

Determinants Of Credit Accessibility in the Informal Sector: The Case of Smallholder Businesses in Migori County, Kenya

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ARTICLE INFO

Article history:

Received Date: 14th
Oct 2025

Revised Date: 27th
Oct 2025

Accepted Date: 3rd
Nov 2025

Keywords:

Credit access,
informal sector, socio-
economic factors,
institutional factors,
logistic regression.

The informal sector, estimated to constitute 98% of businesses in Kenya, represents 83% of total employment and created 768,000 new jobs which represent 90.7% of total new jobs created in 2019 alone. Despite the critical role played by the sector in job creation and employment, it is faced with numerous challenges and constraints one of them being access to credit. Access to credit does not only have adverse effects on the informal smallholder businesses alone but on the entire economy. The study seeks to analyze the determinants of Socio-Economic and the Institutional factors on credit accessibility in the informal sector for the smallholder businesses in Migori County. The study employed descriptive survey research design. Targeting 4,756 traders in total, a three-stage stratified random sampling method was employed to select the smallholder traders in the study area represented by a sample size of 476 businesspersons. Structured questionnaires and interview schedules were developed, pre-tested and used for collecting quantitative data for the study. Piloting of the study was carried out to ascertain the validity and reliability of the data collection instrument. The targeted sample smallholder businesspersons successfully interviewed were 446 in total, representing a response rate of 93.70%. Descriptive statistics and the logistic regression model were used in analyzing quantitative data. The output from the study model indicates that 245(54.9%) of the sampled businesspersons were credit users whereas the remaining 201(45.1%) were non-credit users. Experience in credit use, one of the socio-economic factors expected to influence credit accessibility was statistically significant and positively related to credit access at 1% probability (.335, $p = .001$), in line with the prior research expectations. Even though positively related and consistent with the a priori expectation, the contribution of the propensity to take risks (attitude towards risk) by the smallholder businesspersons was insignificant (.515, $p = .743$) at 5%. However, all the institutional factors were found to be statistically insignificant and negatively related to credit accessibility. Even though consistent with the a priori expectation, the contribution of distance from credit source in the prediction of the model was insignificant at 5% (-.034, $p = 0.215$). Membership by the smallholder businesspersons to multi-purpose cooperatives and or business associations was negatively and insignificantly related to credit access by the same group in the study area, contradicting the a priori expectation (-.274, $p = .529$). The outcome of the study would be useful to policy makers, Micro-Financial Institutions, academicians and future researchers in identifying innovative options and institutional arrangements that would serve as an input for formulating credit policy and advancing arguments in future research. The study concludes that a large number of the informal sector smallholder businesspersons have never accessed credit which implies a very huge potential demand for credit.

INTRODUCTION

Background of the Study Amongst practitioners, that is, the actual people working in the informal sector, the term *Jua kali* is popularly used to describe the sector (Ngui et al, 2014). *Jua kali* is a *Kiswahili* term which literally means “fierce sun”. The name stems from the fact that the workers in the informal sector work under the hot sun heating on their heads and backs, while working on metal, wood or selling wares on the streets (Amenya, 2007). The sector refers to those activities conducted in open sites in which people work wholly exposed to harsh environmental hazards like heat from the sun, rain and dust. The term continues to be used up to now even for activities carried in permanent structures (Ngui et al, 2014). Such activities associated with the informal sector include, among others, selling fruits and vegetables, food operation, sale and processing, selling clothes and shoes (both second-hand and new), kiosks selling various items, water kiosks, small retailers or hawkers who sell cereals, home suppliers, fuels and other goods, small manufacturing, production, construction and repair of goods (World Bank, 2006).

The informal sector includes three groups of active participants namely the survivalists, self-employed, and micro-enterprises. Survivalists are very poor people who generally work in this sector for the purpose of generating an income for survival. Self-employed people produce goods for sale, purchase goods for resale, or offer services. Micro-enterprises are very small businesses that usually operate from a fixed location with regular hours (Abdel, 2005). Other names used for the informal sector include Micro Enterprises which refers to enterprises with 10 workers and below, Small-Scale Enterprises (SSEs), which include all firms with 50 workers and below, Medium Enterprises which refers to enterprises employing 50-99 workers and Large Enterprises, which refers to enterprises employing 100 and above workers (Ngui et al, 2014).

With the shrinking job creation in the formal establishments, majority of the youth who exit from learning institutions and individuals who leave formal employment easily join the informal sector. According to the Economic Survey 2020 by the Kenya National Bureau of Statistics (KNBS), the informal sector represents an important part of the economy and plays a major role in employment creation, production and income generation as well as poverty alleviation (KNBS, 2020). For instance, the total employment stood at 18.1 million persons in 2019 up from 17.3 million in 2018. While a total of 79,000 jobs were created in the modern sector, the informal sector created 768,000 new jobs, which constituted 90.7 per cent of total new jobs created outside small-scale agriculture. It is estimated that, as of 2019, the informal sector represents 83% of total employment (see Table 1).

Table 1 Total Estimated Employment by Sector, 2015 - 2019

	2015	2016	2017	2018	2019*
Formal Establishments	‘000	‘000	‘000	‘000	‘000
Wage Employees	2,598.5	2,683.1	2,792.5	2,859.9	2,928.3
Self-employed and unpaid family workers	123.2	132.5	139.4	152.2	162.7
Sub-Total	2,721.7	2,815.6	2,931.9	3,012.1	3,091.1
Informal Sector¹	12,036.8	12,749.9	13,539.6	14,283.6	15,051.6
Total	14,758.5	15,565.5	16,471.5	17,295.7	18,142.7

* Provisional

¹ Estimated

Source: Kenya National Bureau of Statistics (2020)

According to IFC, 2012 (as cited in Farazi, 2014), around 80% of total Micro, Small and Medium-sized Enterprises (MSMEs) in developing countries are in the informal sector. The 2016 National Micro, Small and Medium Establishment (MSME) survey establishes that there are 1.56 million licensed and 5.85 million unlicensed MSMEs in Kenya (KNBS, 2016). From the survey, the unlicensed MSMEs account for more than 78% of all businesses. Currently, the informal sector is estimated to constitute 98% of businesses and contributing a paltry 3% of Kenya's GDP (Rotich, 2022).

Though the smallholder businesses in the informal sector have continued to contribute immensely to the growth of the Kenyan economy, today they face myriad problems that make them to remain uncompetitive in the national, regional and global market including, but not limited to access to markets, limited access to financial services most importantly the investment and operational cash, inadequate skills and technology, limited infrastructure, inadequate business skills, standardization and lack of appropriate relevant and useful business information. According to the Daily Nation 2011 September 14th Launch of the SME Handbook pages 42-43, most small businesses use low level technology and crude production techniques which make them unproductive and uncompetitive (Omondi, 2011).

Despite the critical role played by the smallholder businesses in the informal sector, they are faced with numerous challenges and constraints that include unfavorable policy, access to financial services and markets, inadequate business know-how and linkages with large enterprises, gender inequality, job quality deficits, limited access to information, impact of HIV/AIDS pandemic, unsatisfactory occupational health and safety standards (Ngima, 2014). Available literature argues that poor access to credit has been identified as one of the challenges facing micro and small business activities in the informal sector (World Bank 2010). This lack of credit causes the business persons to lose opportunities as they are bypassed by programs and policies that are meant to benefit them. Further, this challenge extends to those small businesspeople lacking information on how to run their businesses which is the bane of many businesses (Aremu and Adeyemi, 2011 as cited in Ochido, 2016).

The numbers of micro-lending institutions have steadily increased over the last decade in Africa, and particularly in Kenya. Migori County, like other parts of the country, has also witnessed this increase in the number of micro-lending institutions over the past decade. This sharp increase could be attributed to the kind of occupation dominating the area, especially farming and small scale businesses. People working in these informal sectors are low income earners who do not qualify for credit facilities from the financial institutions (Omondi & Ogaga, 2015).

Migori County is the home of the giant Sony Sugar Company which manufactures sugar and also an area associated with the mineral gold deposits. It has also witnessed the influx of NGOs that work hand in hand with the locals to alleviate poverty and education as a result of the aids scourge. With the high population, agriculture, mineral deposits and influx of NGOs, there has been demand for smallholder businesses to tap the capital provided by the NGOs, cash from farming and mineral deposits to provide the necessary services and commodities for the high population (Oyoo, 2016).

The Migori County Trade Development Credit Scheme Act, 2016 of the County Assembly establishes a trade development credit scheme to provide access to affordable credit to start-ups, micro, small and medium enterprises, and agribusinesses to promote trade development and economic growth of the people of Migori and for related purposes (Republic of Kenya,

2016). The second Migori County Integrated Development Plan (CIDP II) for the period 2018-2022 identifies key policy actions, reforms, programmes, and projects that the Migori County government in collaboration with the national government and other partners shall implement in line with its priorities, Kenya 2010 Constitution and the long-term objective of Vision 2030 in its aspiration to become a vibrant and prosperous county. The CIDP II is anchored on the Kenya Vision 2030, SDGs, MTP III and the President's "Big Four" Agenda, and gives priority to infrastructural expansion, food security, socio-economic transformation and good governance. On socio-economic transformation pillar, the Plan seeks to provide empowerment to women and PWDs, to facilitate trade, investment and fair trade practices, and to develop a vibrant and a self-sustaining cooperative movement among other programme and sub-programme objectives (County Government of Migori, 2018).

Despite the influx of micro-lending financial institutions and NGOs in Migori County, an established trade development credit scheme and an operational development plan, the Gender Inequality Index (GII) for Migori County is 0.69 against the Country's 0.65. This shows a negative trend. In Migori County, less than 40% of the women groups are involved in productive businesses while the implementation of the Gender Policy stands at below 10%, same as the adoption by the various sectors on gender mainstreaming. The financially and economically empowered population increases by less than 50% while the number of medium, small and micro enterprises increases by less than 60%. Trade infrastructure increases by less than 40%. The number of stable and performing societies increases by less than 10% while the number of legally compliant societies increases by less than 20% (County Government of Migori, 2018).

According to the international statistical standards adopted by the 15th International Conference of Labour Statisticians (ICLS), the informal sector consists of a subset of unincorporated enterprises (i.e. not constituted as separate legal entities independent of their owners) that are also not registered with a national government authority. Most informal enterprises are single-person operations or family firms/farms; very few are owned or operated by employers with hired workers. Typically, they operate at a low level of organization, on a small scale and with little or no division between labour and capital as factors of production (Bonnet et al, 2019). Small businesses in most cases do not hire many people and are either run by the owners or the managers and the performance of the business heavily rely on the ability of the people running the business (Nofsinger and Wang, 2011 as cited in Ochido, 2016). According to Zeller, 1994 (as cited in Sisay, 2008), when taking credit as a decision making process, then it starts with the decision if the individual to apply for credit. In fact, the demand for credit depends on the self-financing potential, access to credit facilities and risk taking ability of the borrowers (Sisay 2008). Demand is therefore an important factor in determining access to credit by the smallholder businesses in Migori County. Entrepreneur characteristics such as level of education and individual experience are considered to be strong determinants of accessibility to credit (Ochido, 2016). The determinants of credit accessibility by the smallholder businesses are broadly categorized into socio-economic and institutional factors.

Mounting evidence indicate that socio-economic factors (attitude towards risk and experience in credit use) determine access to credit by smallholder businesspersons. A study based in South Africa (Chauke et al, 2013) opines that the attitude of smallholder farmers towards risk contributes significantly to their access to credit. In Ethiopia, Fikadu (2016) finds the risk taking propensity to be a significant variable in determining credit access while another study (Sisay, 2008) finds contradicting results. In Ghana, Alhassan & Sakara (2014); Mahmood et al (2014) find both experience in credit use and attitude towards risk significant factors in

explaining access to credit. In Kenya (Atieno 2001; Kosgei, 2015) indicate that experience in credit use (past credit participation) significantly explained credit accessibility by the small scale entrepreneurs. Yet, another study in Ethiopia (Sisay, 2008) confirms the same view that experience in credit use significantly influence credit accessibility.

Extant literature associate institutional factors (distance from lending institutions and membership to cooperatives/business associations) do have significant effects on credit accessibility by the smallholder businesses. According to Efa & Ndinda (2017), studies conducted in Nigeria (Oni et al, 2005; Akpanet et al, 2013), Ghana (Akudugu, 2012), Pakistan (Khan & Hussain, 2011) and China (Bing et al, 2008) report a negative and significant relationship between distance to the lending agency and credit access. In South Africa, Chauke et al (2013) reveals that the distance from credit source significantly affect access to credit. On the local scene, Atieno (2011); Kosgei (2015); Kiplimo et al (2015) find a significant association between distance and credit access. Sisay (2008); Musah et al (2016); Buyinza et al (2018); Silong & Gadanakis (2020) in Ethiopia, Ghana, Uganda and Nigeria respectively observe that membership to cooperatives/business association was a significant factor in explaining access to credit while another study in Benin (Assogba et al, 2017) finds contradicting results.

Statement of the problem

Although studies increasingly focus on the informal sector, the sector's extent of credit accessibility has not been well documented in Kenya. Little information currently exists on informal sector credit access, the use to which the available credit can be maximally utilized and how policy can effectively influence the informal sector outcomes for the smallholder businesses in Kenya. It is acknowledged that the informal sector plays a key role in generating a pattern of economic growth that is generally labour-intensive, pro-entrepreneurship and competitive especially among the smallholder businesses. In Kenya, this is illustrated by the number of persons employed by the sector growing at an annual average rate in excess of 750,000 for the period 2015-2019 compared to the less than 10,000 annual employment growth for the formal establishments in the same period. It is notable that the smallholder businesses in the informal sector account for a significant proportion of firms and employment in Kenya, yet they contribute very little to the country's GDP. This is partly due to the financial constraints they encounter. As observed, there are many studies that have been conducted on determinants of credit accessibility by the smallholder businesses but these studies are wide and varied from region to region. This presents a difficulty in establishing a clear distinction between variables that influence credit in different regions and also points on the thinness of such studies. These studies do not offer conclusive results of how the various socio-economic and institutional factors determine access to credit by the smallholder businesses generally in Kenya and specifically in Migori County. In addition, the aforementioned contradictions and various inconsistencies in the literature indicate that it is quite important to thoroughly investigate determinants of access to credit in the study area. This calls for context specific investigations across various cultural groups and or communities. On the account of this background, the study seeks to fill the information gap on the determinants of credit accessibility in the informal sector for the smallholder businesses of Migori County, Kenya.

Research Objectives

The broad objective of the study was to analyze the determinants of credit accessibility in the informal sector for the smallholder businesses of Migori County, Kenya.

The specific objectives of the study were to:

1. Determine the Socio-Economic factors that influence credit accessibility.

2. Assess the effect of Institutional factors on credit accessibility by the smallholder businesses in the study area.

Research Hypotheses

The following hypotheses were tested during this study:

1. $H_0: \mu_i = 0$ where $i = 1, 2$.

$$H_1: \mu_i \neq 0$$

μ_i represents the socio-economic parameters namely Attitude of Smallholder Businesspersons towards Risks and Experience in Credit Use.

2. $H_0: \Omega_i = 0$ where $i = 1, 2$.

$$H_1: \Omega_i \neq 0$$

Ω_i represents the institutional parameters namely Distance from Lending Institutions and Membership to Business Cooperatives/Associations.

2.0 LITERATURE REVIEW

This chapter presents a review of theoretical and empirical frameworks that guides the study. Specifically, it is devoted to presentation of the theoretical literature review and also examines some empirical studies which have been done in and outside Kenya's economy.

Theoretical Literature Review

This study situates its arguments on Information Asymmetry Theory and the Theory of Equilibrium Credit Rationing.

Information Asymmetry Theory

Joseph Stiglitz, 1961, George Akerlof, 1970 and Michael Spence, 1973 (as cited in Matagu, 2018), are the three proponent economists who developed the theory of asymmetric information which was formalized in 2001. Information asymmetry theory assumes that at least one party to a transaction has relevant information whereas the other(s) do not (Nderi & Muturi 2015). In perfect markets settings, with perfect and costless information available to both transacting parties, and no uncertainties regarding present and future trading conditions, the transacting parties do not suffer from market failure of information. However, information in the real world is neither perfect nor costless, and additionally small businesses finance market is characterized by risk and uncertainty regarding future conditions.

Information is distributed asymmetrically between the lender and borrower (Matagu, 2018). Spence & Stiglitz, 2001 (as cited in Nderi & Muturi, 2015) demonstrated that a market may break down completely in the presence of asymmetric information and the three distinct consequences emerge namely: adverse selection, moral hazard, & monitoring cost. From the lenders perspective, it has incomplete information with regard to underlying quality of the project and the management of small firms, giving rise to the problem of adverse selection (Stiglitz and Weiss, 1981 as cited in Matagu, 2018). Furthermore, the management of small firms may fail to perform to their full capabilities, giving rise to the problem of moral hazard. Moral hazard, a consequence of asymmetric information, arises because it is too costly for lenders especially banks to effectively monitor small firms' projects, thereby resulting in equilibrium credit rationing and a shortfall in finance provision (Bester, 1987 as cited in Matagu, 2018). The general problem of information asymmetry can manifest itself in one of three ways namely: acceptance of the loan application but at a higher than risk-adjusted interest rate; acceptance but with strict collateral requirements; or outright rejection of the loan application (Matagu, 2018). The existence of asymmetric information provides a rationale for concluding that MSEs are limited in their access to credit.

Theory of Equilibrium Credit Rationing

One of the most important theories that focused on financing gap analysis is the Theory of Equilibrium Credit Rationing by Hodgeman, 1960 (as cited in Mutinda et al, 2019). Hodgeman developed the theory based on default risk and defines credit rationing as a situation where all or some loan applicants are not awarded the entire loan amount they applied for at a prevailing interest rate (Mutinda et al 2019). In this model, lenders evaluate potential borrowers on the basis of the loan's expected return-expected loss ratio. In addition, it is assumed that there is a maximum repayment that the borrower can credibly promise, which effectively limits how much the lender will offer the borrower regardless of the interest rate. In this case the expected losses become too great relative to the expected return. In addition, the theory is of the view that lenders do not provide all the loans that borrowers wish to obtain because they cannot distinguish between safe and risky borrowers. It also assumes imperfect credit markets due to information asymmetry, which lenders attempt to solve by imposing interest rate and collateral. Further, it assumes that demand for commercial bank loans exceeds their supply at the prevailing interest rate and that borrowers need to provide equal amount of collateral. He observed that whenever a borrower's demand curve intersects with a vertical portion of the relevant supply curve, the particular borrower will be unable to obtain additional borrowed funds by promising to pay additional interest. Furthermore as the supply curve shifts to the left and upward, the borrower will encounter more stringent restrictions on the supply of funds which he will be unable to overcome by offering to pay more interest. However, Hodgeman observed that another borrower with a good credit rating may continue to borrow as much as he wishes and may not be required to pay much additional interest to meet the qualifications imposed by the lender. The theory is important to this study because financial institutions normally classify MSEs as high risk borrowers thus leading to some obtaining credit while others are rationed or denied.

Empirical literature review

According to Coughlan et al (2013), the purpose of empirical literature review is to summarize and synthesize all previous studies that relate or argue positively with the study's hypotheses. Cronin et al (2008) opine that empirical literature review should offer a concise summary of findings describing current knowledge and offering a rationale for conducting further research. They further indicate that any knowledge gaps that have been identified should lead logically to the purpose of the study. Several factors determine credit accessibility by the smallholder businesspersons. These factors can be categorized as the socio-economic and institutional factors. The more favorable they are, the greater the chances of accessing the credit with ease.

Socio-Economic Factors and Access to Credit

A study by Sisay (2008) on the determinants of smallholder farmers' access to formal credit in Metema Woreda, North Gondar, Ethiopia reveals the farmers' perceptions of the strengths and weaknesses of formal financial institutions, the status of women and different wealth groups' access to formal and informal credit, and, by use of the logit model, identifies the most important factors that affect smallholder farmers' access to formal credit. The study notes that the maximum likelihood estimates of the logistic regression indicates that smallholder farmers' experience in credit use from formal sources and membership of farmers' cooperatives were important factors influencing smallholder farmers' access to formal credit in the study area. The other variables of the study such as age, sex, education level, extension contact, attitude towards risk, distance from lending institutions, repayment period and time, lending procedures and family labour working in the farm were less powerful in explaining smallholder farmers'

access to formal credit indicating that both users and non-users of credit were homogeneous with regard to these variables. The study however focuses on smallholder farmers in Metema Woreda, North Gondar, Ethiopia which is purely an agricultural zone with majority household heads involved in agriculture out of which 63.4% and 36.6% are male and female headed households respectively. Besides, the smallholder farmers exhibited a quite homogeneous gender composition (50.5% are males and 49.5% are females). The current study focusses on smallholder businesspersons of Migori County who are heterogeneous with regard to the Demographic factors (age, sex and educational level).

Alhassan & Sakara (2014) examines the socio-economic determinants of Small and Medium Enterprises' access to credit from the Barclays Bank in Tamale, Ghana. The population for the study was members of the Association of Small Scale Industries (ASSI), the branch Manager and credit officer of the Barclays Bank Tamale, the Regional Manager and Accountant of National Board for Small Scale Industries and a Project Officer of Macrofinance and Small Loan Centre (MASLOC). The results indicated that the number of employees, experience in credit use, number of fixed assets possessed, attitude towards risk, business size, and form and sector of business in the economy are the critical success factors in accessing bank finance by the Small and Medium Enterprises in the study area.

Mahammood et al (2014) analyses Micro and Small Enterprises' access to credit from the Barclays Bank in Tamale, Northern Ghana. Proportional stratified and simple random sampling was used to select a sample of 250 respondents for the study. Both qualitative and quantitative techniques were used to analyse the data. The study revealed that the number of employees of a business, experience in credit use and number of fixed assets possessed, attitude towards risk, business size and new or existing business were considered as key determinants for credit by MSEs.

Fikadu (2016) assesses determinants of access to credit and credit source choice by SME entrepreneurs in Nekemte, Ethiopia by using structured questionnaire from 173 entrepreneurs. The study shows that the major source of finance for SME is own source finance. The results of binary logistic regression reveals that there is statistically significant relationship between firms' access to credit and risk taking propensity of the firm head.

Institutional Factors and Access to Credit

Kosgei (2015) presents the factors affecting access to credit by the small business producer groups in Trans-Nzoia County. The study uses cross sectional design while data was collected through in-depth personal interviews administered through open-ended interview guides from which content analysis was used to analyze the data collected. The research finds that access to credit was influenced by lender-borrower distance, distance to credit sources, past credit participation.

Atieno (2001) presents an empirical assessment of the formal and informal financial institutions' lending policies and access to credit by small-scale enterprises in Western Kenya. The study carried out during July and August 1998 in the market centres in the rural areas of five Districts of Western Kenya namely Kisumu, Siaya, Vihiga Bungoma and Kakamega focusses on small-scale enterprises engaged in farming, wholesale and retail trade, and primary processing of agricultural products. The study finds that the small-scale entrepreneurs who did not seek credit because they had relatively higher wealth values might have not necessarily meant that they did not need credit but rather that the type of loans they required did not exist, an implication that the credit market does not serve the needs of enterprises seeking to expand their businesses. The end result therefore is a credit gap capturing those enterprises too big for the informal market, but not served by the formal market. The study further notes that the large

number of potential borrowers who did not seek credit does not mean that they did not need credit because only 15% of the sample were found not to be credit constrained, a suggestion that the lack of supply creates a lack of demand displayed in the low revealed demand. The study indicates that the distance to credit sources and past credit participation were significant variables that explain the participation in credit markets by the small-scale entrepreneurs in Western Kenya. However this work is criticized on the use of Analysis of Variance (ANOVA). ANOVAs overproportions can lead to hard-to-interpret results because confidence intervals can extend beyond the interpretable values between 0 and 1, rendering an interpretation of the outcome variable as a proportion of correct answers impossible (proportions above 1 are not defined). One way to think about the problem of interpretability is that ANOVAs attribute probability mass to events that can never occur, thereby likely underestimating the probability mass over events that actually can occur. This intuition points at the most crucial problem with ANOVAs overproportions of categorical outcomes which easily leads to spurious results.

Assogba et al (2017) analyses the determinants of credit access by smallholder farmers in North-East Benin. The study utilizes the logit regression analysis which reveals that access to credit among smallholder farmers is determined by membership to an association or group.

Buyinza et al (2018) examines the factors affecting access to formal credit by Micro and Small Enterprises in Uganda. The research analyzes the data drawn from the Gender and Enterprise Survey of 2015, a collaborative study conducted in Ghana, Kenya and Uganda. Employing a probit model, the study findings show that owner's education level, belonging to a business association, belonging to business group, and gender of the owner are positively associated with access to formal credit. The Gender and Enterprise Survey, whose dataset was analysed, focused on enterprises that were in operation for at least three years before May 2015 and it covered only enterprises with trading activities at the time of the survey.

Silong & Gadanakis (2020) presents the credit sources, access and factors influencing credit demand among rural livestock farmers in Nigeria. The research adopted mixed methods for an in-depth investigation into the problem. There were 216 research participants split into equal halves of men and women from six Local Government Areas of Nasarawa State, Nigeria. Data collection methods employed structured interviews, focus group discussions, closed/open-ended, and key informant interviews. Analytical tools involved descriptive statistics, the logit and multinomial logit models to determine participants' socioeconomic characteristics, sources of credit, access, factors influencing credit demand generally, and from the various sources of credit identified. The research findings reveal that only 47.6% of the participants accessed credit, with fewer women accessing than men. Factors having significant influence on credit demand generally are education and group membership among other factors.

3.0 METHODOLOGY

Research Design

According to Bhattacharjee, 2012 (as cited in Kimani, 2017), research design is the arrangement of the conditions for collections and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. It is the conceptual structure in which research is conducted and constitutes the blue print for the collection, measurements and analysis of data.

In this study, a descriptive survey research design was adopted. Descriptive research is directed at making careful observations and detailed documentation of a phenomenon of interest. Descriptive survey research design was used since it is considered as the best method available to social scientists and other educators who are interested in collecting original data for purposes of describing a population which is too large to observe directly. According to Ary,

Jacobs & Razavieh, 1990 (as cited in Mahmood et al, 2014), descriptive research studies are designed to obtain information which concerns the current status of phenomenon. Descriptive research design was therefore considered appropriate in studying the determinants of credit accessibility by the smallholder businesses in Migori County since the researcher did not have to manipulate such factors as they had already occurred.

Target Population

Target population in statistics is the specific population from which information is desired. The target population for the study was made up of the smallholder informal sector businesses of Migori County, Kenya. The population of smallholder businesspersons was identified in the study region with the help of Senior Market Attendants (Market Dues section) in the Revenue Departments of each Sub-County. The total target population was 4,757 smallholder traders out of which 2,531 and 2,226 were males and females respectively as shown in Table 2.

Sample Size and Sampling Procedure

The data collection process required a preliminary survey in order to construct the sampling frame and draw a sample. The preliminary survey used the National Sample Survey and Evaluation Programme (NASSEP) frame which is based on a three-stage stratified random sampling design for the entire Migori County where three Sub-Counties out of the ten that make up the county were randomly selected. The population from which to pick the sample was subdivided into two strata namely the smallholder businesses owned by male or female and business category i.e. general trade or personal, professional and technical services. Stratified random sampling was preferred as it enabled collection of data from male or female business owners and the category of business they operate based on their proportion of the entire population in each sub-county. Later random sampling was carried out to pick the smallholder business owners. According to Oyugi & Jagongo (2020), stratified random sampling technique is appropriate when the target population is significantly heterogeneous and the specific subgroups will need to be highlighted and create representative samples from even the smallest inaccessible subgroups. The population therefore, having been divided into smaller subgroups in each sub-county based on the shared attributes of the smallholder business owners, a random sample was taken from each sub-county in a number that is proportional to the number of smallholder business owners in each sub-county.

The survey was carried out in the market centers of the three sub-counties namely: Awendo, Migori and Kuria West. Since there was no official register of individual entrepreneurs operating in these markets, it was not possible to have a listing of all traders. Respondents were therefore randomly selected from this population in the selected markets using a random start with a total of 476 smallholder businesspersons comprising 253 males and 223 female smallholder businesspersons targeted for the study. Scholars do not agree on the exact proportion of the accessible population that should form the sample size. Mugenda & Mugenda (1999) suggest that in descriptive studies 10% of the survey population is representative enough to generalize characteristics being observed. In this study therefore 10% of the accessible population constituted the sample size. The process of sample selection of the smallholder business owners is illustrated in Table 2.

Table 2 Target Population and Sample Size of the Smallholder Business Owners

Business Category	Cluster 1:Awendo Sub-County				Cluster 2:Migori Sub-County				Cluster 3: Kuria Sub-County				Total			
	MALE		FEMALE		MALE		FEMALE		MALE		FEMALE		MALE		FEMALE	
	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S
	1	289	29	600	60	391	39	630	63	480	48	520	52	1160	116	1750

2	430	43	156	16	240	24	130	13	701	70	190	19	1371	137	476	48
Total	719	72	756	76	631	63	760	76	1181	118	710	71	2531	253	2226	223

Source: field data, 2018

Description: P=Population

S=Sample Size

1=General Trade e.g. Wholesale, Retail, Stores/Stalls, Shops and Hawkers

2=Personal, Professional and Technical Services e.g. Shoe Shiners, Barbershops, Salons, Taxis, Welding and fabrication etc.

Data Collection Instrument

To ensure that data collected address the study objectives, the data collection instrument must be selected appropriately to avoid collecting irrelevant information. In this study, questionnaires were prepared for purposes of obtaining data from the owners of smallholder businesses in Migori County. The questionnaire items were comprised of both closed-ended and open-ended questions that gave the advantage of collecting both qualitative and quantitative information.

Data Analysis

Both qualitative and quantitative techniques were used to analyze the data. Quantitative data was analyzed using descriptive statistics such as mean, percentages, standard deviation, tabulation, ratio and frequency distribution. In addition the t-test and the Chi-square statistics were employed to measure the mean and percentage differences between credit users and non-credit users. A binary logit model which best fits the analysis for the determinant factors that affects small holder businesspersons' access to credit was also employed. The unit of analysis was the owners of the smallholder businesses, one from each business in case where there was more than one owner.

Model Specification

The dependent variable is a dummy, which takes a value of zero or one depending on whether or not smallholder businesses accessed credit or not. However, the independent variables are both continuous and discrete. There are several methods to analyze the data involving binary outcomes. However, for this particular study, logistic model (hereafter the logit model) was selected over discriminant and linear probability models. If the independent variables are normally distributed the discriminant-analysis estimator which follows ordinary least square procedures (OLS) is the true maximum likelihood estimator (MLE) and therefore asymptotically more efficient than the logit model which requires maximum-likelihood method (Sisay, 2008). However, if the independent variables are not normal, the discriminant-analysis estimator is not consistent, whereas the logit MLE is consistent and therefore more robust (Maddala, 1983; Amemiya, 1981).

The linear probability model (LPM) which is expressed as a linear function of the explanatory variables is computationally simple. However, despite its computational simplicity, as indorsed by Amemiya (1981), and Gujarati (1988), it has a serious defect in that the estimated probability values can lie outside the normal 0-1 range. Hence logit model is advantageous over LPM in that the probabilities are bound between 0 and 1. Moreover, logit best fits the non-linear relationship between the probabilities and the explanatory variables (Sisay, 2008).

In the analysis of studies involving qualitative choices, usually a choice has to be made between logit and probit models. The statistical similarities between logit and probit models make the choice between them difficult (Amemiya, 1981). According to Gujarati, 1995(as cited in Sisay,

2008), the justification for using logit is its simplicity of calculation and that its probability lies between 0 and 1. Moreover, its probability approaches zero at a slower rate as the value of explanatory variable gets smaller and smaller, and the probability approaches 1 at a slower and slower rate as the value of the explanatory variable gets larger and larger.

Hosmer & Lemeshew (1989) pointed out that the logistic distribution (logit) has got advantage over the others in the analysis of dichotomous outcome variable in that it is extremely flexible and easily used model from mathematical point of view and results in a meaningful interpretation. For these reasons, the logistic model is selected for this study.

Therefore, the cumulative logistic probability model is econometrically specified as follows:

$$P_i = F(z_i) = F\left(\alpha + \sum \beta_j X_j\right) = \frac{1}{1 + e^{-z_i}} \quad \dots\dots\dots (3.1)$$

Where;

P_i = the probability that the i^{th} businessperson accessed credit given X_i $i = 1, 2, 3 \dots k$

e = the base of natural logarithms, which is approximately equal to 2.718;

X_i = the i^{th} explanatory variable;

α = the constant of the equation

β_j = parameters to be estimated; $j = 1, 2, 3, \dots k$

Hosmer & Lemeshew, 1989 (as cited in Sisay, 2008) points out that the logit model could be written in terms of the odds and log of odds, which enables one to understand the interpretation of the coefficients. The odds ratio implies the ratio of the probability (P_i) that an individual would choose an alternative to the probability ($1 - P_i$) that he/she would not choose it.

$$(1 - P_i) = 1 - \frac{1}{1 + e^{-z_i}} = \frac{1}{1 + e^{z_i}} \quad \dots\dots\dots (3.2)$$

Therefore,

$$\frac{P_i}{1 - P_i} = \frac{\frac{1}{1 + e^{-z_i}}}{\frac{1}{1 + e^{z_i}}} = \left[\frac{1 + e^{z_i}}{1 + e^{-z_i}} \right] = e^{z_i} \quad \dots\dots\dots (3.3)$$

Where

$1 - P_i$ = the probability that the i^{th} smallholder businessperson did not access credit from any financial institution.

$\frac{P_i}{1 - P_i}$ = the odds ratio of accessing credit from a financial institution by the i^{th} smallholder businessperson.

Taking the natural logarithm of equation (3.3),

$$Z_i = \ln \left[\frac{P_i}{1 - P_i} \right] = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_m X_m \quad \dots\dots\dots (3.4)$$

If the disturbance term (u_i) is taken into account, the logit model becomes

$$Z_i = \alpha + \sum_{i=1}^m \beta_i X_i + u_i \dots\dots\dots (3.5)$$

The specific form of the equation is as follows:

$$Z_i = \alpha_0 + \mu_1 D_{1i} + \mu_2 X_2 + \Omega_1 X_3 + \Omega_2 D_{2i} + u_i \dots\dots\dots (3.6)$$

Where: Z_i = a binary variable representing smallholder businesspersons' access to credit.

$\alpha_0, \mu_1, \mu_2, \Omega_1$ and Ω_2 are parameters to be determined

$D_{1i} = \begin{cases} 1, & \text{if smallholder businesspersons fear taking loans} \\ 0, & \text{otherwise} \end{cases}$

$X_2 =$ Experience in credit use

$X_3 =$ Physical distance from lending institution

$D_{2i} = \begin{cases} 1, & \text{if a smallholder businessperson is a member of a cooperative and or business association} \\ 0, & \text{otherwise} \end{cases}$

RESULTS ANALYSIS, INTERPRETATION AND DISCUSSION

Socio-Economic Characteristics of the Sampled Entrepreneurs

The Socio-economic characteristics include the respondents' attitude towards risk and experience in credit use.

Table 3 Respondents' attitude towards risk

Characteristic	Score	Credit Accessibility			
		Credit users	Non-Credit Users	Total	% of Total
Attitude towards Risk	YES	162(66.1%)	138(68.7%)	300	67.3
	NO	83(33.9%)	63(31.3%)	146	32.7

Source: field data, 2018.

Table 3 reveals that on overall, 67.3% of the respondents perceive borrowing as risky. With regard to credit accessibility, both user and non-user groups perceive borrowing as risky due their high numbers (66.1% and 68.7% respectively) compared to those who didn't perceive it so (33.9% and 31.3% respectively).

The smallholder businesspersons' experience in credit use was measured in complete months a smallholder businessperson has used credit from financial institutions.

Table 4 Respondents' Experience in credit Use

	Total	Minimum	Maximum	Mean	Std. Dev
Respondents' Experience in credit use	446	0	216	31.4484	43.80914

Experience in credit use from the financial sources varied among the sampled businesspersons. The average number of months of credit experience of the sampled businesspersons was 31.4484 months (slightly more than 3.5 years) and the maximum and minimum experience were 216 months (18 years) and 0 months respectively.

Institutional Characteristics of the Sampled Entrepreneurs

These include the distance from lending institutions and membership to multipurpose co-operatives or business associations.

The distance from lending institutions was measured as the physical distance from the business location to the nearest financial institution measured in complete kilometers.

Table 5 Distance from lending institutions

	Total	Minimum	Maximum	Mean	Std. Dev
Distance from Lending Institutions	446	0	50	8.0767	10.15006

As shown in Table 5, the distance from the respondents' business location to the nearest lending institutions in complete kilometers were assessed where the average distance was found to be 8.0767km, with minimum and maximum distances of 0 and 50 km respectively.

Table 6 Respondents' Membership to multipurpose Co-operatives and or Business Associations

Characteristic	Score	Credit Accessibility		Total	% of Total
		Credit users	Non-Credit Users		
Membership to a Co-operative and or a Business Association	YES	171(69.8%)	87(43.3%)	258	57.8
	NO	74(30.2%)	114(56.7%)	188	42.2

On Membership to Multipurpose Cooperatives/Business Associations, 258(57.8%) are members while the rest are not. Majority of the credit users (69.8%) are members to Multipurpose Cooperatives/Business Associations in the study area while, for the non-credit users, the reverse is observed where only 43.3% of the non-users are members to the Multipurpose Cooperatives/Business Associations. The implication is that membership to a Cooperative /Business Association is not a guarantee to credit accessibility but nonetheless influences the ease with which businesspersons' access credit.

Econometric Analysis of the Determinants of Credit Accessibility

Prior to running the logistic regression model, the independent variables were checked for the existence of multicollinearity problems. The result proved negative and non- significance. The correlation matrix of variables included in the analysis is presented in Table 7, while Table 8 shows the estimated regression model.

Table 7 Correlation Matrix for the Independent Variables

		1	2	3	4
1	Pearson Correlation	1.00	-.338***	.033	-.175**
	Sig. (2-tailed)		.000	.662	.021
2	Pearson Correlation		1.00	.012	.061
	Sig. (2-tailed)			.873	.425
3	Pearson Correlation			1.00	-.071
	Sig. (2-tailed)				.351

4	Pearson Correlation				1.00
	Sig. (2-tailed)				

*** Significant at 0.01 level (2 tailed)

** Significant at 0.05 level (2 tailed)

* Significant at 0.10 level (2 tailed)

Description: 1=Membership to Multipurpose Cooperative or Business Association

2=Total Number of Months of Credit Use Experience

3=Physical Distance from Lending Institutions measured in complete Kilometers

4=Respondent's Perception of Borrowing as Risky.

Based on the results of Table 7, the data was found to have no serious problem of multicollinearity and therefore they were retained in the model. Additionally, the dependent variable (access to credit) was designed as a binary outcome variable. Hence, the data and variables met the assumption underlying the logistic regression model.

Table 8: Maximum Likelihood Estimates of the Logit Model and the Effects of the Explanatory Variables on the probability of access to credit.

Explanatory Variables	Estimated Coefficient (B)	Odds Ratio {EXP(B)}	SE	Wald Statistics	df	Significance Level
Constant	-3.294	.037	1.690	3.799	1	.051
Attitude towards Risk	.515	16.74	.442	1.361	1	.743
Credit Use Experience	.335	13.99	.051	43.525*	1	.001
Distance	-.034	.967	.027	1.539	1	.215
Coop Membership	-.274	.760	.435	.397	1	.529

Source: field data, 2018.

* represent level of significance at 1%.

Table 8 above has several important elements. The Wald statistic, which has a chi-square distribution, and the associated probabilities provide an index of the significance of each predictor in the equation. The simplest way to assess Wald is to take the significance values and if less than .05 reject the null hypothesis as the variable makes a significant contribution. In this case, it is noted that credit use experience contributed significantly to the prediction ($p = .001$) but Attitude towards risk, Distance from lending institutions/Office and Membership to Multipurpose Cooperative/business Association did not ($p = .743$, .215 and .529 respectively). The maximum likelihood estimates of the logistic regression model show that Months of Experience in Credit Use (Credit Use Experience) was an important factor influencing smallholder businesspersons' access to credit in the study area (refer Table 8). Perception that borrowing is risky (Attitude towards Risk), Distance from lending institution/office (Distance) and Membership to a Multipurpose Cooperative/Business Association (Coop Membership) were less powerful in explaining the sample businesspersons' access to credit indicating that the two groups (users and non-users of credit) were homogeneous to these variables.

Discussion of Research Findings

Socio-Economic Factors

The socio-economic factors pertinent to the current study include smallholder businesspersons' attitude towards risk and experience in credit use.

The attitude towards risk measured the risk taking propensity among smallholder businesspersons. It was a dummy variable measured by "1" for lack of fear of loans as risky and "0" otherwise. Even though positively related and consistent with the a priori expectation, the relationship was insignificant (.515, $p = .743$) at 5%. The result is as expected and is

consistent with Sisay (2008) which establishes a positive but insignificant relationship between credit access and attitude towards risks. However, Alhassan & Sakara (2014); Mahmood et al (2014) find contradicting results.

Experience in credit use was another factor which was positively related to credit access and that it was significant at 1% probability level (.335, $p = .001$). The estimated coefficient is consistent with the a priori expectation. The odds ratio in favour of accessing credit increases by a factor of 13.99 for a unit increase in credit use experience by one month. The reason behind this is that a businessperson having more experience in credit use will have more tendencies using that source. This finding corroborates the results of Atieno (2001); Sisay (2008); Alhassan & Sakara (2014); Mahmood et al (2014) who observed that past credit participation favours access to credit.

Institutional Factors

The institutional factors included the distance from credit sources and membership to multipurpose co-operatives and or business associations.

The variable for Distance measured the physical distance from the business location to the nearest lending institution in complete kilometers. Even though consistent with the a priori expectation, its contribution to the prediction of the model was insignificant at 5% (-0.034, $p = 0.215$). Sisay (2008) also finds similar results which indicate an insignificant contribution of distance from a credit source in determining credit accessibility. The results for Atieno (2011) and Kiplimo et al (2015) however contradict the current study with regards to the effect of distance in determining access to credit.

Membership by the smallholder businesspersons to multi-purpose cooperatives and or business associations was negatively and insignificantly related to credit access by the same group in the study area (-0.274, $p = .529$). This result contradicts the a priori expectation but is consistent with the results of other studies which establishes that membership insignificantly affects credit accessibility (see Assogba et al, 2017; Silong & Gadanakis, 2020). On the contrary, Sisay (2008) and Buyinza et al (2018) find membership a significant variable in explaining access to credit.

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Major Findings

The study focused on the problems that affect smallholder businesspersons' access to credit in Migori County. A multi-stage sampling technique was applied in the study. In the first stage, Sub-Counties were selected and in the second stage, the required respondents were selected. The businesspersons were categorized into two categories namely: General Trade and Personal/professional/Technical services and also male and female. Targeting a sample size of 476 businesspersons with an estimated response rate of 90%, 527 contacts were made. The target sample businesspersons successfully interviewed were 446 distributed as follows: Awendo Sub-County: 138 respondents, Migori Sub-County 129 and finally Kuria West Sub-County with 179 respondents.

In order to explain the determinants of credit access by the smallholder businesspersons in the study area, the researcher employed Econometric analysis (binary logistic regression model) in addition to descriptive statistics with the help of SPSS software. The overall accuracy of the model to predict credit access among smallholder businesspersons in the study area was 95.1%. The survey results indicates that 245 (representing 54.9%) of the sample businesspersons were credit users whereas the remaining 201 (45.1%) were non-users. Out of these, 243 (54.5%) were

males while 203 (45.5%) were female businesspersons. The Smallholder businesspersons' access to credit is influenced by socio-economic and institutional factors.

5.1.1 Socio-economic factors

Of the two socio-economic factors, months of credit use experience was statistically significant to credit access at 1% probability level while the attitude towards risk was insignificant.

However both were positively related to credit access by the smallholder businesspersons in the study area, in line with the a priori expectations.

5.1.2 Institutional factors

The institutional factors under consideration by the study included the physical distance from a credit source and membership to multipurpose cooperatives or business associations.

Both variables were negatively related to credit access, with the variability in distance from a credit source on credit accessibility consistent with the a priori expectation. Interestingly, the two institutional factors were less powerful in explaining the variation in credit accessibility by the smallholder businesspersons.

5.2 Conclusions

A number of conclusions can be drawn from the results of this study. One major conclusion is that quite a large number (45.1%) of the informal sector smallholder businesspersons have never accessed credit from formal financial sources which implies a very huge potential demand for credit.

The composition and participation of the informal sector smallholder businesspersons is gender balanced given the numbers of male and female traders in the sector. It also shows that microfinance has the potential to contribute significantly to gender equality in the financial markets.

College and University graduates shy away from participation in the informal sector due to clamour for white collar jobs.

The informal sector smallholder businesspersons do not fear taking up loans.

A very large proportion on non-credit users are not members to multi-purpose co-operatives and or business associations in the study area

5.3 Policy Recommendations

Some policy implications can be drawn from the results of this study. Given the relatively abundant financial resources of the formal financial institutions compared with the informal sources, there is need for policy measures to increase access of smallholder businesses to formal credit. There should be a way to transform the huge potential demand for credit by the smallholder businesspersons to be actual demand. This can be achieved through the establishment of credit insurance schemes protecting the financial institutions against default risks which may result in credit rationing.

The formal financial institutions such as Banks and MFIs should also be encouraged to diversify their loan portfolios so as to enable to cater for the different financial needs of the informal sector. The MFIs should move towards a more gender-balanced portfolio to benefit all the poor, gender notwithstanding.

Smallholder businesspersons should be encouraged to create social capital through their membership of associations relevant to their businesses. The business progress of one member could encourage others to participate.

Understandably, the distance to the nearest credit source had a negative influence on access to credit by the smallholder businesspersons. This is not surprising as distance is directly related to the cost of borrowing, information asymmetry and accessibility. This has important policy

implications for government and financial institutions in terms of improving infrastructure and distribution of branch networks.

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