also focused on the status quo, in addition to describing the level of access by firms in renewable sector in Kenya. The target population of the study was the firms in biogas sub sector in Kenya. A sample of 40 firms was selected from all the firms using the random sampling technique. Both qualitative and quantitative data was collected using a questionnaire that consisted of both open ended and close ended questions. Data was analyzed using Statistical Package for Social Sciences (SPSS) and results presented in frequency tables to show how the responses for the various questions posed to the respondents. The data was then analyzed in terms of descriptive statistics like frequencies, means and percentages.

### 4.0 RESULTS FINDINGS

#### 4.1 Response Rate

**Table 1: Response Rate**

Response Rate	frequency	percent
Returned	40	83%
Unreturned	8	17%
Total	48	100%

Source: Authors Computation

## 4.2 Inferential Statistics

### 4.2.1 Bivariate Correlations

The study sought to establish the relationship between level of access and the independent variables (level of education, financial records, risk preference, age bracket, age of business, size of business and capital invested). First a correlation was done. Results are presented in Table 2 below.

**Table 2: Correlations between Factors Influencing Access to Credit**

		Level of Access information	Age of firm	Capital of firm	Number of Invested d	Financial employee s	Risk al Records	Access to preferenc e
Level of Access	Pearson	1	.754*	.752**	.703**	.638**	.658**	.760**
	n							
	Sig. (2-tailed)			.000	.000	.000	.000	.000
	N		40	40	40	40	40	40
Age of firm	Pearson		1	.754**	.672**	.815**	.578**	.768**
	Correlation							
	n							
	Sig. (2tailed)			.000	.000	.000	.000	.000
	N			40	40	40	40	40
Capital Invested	Pearson				1	.762**	.921**	.814**
	Correlation							
	n							

		.000	.000		.000	.000	.000	.000
	Sig. (2tailed)							
	N	40	40	40	40	40	40	40
Number of employees	Pearson Correlation	.703**	.815*	.762**	1	.711**	.930**	.773**
			*					
	Sig. (2tailed)	.000	.000	.000		.000	.000	.000
	N	40	40	40	40	40	40	40
Financial Records	Pearson Correlation	.638**	.578*	.921**	.711**	1	.772**	.925**
			*					
	Sig. (2tailed)	.000	.000	.000	.000		.000	.000
	N	40	40	40	40	40	40	40
Risk preference	Pearson Correlation	.658**	.768*	.814**	.930**	.772**	1	.825**
			*					
	Sig. (2tailed)	.000	.000	.000	.000	.000		.000
	N	40	40	40	40	40	40	40
Access to information	Pearson Correlation	.760**	.648*	.915**	.773**	.925**	.825**	1
			*					
	Sig. (2tailed)	.000	.000	.000	.000	.000	.000	

N 40 40 40 40 40 40 40

\*\*. Correlation is significant at the 0.01 level (2-tailed).

Source: Authors Computation

Results on Table 2 show that level of access was positively correlated with all the independent variables. This reveals that any positive change in age of firm, capital invested size of the business, financial records, risk preference and access to information led to improved level of access to loans. The bivariate correlation reveals a high and positive correlation between level of access and all the predictors' variables. This shows that a unit that in any of the predictor variable caused a significant change in the level of access.

#### 4.2.2 Regression Analysis

In order to establish the statistical significance of the independent variables on the dependent variable (level of access) regression analysis was employed. The regression equation took the following form.

Credit access = 0.929 + 0.695 Age of firm + 0.897 Capital Invested + 1.949 Number of Employees + 1.328 Financial Records + 2.269 Risk Preference+ 1.014 Access to Information  
Table 3 shows that the coefficient of determination also called the R square is 85%. This means that the combined effect of the predictor variables (age of firm, capital invested, size of the business, financial records, risk preference and access to information) explains 85% of the variations in level of access in renewable sector. The correlation coefficient of 92% indicates that the combined effect of the predictor variables have a strong and positive correlation with level of access. This also meant that a change in the drivers of level of access has a strong and a positive effect on access level.

**Table 3: Regression Model Fitness**

Indicator	Coefficient
R	0.9190
R Square	0.8450
Std. Error of the Estimate	0.4530

Source: Authors Computation

Analysis of variance (ANOVA) on Table 4 shows that the combined effect of age of firm, capital invested, size of the business, financial records, risk preference and access to information was statistically significant in explaining changes in level of access to credit. This is demonstrated by a p value of 0.000 which is less than that of the acceptance critical value of 0.05.

*Table 4: Analysis of Variance (ANOVA)*

Indicator	Sum of Squares	df	Mean Square	F	P value
Regression	36.78	6	6.13	29.876	0.000
Residual	6.771	33	0.205		
Total	43.551	39			

Source: Authors Computation

Table 5 displays the regression coefficients of the independent variables. The results reveal that age of firm, capital invested, size of the business, financial records, risk preference and access to information are statistically significant in explaining the level of access to credit. This shows that all the predictor variables of the study are important in explaining or predicting the level of access to credit in Kenya.

**Table 5: Relationship between Access to Credit and its Determinants**

Variable	Beta	Std. Error	t	P value
(Constant)	0.929	0.343	-2.707	0.011
Age of firm	0.695	0.204	3.403	0.002
Capital Invested	0.897	0.343	2.618	0.013
Number of employees	1.949	0.478	4.077	0.000
Financial Records	1.328	0.454	-2.927	0.006
Risk preference	2.269	0.483	-4.701	0.000
Access to information	1.014	0.269	3.773	0.001

Source: Authors Computation

#### 4.4 Discussion

Results in table 5 revealed that the relationship between level of access and age of firm was positive and significant ( $b_1=0.695$ ,  $p$  value, 0.002). This is because the probability value was less than 0.005. This implied that older firms were more likely to access credit compared to younger firms. The descriptive statistics reported that majority of the businesses were young and these may explain the low credit access also noted in the study. The findings agree with those in Pandula, (2011) who argued that the period a business has been in existence plays a major role in determining its accessibility to credit. Therefore in the banks checklist for assessing eligibility for a credit facility it states the business must have been in operation for at least two years. This therefore implies that those enterprises that are less than two years old in the market cannot access credit in an institution such as a bank.

The relationship between level of access and capital invested was positive and significant ( $b_1=0.897$ ,  $p$  value, 0.013). The relationship between level of access and access to information was positive but insignificant ( $b_1=1.014$ ,  $p$  value, 0.001). The findings agree with those in Deakins et al (2008) who indicated that supply side factors that affected access to finance included lack of business performance and credit worthiness information about the borrower, policy and practices of banks affected access to finance, banking structure

The relationship between level of access and size of business was positive and significant ( $b_1=1.949$ ,  $p$  value, 0.000). This implied that larger businesses in size were more likely to access credit compared to small business in size. The small size of business reported in descriptive statistics may explain the low credit access noted in the study. The findings agree with those in Kumar and Francisco (2005) who asserted that size strongly affects access to credit, compared to performance as well as other variables, suggesting quantitative limitations to credit access hence looking at short-versus long-term loans, the impact of size on access to credit was greater for longer-terms loans.

The relationship between level of access and risk preference was positive and significant ( $b_1=2.269$ ,  $p$  value, 0.000). This implied that less risk averse firms were more likely to access credit compared to more risk averse firms. The descriptive statistics reported that majority of the respondents were not comfortable and moderately comfortable and these may explain the low credit access also noted in the study. The findings agree with those in (Fletschner *et al.*, 2010; Croson and Gneezy, 2008, and; Browne, 2006) who asserted studies in psychology and economics found that, on average, women tend to be more averse to risk than men and that, other things equal, women are more likely to forego activities that offer higher returns if these opportunities require them to bear too much risk. Liu, 2008; Dercon, 2006; Boucher *et al.*, 2008, and; Fletschner *et al.*, (2009) further argued that producers who are more risk averse are less likely to adopt new technologies, to undertake projects that are expected to offer higher profits but expose them to more risk, or to apply for loans that may cause them to lose the collateral they own. In other words, compared with men, and without adequate insurance, women are more likely to consider borrowing against collateral as a risky transaction and might be less interested in taking out loans even when credit is available to them. The finding that women are, on average, more risk averse than men suggests that women will have a stronger preference for financial products tailored to help them save in a secure environment, insure

against risks or borrow without risking losing their assets according to (Liu, 2008; Dercon, 2006; Boucher *et al.*, 2008, and; Fletschner *et al.*, 2009).

The relationship between level of access and financial records was positive and significant ( $b_1=1.328$ ,  $p$  value, 0.006). This implied that businesses with financial records were more likely to access credit compared to businesses with financial records. The descriptive statistics reported that majority of the respondents had no financial records and this may explain the low credit access also noted in the study. The findings agree with those in Pandula (2011) who noted that when the company is smaller, the restrictions on credit are greater. The author demonstrated that small firms usually do not have audited financial reports, are owned and operated by the entrepreneur himself and there is no such legal requirement to regularly report financial information and in addition smaller firms have less assets to offer as collateral as compared to larger firms.

## 5.0 SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Summary of Findings

The study findings showed that 50% of the respondents indicated the nature of business firms was Biogas construction and appliances. A majority 50% of the respondents were in partnership, results revealed that majority 65% of the respondents had been in the business for a period of between 1 to 3 years while 22% indicated that they had been in the business for a period of less than one year and majority 68% of the respondents had reached university. These results imply that the respondents had high academic qualifications and therefore understood the issues in question very well. A majority (77.5%) of the respondents was in senior management level and 60% of the respondents indicated they had invested less than 25,000 shillings, while 43% of the respondents indicated they had 6 to 10 employees.

The findings also revealed that majority 60% of the respondents did not have financial records, 45% of the respondents were not comfortable at all, and 60% of the respondents indicated had low access to information. More so, results revealed that majority 63% of the respondents disagreed with the statement the firm was always willing to approach a bank for financing, 66% disagreed with the statement that firms find bank procedures credit application to be simple and flexible, while 73% disagreed with the statement their application for finance rarely gets rejected, and 78% disagreed with the statement that their firms are always awarded a bank loan which is adequate for my business requirements, Finally, 70% of the respondents disagreed with the statement that their firms have a good perception of banks as a source of finance for my business venture. The mean score for this section is 2.34 indicating that majority of the respondents disagreed with the statements on level of access to loans.

Results indicate that demographic factors such as age of firm, capital invested, size of the business, financial records, risk preference and access to information are a significant determinant of level of access to credit. Regression analysis was conducted to empirically determine whether demographic factors were a significant determinant of level of access to credit and the results support this finding. Correlation results showed that level of access was positively correlated with all the independent variables. This reveals that any positive change in age of firm, capital invested size of the business, financial records, risk preference and access

to information led to improved level of access to loans. The bivariate correlation reveals a high and positive correlation between level of access and all the predictors' variables.

Regression results indicated that the coefficient of determination also called the R square is 84.5%. This means that the combined effect of the predictor variables (age of firm, capital invested, size of the business, financial records, risk preference and access to information) explains 84.5% of the variations in level of access in renewable sector. Analysis of variance (ANOVA) results showed that the combined effect of age of firm, capital invested, size of the business, financial records, risk preference and access to information was statistically significant in explaining changes in level of access to credit. This is demonstrated by a p value of 0.000 which is less than the acceptance critical value of 0.05. Regression coefficients results reveal that age of firm, capital invested, size of the business, financial records, risk preference and access to information are positive and statistically significant in explaining the level of access to credit. This shows that all the predictor variables of the study are important in explaining or predicting the level of access to credit in Kenya

## **5.2 Conclusion**

Following the study findings it is possible to conclude that SMEs had low access to credit from the banks. It was possible to conclude that financing biogas sector in Kenya has been inadequate. Micro finance institutions do not have a biogas specific credit product though they have general development product which could be used for biogas construction but their terms may not be conducive to biogas clients. It was also possible to conclude that age of firm, capital invested, size of the business, financial records, risk preference and access to information influence the level of access to credit by the renewable sector (SMEs).

## **5.3 Recommendations of the Study**

Following the study conclusions, it is recommended that micro financing institutions should regulate the products and services they offer to SMEs so as to have all clients enclosed in their loan portfolio. The study further recommends that banks should work hand in hand with the government to support upcoming businesses and offer financial support.

## **5.4 Recommendations for Further Research**

The study recommends further studies on the access of informal credit by SMEs. Such study should focus on the factors that influence the access of small firms from microfinance institutions, merry go rounds and SACCOs. Future studies should also focus on the financial management practices of small firms. This is because the proper working capital management may influence the growth, profitability and the consequent ability to access finance from all sources.

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