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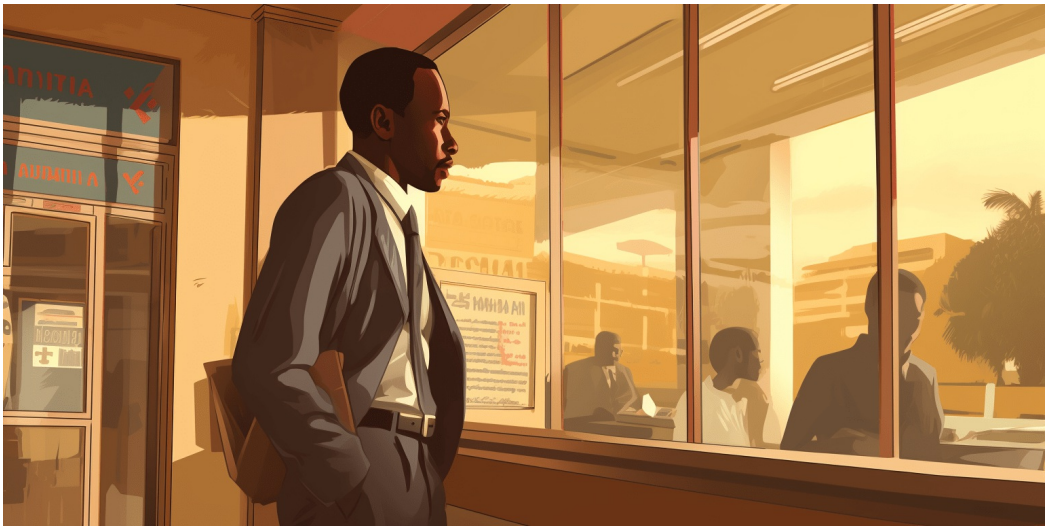

Factors Influencing Access to Credit for Rural People in Ethiopia

Yisehak Tesiso[1], Kanbiro Orkaido[2], Yafet Hailu G/Selassie[1]

1 Dilla University
2 Furra College

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Abstract

The lack of access to credit continues to be a major obstacle in developing countries, particularly in rural areas. Providing access to microcredit in rural regions can significantly improve the lives of the poor. This study examines the factors that affect the access to microcredit among rural individuals in the Bilate Zuria district of the Sidama region. A cross-sectional dataset was collected from 385 respondents selected through multiple stage sampling. The data were analyzed using both descriptive and inferential statistics in SPSS. The results of the analysis reveal that out of the 385 respondents, 34.5% (133) had access to credit. The logistic regression model shows that gender, marital status, collateral, lending procedures, group lending, high interest rates, distance, number of dependents, and the availability of limited microfinance institutions significantly affect the access to credit for rural residents in the study area. It is recommended that policymakers, the government, and other stakeholders emphasize and improve the accessibility of microcredit and increase its availability in rural areas.

Yisehak Tesiso[1], **Kanbiro Orkaido Deyganto**, PhD[2], and **Yafet Hailu G/Selassie**[1]

[1] *Accounting and Finance Department, Dilla University, Dilla, Ethiopia*

[2] *Research Scholar, School of Business and Economics, Atlantic International University, Pioneer Plaza, 900 Fort Street Mall 905, Honolulu, HI 96813, USA*

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1. Introduction

The majority of the population in developing countries in Africa, Asia, and Latin America resides in rural areas, relying on agricultural products as a source of income and employment. However, these areas often face limited access to formal financial services, including credit, savings, and insurance (Bauchet et al., 2011; Shyamal Chowdhury, 2017). According to a World Bank report (2021), there has been significant poverty reduction in rural areas, although the poorest segment of society, primarily located in remote rural regions, has not experienced substantial consumption growth in recent years; “Poverty reduction in rural areas, where the bulk of the poor live, was fast as well, though it has slowed down in the most recent period (2010-2015)”.

The accessibility of microcredit is a crucial factor in the process of poverty alleviation (Asghar, 2012; El-komi, 2010). However, Harisha B S (2018) emphasizes that financial inclusion for the poor remains challenging. Microfinance services, particularly microcredit, are recognized as important tools for lifting rural populations out of poverty and promoting rural entrepreneurship (Kiros H., 2012). Unfortunately, the access to microfinance services and their operations have encountered constraints such as “poor regulatory environment, regular vicissitudes in government policies, paucity of capital, inadequate skills and professionalism, infrastructural inadequacies, socio-cultural misconceptions, corruption, frauds and forgeries and poor corporate governance lack of use of technology and cost effective methods, human resource problem, lack of access to credit” (Akwasi Addai Boateng, 2015; Muluken and Mesfin, 2014; Yaregal Tilahun Geremewe, 2019).

Microcredit for the rural poor in Africa is insufficient. For example, Misebi et al. (2010) noted that the lack of formal credit for agricultural products has contributed to poor performance in Nigeria. Similarly, smallholder agriculture in the Democratic Republic of Congo has continued to face a lack of access to suitable credit facilities (Muayila and Tollens, 2012).

In Ethiopia, studies have revealed a low allocation of financial resources to the rural poor, particularly in the agricultural sector. There is a significant gap between the supply and demand of finance in rural areas (Admassie, 2004; Komicha, 2017; Chanyalew, 2015). Additionally, Semira Hassen ALI Solomon ALEMU's study (2018) highlighted other characteristics such as the limited participation of women and the increasing number of active borrowers and gross loan distribution at a decreasing rate within microfinance institutions (MFIs). “In Ethiopia, the potential demand for financial services, particularly micro-credits is huge. However, the existing supply of financial services to the poor is very limited. As

a strategic tool in alleviating the problem, though provision of microfinance services by government and non-government organizations were started in the past years, much emphasis was not given until the recent years" (Dechasa S, 2017; Yaregal T, 2019).

Scholars have investigated the factors that influence access to credit in rural households. Thi Thanh Tu et al. (2015) identified education level, land area per capita, and owned residential area as factors affecting access to microcredit for rural households. Vuomg Quoc Duy (2012) found that household capital endowments, marital status, family size, and distance to the market center influence access to credit for rural households. Mduduzi Biyase et al. (2018) indicated that gender, employment, ethnicity, and geographic location of households significantly affect access to credit. Van Vu et al. (2021) discovered that education, material possessions, collateral, credit size, credit source, age, family size, ethnicity, interest rates, and money paid all influence access to microcredit for rural households. E.A. Ajah, J.A. Igiri, and H.B. Ekpenyong (2017) found that high interest rates, lack of guarantor and collateral, age, and annual income strongly influence access to credit for rice farmers.

In a study by Daniel Odoom et al. (2019), Ghanaian microfinance institutions faced challenges such as intense industry competition, low repayment rates, high information technology costs, operator skills, infrastructure deficiencies, capital requirements, and regulation and supervision. Mohammed et al. (2017) analyzed the factors that affect access to finance for small and medium-sized enterprises (SMEs) in Bangladesh. The study identified firm size and age, education and skills of owners, and unfavorable credit terms like high interest rates, lack of collateral security, and corruption by bank officials as influential factors.

In various studies conducted in Ethiopia, scholars have examined and analyzed the factors that affect credit access for rural households, particularly in relation to farming activities. For example, Geleta et al. (2018) found that the factors influencing the accessibility of microcredit for household heads are sex, education level, cultivated land size, livestock holdings, and frequency of extension contact. Similarly, Leman et al. (2019) identified age, sex, education, number of livestock owned, year of membership in the credit institution, frequency of extension contact, and distance from the credit source as major factors influencing access to microcredit for rural farmers. Tigist.T et al. (2019) indicated that the factors affecting credit access among small-scale irrigation user farmers are the cost of irrigation technology, households' attitude towards risk, income from irrigation, sex, education level, family size, land size of the household, access to extension services, and annual earned income (according to the findings of Sisay Genanu, 2020).

Furthermore, Samuel Semma Waje (2020) highlighted that lending procedures, repayment period, age of the household, and livestock ownership are influential factors. The study conducted by Shewit Kiros et al. (2022) identified factors such as age, educational level of the smallholders, membership in credit institutions, extension services, saving habits, collateral, connection with local leaders, livelihood diversification, age, sex of household head, family size, extension contacts, off-farm income, interest rates, lending procedures, group lending, and rapid repayment period as factors influencing credit access.

Identifying the factors that enhance proper access to microcredit for the rural poor is crucial not only for rural development

but also for guiding the government in formulating pro-poor policies that promote increased credit flow to rural areas for poverty reduction. Many of the aforementioned studies have investigated and addressed the factors affecting credit access in rural areas, with a focus on agricultural products (Kiros et al., 2022; Samuel Semma Waje, 2020; Geleta et al., 2018; E.A. Ajah, J.A. Igiri, and H.B. Ekpenyong, 2017; Hung Van Vu et al., 2021, among others). Indeed, the rural economy heavily relies on agriculture. However, there are also other economic activities, such as small businesses and employment, either in conjunction with agriculture or independent of it.

This study aims to fill the gap and explore an untouched section of major socio-economic, demographic, institutional, and other factors that influence credit access for rural people in the Bilate Zuria district. In developing countries across Africa, Asia, and Latin America, the majority of the population resides in rural areas, relying on agricultural products as a source of income and employment. However, access to formal financial services, including credit, savings, and insurance, is limited in these regions (Bauchet et al., 2011). The World Bank's report (2021) acknowledges significant poverty reduction in rural areas. However, the poorest segment of society, concentrated in remote rural areas, has not experienced tangible consumption growth during the evaluation period; “Poverty discount in rural areas, where the bulk of the bad live, was fast as well, even though it has bogged down within the most current length (2010-2015)”.

Accessibility to microcredit is a crucial factor in the process of poverty alleviation (Asghar, 2012; El-komi, 2010). However, Harisha B S (2018) emphasizes that achieving financial inclusion for economically disadvantaged sections of society is currently considered challenging.

Microfinance services, particularly microcredit, are recognized as essential tools for lifting the rural poor out of poverty (Kiros H., 2012) and are designed to reduce poverty and promote rural entrepreneurship. Unfortunately, the access to microfinance services and their operations have faced constraints such as “poor regulatory environment, normal vicissitudes in government regulations, paucity of capital, inadequate competencies and professionalism, infrastructural inadequacies, socio-cultural misconceptions, corruption, frauds and forgeries and terrible company governance lack of use of technology and fee powerful methods, human resource trouble, lack of access to credit score” (Akwasi Addai Boateng, 2015; Muluken and Mesfin, 2014; Yaregal Tilahun Geremewe, 2019).

Microcredit for the rural poor in African countries is insufficient. For example, Misebi et al. (2010) noted that the shortage of formal credit for agricultural products has contributed to low performance in Nigeria. Smallholder agriculture in the Democratic Republic of Congo also continues to lack access to suitable credit facilities (Muayila and Tollens, 2012).

Similarly, studies in Ethiopia reveal that the financial support directed to the rural poor, especially in the agricultural sector, is low. There is a significant gap between the supply and demand for finance in rural areas (Admassie, 2004; Komicha, 2017; Chanyalew, 2015). Semira Hassen ALI Solomon ALEMU's study (2018) highlights other characteristics, such as limited outreach of microfinance institutions in terms of the number of active borrowers and the amount of loans distributed, and limited participation of women. In Ethiopia, there is a substantial demand for financial services, particularly microcredit, but the existing supply is very limited. While the provision of microfinance services by government and non-governmental organizations began in previous years, it has not received significant emphasis until recently (Dechasa S, 2017; Yaregal T, 2019).

Scholars have investigated the factors influencing access to credit in rural households. In this regard, Thi Thanh Tu et al. (2015) identified education level, land area per capita, and owned residential area as factors affecting access to microcredit for rural households. Vuomg Quoc Duy (2012) also found that family's capital endowments, marital status, family size, and distance to the market center influence access to credit for rural families. Mduduzi Biyase et al. (2018) indicated that gender, employment, ethnicity, and geographic location of households significantly affect access to credit. Van Vu et al. (2021) discovered that education, material possessions, collateral, credit size, credit source, age, family size, ethnicity, interest rates, and money paid all affect access to microcredit, particularly for rural households. E.A. Ajah, J.A. Igiri, and H.B. Ekpenyong (2017) found that high interest rates, lack of guarantor and collateral, age, and annual income strongly influenced access to credit for rice farmers.

In a study by Daniel Odoom et al. (2019), Ghanaian microfinance institutions faced challenges such as intense competition in the industry, low repayment rates, high costs of information technology, operator capabilities, infrastructure deficiencies, capital requirements, and regulation and supervision. Mohammed et al. (2017) analyzed the factors that affect access to finance for small and medium-sized enterprises (SMEs) in Bangladesh. The study identified firm size and age, education and skills of owners, and unfavorable credit terms such as high interest rates, lack of collateral security, and corruption by bank officials as influential factors.

In Ethiopia, various scholars have conducted research and analysis on the factors that affect credit access for rural households, particularly in relation to their farming activities. For instance, Geleta et al. (2018) identified factors such as gender, education level, cultivated land size, livestock ownership, and frequency of extension contacts as influential in accessing microcredit for rural household heads. Similarly, Leman et al. (2019) found that age, gender, education, number of livestock owned, years of membership in credit institutions, frequency of extension contacts, and distance from credit sources were major factors influencing access to microcredit for rural farmers. Tigist.T et al. (2019) indicated that factors influencing credit access among small-scale irrigation users include the cost of irrigation technology, the attitude of households towards risk, income from irrigation, gender, education level, family size, land size, access to extension services, and annual earned income (as per the findings of Sisay Genanu, 2020).

Additionally, Samuel Semma Waje (2020) highlighted lending procedures, repayment periods, the age of the household, and livestock ownership as significant factors. Shewit Kiros et al. (2022) examined factors such as age, educational level of smallholders, membership in credit institutions, extension services, savings habits, collateral, connection with local leaders, livelihood diversification, age, gender of the household head, family size, extension contacts, off-farm income, interest rates, lending processes, group lending, and rapid repayment periods.

Identifying the factors that enhance proper access to microcredit for the rural poor would not only aid rural development but also guide the government in formulating pro-poor policies that promote increased credit flow to agricultural areas for the purpose of poverty reduction. Many of the studies mentioned above have investigated and addressed the factors that affect access to credit in rural regions, with a particular emphasis on agricultural products (Kiros et al., 2022; Samuel Semma Waje, 2020; Geleta et al., 2018; E.A. Ajah, J.A. Igiri, and H.B. Ekpenyong, 2017; Hung Van Vu et al., 2021,

among others). Indeed, the rural economy is highly dependent on agriculture. However, there are also other economic activities such as small businesses and employment, either in conjunction with agriculture or independently.

This study aims to fill the existing gap and address an untouched segment by examining the important socio-economic, demographic, institutional, and other factors that influence access to credit for rural individuals in the Bilate Zuria district, located in the Sidama region of Ethiopia.

2. Review of the literature

Microfinance, microcredit, and their constraints

icrofinance can be defined as the provision of small loans, also known as micro-credit, or savings services to individuals who are excluded from the formal banking system (Parker et al., 2000). It is a type of banking service that aims to provide financial and non-financial services to low-income or unemployed people, particularly in developing countries. Microfinance has been recognized as a powerful tool for empowering the poor, especially women, on a global scale (Noreen, 2011). In the context of our study, microfinance primarily refers to the provision of small loans and savings services to the rural poor in developing countries, although some microfinance institutions may also offer non-financial services to their clients (Muluken and Mesfin, 2014).

Microfinance seeks to provide financial services to households and micro-enterprises that are typically excluded from traditional commercial banking services. These individuals are often low-income, self-employed, or informally employed, lacking formal ownership titles for their assets and possessing limited formal identification documents. The key distinction between micro-credit and microfinance programs lies in the types of services they offer. Micro-credit programs, such as Grameen Bank, primarily focus on loan distribution and recovery, often linked to group formation and mandatory savings. In contrast, microfinance programs encompass a broader range of financial services, including micro-credit. Therefore, while micro-credit is a crucial component, it alone is not sufficient within the broader financial sector that aims to address the credit needs of the poor who lack access to formal financial sources.

Microfinance and rural communities

The rural poor have specific credit needs characterized by certain key characteristics. Many of them work as casual laborers in the informal sector, engaging in activities such as street vending, home-based production, and manual labor, such as domestic work (Gaiha, 2005). Their need for credit often arises from uncertain earnings, resulting in disruptions in their cash flow, medical emergencies, household expenses, and extortions by legal or illegal actors. Unfortunately, many poor families in the developing world have limited access to formal financial services, including credit, savings, and insurance (Bauchet et al., 2011). Consequently, they rely on various informal credit arrangements with moneylenders, relatives, friends, or local merchants. However, these options are unreliable and often unaffordable. The lack of access to formal credit has thus hindered poor farmers from expanding their production, improving their living conditions, adopting

technology, and maintaining proper nutrition and health.

According to Reyes (2012), rural development, particularly farm productivity, can be influenced by various factors, including access to credit. Agricultural credit plays a crucial role in accelerating agricultural modernization and economic development. It facilitates the flow of inputs, thus enhancing efficiency in farm production (Nouman et al., 2013). Access to credit has been shown to improve the production efficiency of small-scale farmers, thereby reducing rural poverty and food insecurity (Omonona et al., 2010). Farmers with access to credit are more likely to use optimal levels of inputs in their production compared to those who are credit-constrained. Therefore, improving access to credit has the potential to facilitate optimal input use and have a positive impact on farm productivity.

Determinants of access to finance in rural areas and empirical literature

In discrete choice theory, the accessibility to microfinance loans can be explained by individuals having the choice to either apply for the loan or not. The decision to apply for the loan indicates that the applicant intends to maximize their utility through borrowing, taking into account the cost of interest (Taofeeki et al., 2016). For example, in an analysis of sectoral choices of farm households in two districts of Southern Ethiopia, Komicha (2008) found that the informal credit sector dominates rural financial markets. On the other hand, when examining the supply of microfinance loans, the credit rationing theory is applicable. Lenders may require collateral and increase interest rates if the demand for loans exceeds the available supply. Consequently, the lender may ration the loan, resulting in some applicants receiving the full loan amount or a portion thereof, while others may be disappointed by the rejection of their applications (Zeller, 1994). Komicha (2007) notes that credit rationing by formal financial institutions is often cited as a factor pushing farmers and small entrepreneurs towards informal credit sources. Various studies have investigated the factors affecting the demand for microcredit specifically among rural farmers.

Education: Education is considered an essential asset for communities as it enables them to access useful technologies, information, and acquire new skills to develop their rural on- and off-farm activities and improve their livelihoods. Several studies, including those by Thi Thanh Tu et al. (2015), Geleta et al. (2018), Samuel Semma Waje (2020), and Hung Van Vu et al. (2021), consistently found that education levels have a significant and positive effect on household access to credit. However, it is worth noting that a study from China by Bing et al. (2008) and a study in Ethiopia by Shewit Kiros et al. (2022) reported a negative influence of education on credit demand, which contrasts with the findings in other studies.

Gender: It is important to acknowledge that in many African societies, men and women are engaged in different economic activities, which can have varying implications for credit demand. Gender norms and associated roles can act as barriers to women's access to financial services, reinforcing traditional gender constructs and societal norms (Taylor and Boubakri, 2013). Women who deviate from traditional gender roles by pursuing independent and entrepreneurial paths in their economic endeavors may face resistance due to societal norms (Kiros A., 2012). Several studies have reported that women are less likely to seek credit from formal sources in Ethiopia (Komicha, 2007), Uganda (Mpuga, 2010), and Nigeria (Ajagbe et al., 2012). Surprisingly, a study from Ghana (Akudugu, 2012) found that men were less likely to seek loans. Tigist.T (2019) found that social characteristics, including gender, have a positive effect on credit demand. However, a

study conducted in Ethiopia by Girma and Abebaw (2015) did not find a significant association between gender and credit demand.

Marital status: The marital status of respondents also has a significant effect on credit demand (Silong et al., 2020). For instance, Hung Van Vu (2022) and Akpandjar et al. (2013) indicated that the marital status of respondents has a positive effect on access to credit.

Number of dependents: The number of dependents is a factor that can influence the credit access of rural individuals. Empirical evidence has yielded different results. Studies by Shewit Kiros et al. (2022), Assifaw and Adeba (2016), and Masaood and Keshav (2020) found that the number of dependents has a positive effect on credit demand. Households with more family members have a higher likelihood of accessing formal financial credit compared to those with fewer family members. A larger family size enables self-engagement in farming activities, utilizes more family labor for production, and generates greater income than households with fewer family members. However, prior studies by Komicha (2007) and Messah (2011) found a negative influence, while Swain (2007) found a positive association between the number of dependents and credit demand in India.

Level of income: At the household level, the income level is a crucial factor that determines the demand for credit. Duflo et al. (2008) found that the ownership of livestock has a negative influence on credit demand, as households may not require additional capital. However, Mpuga (2004) and Mpuga (2008) argue that it is not the number of assets but rather the value of assets (such as buildings and land) owned by households that strongly influences credit demand. Another variable influencing credit demand is farm size, which has been shown to positively affect demand for formal credit in various countries, including Pakistan (Khan and Hussain, 2011), Ethiopia (Komicha, 2007), China (Bing et al., 2008; Tang et al., 2010), India (Swain, 2002; 2007), Vietnam (Barslund and Trap, 2008), Kenya (Atieno, 1997), and Ghana (Akudugu, 2012).

Economic activity of individuals: In rural areas, agriculture is the primary source of income. Additionally, some individuals engage in small businesses, while others are employed. The skills, opportunities from off-farm investments, and occupation of individuals are key factors influencing borrowers' decision to seek a loan from microfinance institutions (Chaudhuri, 2011).

Lending procedure: Credits with a lengthy lending procedure have a lower probability of accessing formal financial credit compared to credits with a shorter procedure. Studies by Shewit (2020), Nouman et al. (2013), Mebrate (2015), Assifaw and Adeba (2016), and Julien et al. (2021) indicate that a longer lending period negatively affects farmers' demand for credit. Furthermore, credits with group lending have a lower probability of accessing formal financial credit compared to credits with individual lending, as noted by Shewit et al. (2020). Several studies conducted by scholars such as Muhongayirea et al. (2013), Dube et al. (2015), Mebrate (2015), Assifaw and Adeba (2016), and Masaood and Keshav (2020) have revealed that the lending procedure has an impact on credit access.

Interest rate: Empirical studies have shown that interest rates have a negative impact on credit demand, despite some arguments that lack of access is the primary challenge for the poor. Studies conducted by Briones (2009), Akudugu

(2012), Komicha (2007), Wiboonpongse et al. (2006), Baiyegunhi and Fraser (2014), Mebrate (2015), Assifaw and Adeba (2016), Gbigbi (2017), and Julien et al. (2021) consistently found that an increase in effective lending rates had a negative influence on credit demand. Shewit et al. (2020) also found a negative relationship between interest rates and credit demand among farmers, indicating that credits with higher interest rates are less likely to access formal financial credit compared to those with lower interest rates. Repayment period is another factor that borrowers face. Empirical evidence from studies by Shewit et al. (2020), Muhongayirea et al. (2013), Dube et al. (2015), Mebrate (2015), Gbigbi (2017), and Masaood and Keshav (2020) shows that a rigid repayment period and collection procedure have a negative impact on access to credit.

Loan size relative: Limited loan size relative to market conditions and the capital required to start and generate sustainable income is a challenging factor, as highlighted by Diriba Ayele et al. (2019). Additionally, Bin (2021) asserts that the size of credit is an important component that influences access to credit.

Transaction costs: Transaction costs, which reflect the level of friction in the functioning of markets, can have a significant impact on credit demand. Higher transaction costs indicate lower market efficiency. Studies conducted in Ethiopia by Komicha (2007) and China by Tang et al. (2010) found that high transaction costs negatively influence formal credit demand. High borrowing costs are also found to have a profound negative influence on borrowing decisions of farm households (Atieno, 2001).

Number of financial institutions: The number of financial institutions offering credit in an economy has a significant impact on its overall growth. Schoof (2006) observed that an insufficient number of financial institutions providing credit services to SMEs can hinder the development of industries. When the number of small-scale traders is high but the financial institutions catering to their needs are limited (resulting in excess demand), the loan prices tend to be high, making them unaffordable and leading to low uptake by SMEs.

Loan repayment rate: Boateng et al. (2015) identified low repayment rates and erosion of public confidence as challenges faced by MFIs in Ghana. The low repayment rate was ranked as a significant challenge, highlighting concerns about the sustainability of these institutions. Similarly, Odoom et al. (2019) emphasized that the recent collapse of MFIs in Ghana has contributed to low confidence in these institutions.

Distance to lending: It is understandable that the distance to financial institutions offering loans has been reported in several studies to have a negative impact on loan demand. Studies conducted in Nigeria (Akpan et al., 2013), Ghana (Akudugu, 2012), Pakistan (Khan and Hussain, 2011), and China (Bing et al., 2008) have found a significant negative relationship between distance to the lending agency and loan demand. This relationship is not surprising as distance affects the cost of borrowing, information accessibility, and information asymmetry. These findings have important policy implications for governments and financial institutions in terms of improving infrastructure and expanding their branch networks to enhance accessibility.

In conclusion, the literature indicates that factors affecting access to microcredit range from socio-demographic factors to policy and regulatory factors. Weak institutional capacities, lending requirements of financial institutions, government

policies and regulatory frameworks, access to infrastructure and support services, and environmental conditions all play a role. Based on the reviewed literature, this study categorizes the factors affecting access to credit in rural areas as socio-economic, demographic, institutional, and other factors. Demographic factors include gender, age, and marital status. Socio-economic factors include education level and income, as well as the assets that can be pledged as collateral. Institutional factors encompass interest rates, lending procedures, operating costs, loan sizes, and group lending. Other factors are related to infrastructure and the regulatory environment. It is worth noting that the working environment of various microfinance institutions is often more favorable in urban areas where there are better infrastructural facilities and technologies available.

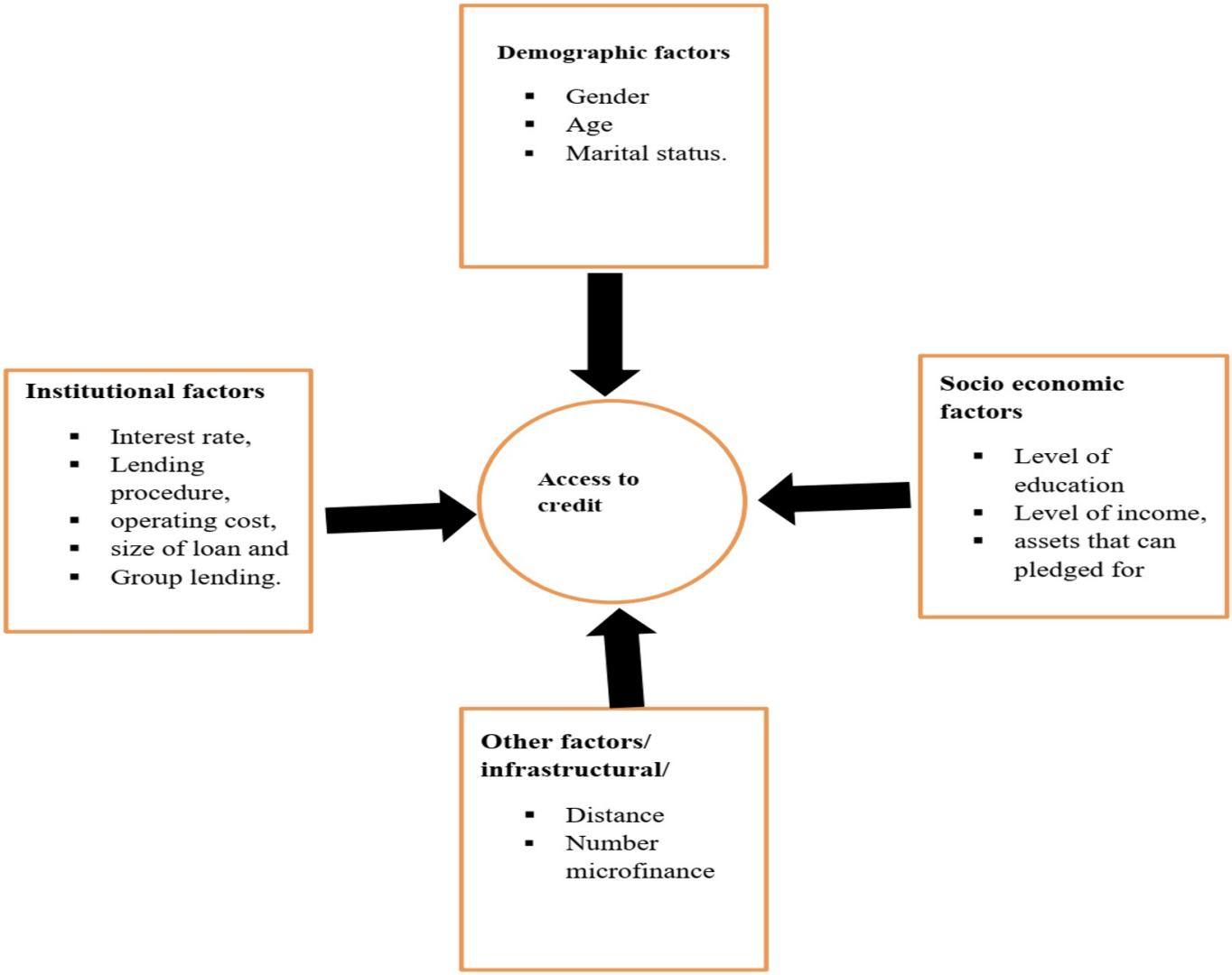

Figure 1. Constructed by own based on various literature (2022)

3. Methods and materials

Description of the study area

This study was conducted in Bilate Zuria district, located in the Sidama Regional state of Ethiopia. The district is situated approximately 42 km away from Hawassa city, which serves as the capital of the Sidama Regional state. Bilate Zuria district is comprised of 19 sub-districts, known as "kebeles," which are the smallest administrative units in Ethiopia. It consists of 17 rural kebeles and 2 urban kebeles. The district shares borders with Hawassa Zuria in the north, Boricha in the east, Loka Abbaya in the south, and Bilate River and Wolita zone in the west. It is situated in the lowland area of the zone, characterized by high temperatures and moderate annual rainfall. According to the district's statistical records in 2022, the total population of the district is 147,751, with 73,875 females and 73,876 males. The total area of the district is approximately 39,405 hectares.

Sampling technique

The study utilized a multi-stage sampling technique. Initially, five kebeles were purposively selected. In the second stage, a proportionate sampling procedure was employed to determine the number of respondents to be selected from each kebele. Finally, respondents were randomly chosen using a balloting system to meet the predetermined proportion for each category. According to the district's records, each kebele is expected to have an average population of over 7,775 residents. Additionally, data from the microfinance institution indicated that there are 10 employees involved in arranging and managing microfinance activities in the district, all of whom were included in this study.

Sample of the study

To ensure generalizability to the entire population, various sampling designs and procedures were employed to obtain a truly representative sample. In this section, the sampling designs and procedures used for this study are presented. The sample size for the study was determined using the single population proportion cross-sectional formula, taking into account the assumptions made. For the study objectives, five kebeles were purposefully selected from the district. Cochran (1963:75) developed an equation to obtain a representative sample for proportions in a large sample. Since the number of smallholder farmers in the districts exceeds 10,000 in the five selected kebeles, the sample size formula developed by Cochran (1963) was used.

$$n0 = \frac{z^2pq}{e^2}$$

Where n0 represents the sample size, Z^2 is the abscissa of the normal curve corresponding to a 95% confidence level (1.96), p is the estimated proportion of the attribute in the population (assumed to be 0.5 for maximum variability), q is the complement of p (i.e., 1-p), and e is the desired level of precision (0.05). By substituting the values into the formula, we obtain:

$$n0 = \frac{z^2pq}{e^2} = = \frac{(1.96)^2 * 0.5 * 0.5}{(0.05)^2} = \frac{(3.8416) * 0.25}{0.0025} = 385$$

Since there are 10 employees involved in arranging and managing microfinance activities in the district, and all employees

are included in the study, the final sample size would be 395 respondents.

Data types and data collection method

The data collection method relied mainly on primary data, which was collected through interviews and open and closed-ended questionnaires. Secondary data sources included manuals, reports, profiles, statistical data, and other national and international reviews. Structured questionnaires were utilized to gather information on the socio-economic characteristics that were considered to potentially influence households' decisions to access credit. The questionnaire covered determinants such as gender, marital status, collateral, lending procedure, group lending, high interest rates, distance to lending institutions, number of dependents, and the availability of limited microfinance institutions. The questionnaires were randomly administered to the 395 respondents.

Data analysis

The collected data was analyzed using descriptive and inferential statistics. SPSS software version 21 was utilized for the analysis. To achieve the objectives of the study, a logit regression model was employed to analyze the quantitative data. Descriptive statistics, such as frequency and percentage, were used to present the characteristics that could potentially influence credit utilization. These descriptive statistics were presented in tabular form.

Empirical econometric model

According to Wooldridge (2009), the logistic regression coefficient can be utilized to estimate the odds ratios for each independent variable in the model. The logistic regression model, also known as the logit model, can be applied to a wider range of research scenarios compared to discriminant analysis. The term "logit" refers to the natural logarithm of the odds (log odds), which represents the probability of falling into one of two categories for a specific variable of interest (Wooldridge, 2009). In this study, since there were only two options available, namely "access to credit" or "no access to credit," a binary model was established. In this binary model, Y=1 represented the situation where the farmer accessed credit, and Y=0 represented situations where the farmer did not have access to credit from either formal or informal sources.

According to Gujarati and Porter (2009), the estimation of the Logit model involves transforming the equation into its natural log form:

$$Li = \ln\left(\frac{Pi}{1 - Pi}\right) = Zi = \beta 0 + \beta j \sum_{j=1} k \quad X\, i + Ui$$

This equation shows that the log of the odds ratio (L) is linear in both the independent variables (X) and the parameters (β). It is important to note that as the probability (P) varies from 0 to 1, the transformed variable (Z) ranges from negative infinity to positive infinity.

In the context of this study, the model can be specified as:

$$Li = \ln\left(\frac{Pi}{1-Pi}\right) = f(x_1\ x_2,\ldots\ x_n)$$

Here, P_i is the binary dependent variable, where $Pi = 1$ if the person has access to credit and $Pi = 0$ otherwise. $X_1, x_2 \ldots x_n$ represent the independent variables included in the model.

Table 1. Variables used in the model

Variable	Definition
Dependent variable	
Access to credit	Access to credit (0 = no, 1 = yes)
Independent variables	
Age	Age of respondents in years
Gender	Gender of respondents (0 = female, 1 = male)
Education	Level of education (1 = no formal education, 2 = formal education up to high school without certificate, 3 = formal education with certificate)
Marital status	Marital status (0 = unmarried, 1 = married)
Level of income	Level of income of respondents compared to their surroundings (1 = low, 2 = medium, 3 = high)
Source of income	Economic activity in which respondents are engaged (1 = farming, 2 = small business, 3 = employment, 4 = a mix of sources)
Collateral asset	Whether respondents have assets that can be pledged (0 = no, 1 = yes)
Lending procedure	Whether the lending process is short and precise (0 = no, 1 = yes)
Operating cost	Whether the cost of loan processing is high (0 = no, 1 = yes)
Rigid Repayment	Whether the repayment period and collection procedure is rigid (0 = no, 1 = yes)
Low repayment rate	Whether the repayment rate of customers is low (0 = no, 1 = yes)
High interest rate	Whether the interest rate applied on the loan is high (0 = no, 1 = yes)
Group lending procedure	Whether the group lending procedure helps in accessing finance (0 = no, 1 = yes)
Number of microfinance	Whether the availability of a limited number of microfinance institutions affects access to credit (0 = no, 1 = yes)
Distance	Distance from the microfinance institution (0 = distant, 1 = near)
Size of loan	Whether the size of the loan that respondents can apply for is limited (0 = no, 1 = yes)

4. Results and discussion

We utilized both descriptive statistics (presented in Table 2) and an econometric model (Table 4) in this study. Descriptive statistics were used to analyze continuous and dummy variables. The mean values were used for continuous variables, while frequencies and percentages were employed for dummy variables.

1. Descriptive statistics of variables

Table 2 illustrates the descriptive statistics of the variables. The gender of the respondents indicates that 61.3% of the

participants are male, while 38.7% are female. Regarding marital status, 65.5% of the respondents are married, while the remaining 34.5% are unmarried. The educational background of the respondents is categorized into three groups: no formal education, formal education up to high school, and tertiary education. The survey results reveal that 42.6% of respondents have completed tertiary education at either colleges or universities. Similarly, 28.3% of respondents have formal education but do not hold a diploma certificate or degree, while 28.3% have no formal education.

The respondents were given the opportunity to categorize their income level in comparison to their counterparts. This approach was chosen because in rural areas, (1) some individuals, particularly farmers, may not have an exact understanding of the fair market value of their assets, and (2) people may be reluctant to disclose the specific amount of their property due to cultural perceptions. Thus, the best way to gather information about their wealth is by allowing them to make comparisons. Based on the results, 55.6% of respondents have a low income, 27.5% have a medium income, and 16.9% have a high income compared to their counterparts.

Regarding the source of income, 42.3% of participants in this study generate income from farming activities, 31.4% depend on a single income source (a mix of sources), 3.5% rely on business activities, and 22.5% are employed. Similarly, the majority of respondents in this survey (52.2%) confirmed that they do not possess assets that can be used as collateral for a loan. However, most respondents (65.2%) stated that group lending procedures help in gaining greater access to finance, while 34.5% disagreed. In terms of the lending process, 76.8% of respondents indicated that the microfinance lending process is lengthy and time-consuming, while 23.2% agreed that it is short. According to the survey, 71.8% of respondents confirmed that the interest rate applied to loans is high, while 28.2% stated that it is not excessively high.

Similarly, according to the survey results, 64.9% of the respondents indicated that the loan repayment rate is low, while 35.1% disagreed with this statement. In terms of the cost of processing loans or operating costs, 62.9% of respondents replied that the cost is high, while 37.1% stated that it is not costly to process loans. Regarding the distance from microfinance institutions, the majority of respondents (58.2%) reported being distant from these institutions, while 41.8% stated that they are near to them. It is evident that there is a limited number of microfinance institutions in rural areas. In line with this, participants were asked whether the availability of a limited number of microfinance institutions affected their access to credit. The survey results showed that 68.2% of respondents agreed that the availability of a limited number of microfinance institutions affected their access to credit. Another aspect addressed in the survey was the adequacy of the loan amount that participants can apply for. The majority of respondents (66.5%) replied that the loan amount is not adequate.

2. Empirical results

The empirical results for the model that determines access to credit among rural residents are presented in the following table. Before running the regression analysis, a multicollinearity test was conducted to examine whether the variables have a strong correlation with each other. The variance inflation factor (VIF) results indicate that there is no strong correlation among the variables.

A logistic regression was performed to identify the effects of variables on the likelihood of access to credit in rural areas. The overall model is statistically significant (X2(21) = 64.215, p<0.001), explaining 54% of the variation in access to credit (Negelkerke R2) and correctly predicting 66.8% of cases.

Several variables, including gender, marital status, collateral, lending procedure, group lending, high interest, distance, number of dependents, and the availability of a limited microfinance institution, have a significant effect on the likelihood of access to credit for rural residents in the study area.

From Table 4, the gender of respondents shows a significant positive coefficient (B=1.028). The logistic regression results indicate that there is a positive association between gender and access to credit. Gender contributes to the variance in the probability of accessing credit. Being male increases the likelihood of accessing credit by 2.794 times in rural areas. Males are 2.794 times more likely to access credit compared to females. Women, on the other hand, are less likely to access credit than men. In developing countries, especially in rural areas, women often have fewer opportunities to control economic activities within their communities (Kiros et al., 2020). Women who deviate from traditional gender roles by adopting a more independent and entrepreneurial approach in their economic lives face challenges due to societal norms and expectations (Kiros A., 2012). These findings are consistent with previous studies by Komicha (2007), Mpuga (2010), Ajagbe et al. (2012), Tigist et al. (2019), Baiyegunhi and Fraser (2014), Mebrate (2015), Gbigbi (2017), and Julien et al. (2021).

The results from the model indicate a significant and negative association between the marital status of respondents and access to credit, with a coefficient of -0.660. This suggests that married individuals have a lower probability of accessing credit in rural areas compared to unmarried individuals. The odds of being married are 0.517 times less likely to have credit access than unmarried individuals. This could be due to the fact that unmarried individuals are more likely to seek out borrowing opportunities. These findings differ from previous studies such as Hung Van Vu (2022) and Akpandjar et al. (2013), which found a positive effect of marital status on access to credit.

The educational background of respondents also has an effect on the likelihood of access to credit. Education is represented as a dummy variable with three levels: no formal education, formal education up to primary and secondary school, and tertiary school. No formal education serves as the reference group. From the regression results, having a formal education background up to primary and secondary school is positively and significantly associated with access to credit, with a likelihood ratio of 1.809. This implies that individuals with formal education up to primary and secondary school are 1.809 times more likely to have access to credit compared to those with no formal education. Tertiary school refers to respondents who have completed college education. It is a highly significant variable that affects the likelihood of access to credit, with an odds ratio of 1.318. This means that individuals with tertiary education are 1.318 times more likely to have access to credit than those with no formal education. Therefore, education is a significant variable that contributes to the likelihood of accessing credit. These results are consistent with previous studies by Tang et al. (2010), Thi Thanh Tu et al. (2015), Geleta et al. (2018), Samuel Semma Waje (2020), and Hung Van Vu et al. (2021).

The regression analysis reveals that the level of income is a significant variable that affects the likelihood of accessing

credit. The level of income is categorized into three levels: low, medium, and high, with low income serving as the reference category. The econometric results indicate that respondents with medium-level income have a positive and significant association with credit access. This implies that individuals with medium-level income are 1.066 times more likely to have access to credit compared to those with low-level income. The medium level of income contributes to the variation in the probability of accessing credit. Previous studies by Akudugu (2012), Khan and Hussain (2011), and Komicha (2007) also support the positive influence of household income, such as farm size, on credit access.

In contrast, the high-level income variable has a negative coefficient but is still significant. The odds of high-level income are 0.393, indicating that individuals with high income are less likely to have access to credit compared to those with low income. This could be attributed to the fact that individuals with high income may have a tendency to rely on their own financial resources. This finding aligns with Duflo et al. (2008), who found that the presence of livestock negatively affects the demand for credit.

An interesting finding in this study pertains to the source of income. While agriculture (farming) remains the primary source of income in rural areas, people also engage in various other economic activities. The source of income variable in the table is categorized into four groups: farming, small business, employment, and a mix of different sources. Farming serves as the reference category.

The results indicate that only two variables, employment and a mix of different sources, are significant in relation to credit access. Small business, on the other hand, does not contribute to the variation in the probability of accessing credit. This suggests that small business alone is not a significant economic activity in rural areas, as individuals tend to engage in it alongside other economic activities, primarily farming. Individuals involved in a mix of different economic sources have a higher probability of accessing credit compared to those solely engaged in farming. The odds for this group are 1.219, meaning they are 1.219 times more likely to have credit access than those engaged only in farming activity. Similarly, the odds for employment are 2.149, indicating that employed individuals are 2.149 times more likely to have credit access than those engaged solely in farming activity. Chaudhuri (2011) also highlights that the occupation of individuals is a key factor influencing their likelihood of obtaining loans from microfinance institutions.

The presence of collateral assets is also a significant variable that affects the likelihood of accessing credit. The empirical results show a positive (B=0.529) and significant association between having collateral assets and credit access. Having an asset that can be pledged increases the likelihood of accessing credit by 1.698. The odds of having such an asset are 1.698, meaning that the odds of having collateral assets are 1.698 times higher compared to not having any assets. It is evident that collateral plays an important role in credit access. Mpuga (2008) argues that the value of assets, such as buildings and land, rather than the number of assets, strongly influences credit demand.

The lending procedure variable is significant and has a negative coefficient. The econometric analysis reveals a negative and significant association between the lending procedure and credit access. This suggests that a longer lending procedure is less likely to result in credit access compared to a shorter procedure. The odds of a long lending procedure are 0.817. This finding aligns with the research of Nouman et al. (2013), Mebrate (2015), Assifaw & Adeba (2016), and Julien et al. (2021). Similarly, group lending is negatively associated with credit access and has a significant coefficient.

The odds of group lending are 0.896, indicating that credits with group lending have a lower probability of accessing formal financial credit compared to individual lending. This finding is consistent with the studies of Nouman et al. (2013), Muhongayirea et al. (2013), Dube et al. (2015), Mebrate (2015), Assifaw and Adeba (2016), and Masaood and Keshav (2020).

According to the table, the results regarding interest rates indicate a significant association with access to credit, but the association is negative. The coefficient for the interest rate is negative, suggesting that credits with high interest rates have a lower probability of accessing formal financial credit compared to those with low interest rates. The odds of the interest rate are 0.668, meaning that higher interest rates decrease the likelihood of credit access. This finding is consistent with previous studies such as Briones (2009), Akudugu (2012), Komicha (2007), shewit et al. (2020), and Kiros (2022).

The econometric results reveal a positive and significant relationship between distance from the institution and credit access. The coefficient for distance is positive, indicating that proximity to a microfinance institution increases the likelihood of accessing credit. Being near to a microfinance institution can improve the access to credit by 1.782 times. In other words, the odds of being near a microfinance institution are 1.782 times (78.2%) more likely to access credit compared to being distant. Kiros et al. (2022) found an insignificant association, while Akpan et al. (2013) and Khan and Hussain (2011) found a negative association.

The coefficient for the number of dependents is negative, suggesting that individuals with fewer dependents have a higher probability of accessing formal financial credit compared to those with more dependents. A one-unit increase in the number of dependents decreases the likelihood of credit access by 0.817. This may be because individuals with a higher number of dependents are less inclined to borrow funds for consumption purposes. This finding contradicts previous studies such as Komicha (2007) and Messah (2011), which found a negative influence. It is also inconsistent with Shewit Kiros et al. (2022), Baiyegunhi and Fraser (2014), Mebrate (2015), and Assifaw and Adeba (2016), which suggest that the number of dependents has a positive effect on credit demand.

The limited number of microfinance institutions is another factor that affects the likelihood of accessing credit. The coefficient for the limited number variable is negative (-0.327), with an odds ratio of 0.721. This suggests that credit access in areas with a limited number of MFIs is less likely compared to areas with a greater number of MFIs. In the study area, there is a scarcity of microfinance institutions, leaving the respondents with limited options to apply for credit. There is only one microfinance institution and a limited number of SACCOS. Schoof (2006) argues that an insufficient number of financial institutions offering credit services to SMEs hinders the development of industries.

The variables such as age of respondents, adequacy or size of loan, operating cost, rigid repayment rate, and low repayment rate were found to be insignificant in this study.

5. Conclusion

In conclusion, the objective of the study was to identify the factors influencing access to credit in the rural area of Bilate Zuria District, Sidama Region, Ethiopia. Data was collected through self-administered questionnaires from selected rural kebeles, and analysis was conducted using both descriptive statistics and binary logit models in SPSS version 21. The study found that variables such as gender, marital status, collateral, lending procedure, group lending, high interest, distance, number of dependents, and the availability of limited microfinance institutions significantly affect the access to credit for rural residents in the study area.

Appendix

Table 2. Descriptive statistics of respondents

Gender of respondents		Frequency	Percent	
	Female	149	38.7	
	Male	236	61.3	
	Total	385	100	
Marital status of respondents		Frequency	Percent	
	Unmarried	133	34.5	
	Married	252	65.5	
	Total	385	100	
Level of income of respondents when compared with their surroundings		Frequency	Percent	
	Low	214	55.6	
	Medium	106	27.5	
	High	65	16.9	
	Total	385	100	
Economic activity that respondents engaged		Frequency	Percent	
	Agricultural products	88	22.9	
	Small business	58	15.1	
	Employment	76	19.7	
	Mix of source	163	42.3	
	Total	385	100	
Whether respondents have asset that can be pledged for		Frequency	Percent	
	No	201	52.2	
	Yes	184	47.8	
	Total	385	100	
Whether the lending process is short and precise		Frequency	Percent	
	No	249	64.7	
	Yes	136	35.3	
	Total	385	100	
Do group lending procedures help to get more access to finance		Frequency	Percent	

	No	134	34.8	
	Yes	251	65.2	
	Total	385	100	
Whether the interest rate applied on the loan is high		Frequency	Percent	
	No	147	38.2	
	Yes	238	61.8	
	Total	385	100	
The repayment rate of customers is low		Frequency	Percent	
	No	135	35.1	
	Yes	250	64.9	
	Total	385	100	
Whether the repayment period and collection procedure is rigid		Frequency	Percent	
	No	154	40	
	Yes	231	60	
	Total	385	100	
Whether the cost of processing the loan is high		Frequency	Percent	
	No	143	37.1	
	Yes	242	62.9	
	Total	385	100	
Distance from microfinance		Frequency	Percent	
	Distant	224	58.2	
	Near	161	41.8	
	Total	385	100	
Whether the availability of a limited number of microfinance affects access to credit		Frequency	Percent	
	No	160	41.6	
	Yes	225	58.4	
	Total	385	100	
The size of loan that respondents can apply for is limited or inadequate		Frequency	Percent	
	No	101	26.2	
	Yes	257	66.8	
	Total	358	93	

Table 3. Summary of model and data fitness

Table 3.1. Omnibus tests of model coefficients

		Chi-square	df	Sig.
Step 1	Step	64.215	21	.000
	Block	64.215	21	.000
	Model	64.215	21	.000

Table 3.2. Model summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	426.657[a]	.164	.540

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than.001.

Table 3.3. Classification table[a]

Observed		Predicted		
		access to credit		Percentage correct
		if no credit access	yes, if access to credit	
access to credit	if no credit access	84	73	53.5
	yes, if access to credit	46	155	77.1
Overall Percentage				66.8

a. The cut value is .500

Table 4. Regression output

	B	S.E.	Wald	Df	Sig.	Exp(B)
Gender	1.028	0.248	17.224	1	0.000	2.794
Education			3.518	2	0.172	
Formal primary and secondary school	0.593	0.318	3.485	1	0.062	1.809
Tertiary school	0.276	0.319	0.751	1	0.006	1.318
Marital status	-0.66	0.26	6.445	1	0.011	0.517
Level of income			8.205	2	0.017	
Medium	0.064	0.283	0.052	1	0.82	1.066
High	-0.934	0.348	7.186	1	0.007	0.393
Source of income			6.106	3	0.107	
Small business	0.324	0.392	0.685	1	0.408	1.383
Employment	0.765	0.326	5.502	1	0.019	2.149
Mix of either source	0.198	0.37	0.286	1	0.013	1.219
Collateral asset	0.529	0.245	4.655	1	0.031	1.698
Lending procedure	-0.202	0.257	0.617	1	0.032	0.817
Group lending	-0.11	0.252	0.192	1	0.061	0.896
Interest	-0.494	0.242	4.169	1	0.041	0.61
Low repayment	0.057	0.268	0.045	1	0.832	1.059
Rigid repayment period	-0.165	0.293	0.317	1	0.573	0.848
Operating cost	0.185	0.313	0.348	1	0.555	1.203
Distance	0.578	0.261	4.907	1	0.027	1.782
Number of microfinance	-0.327	0.248	1.744	1	0.087	0.721
Size of loan	-0.042	0.267	0.025	1	0.875	0.959
Age	-0.019	0.016	1.415	1	0.234	0.982
Number of dependents	-0.203	0.068	8.819	1	0.003	0.817

References

- Chowdhury, S. (2017). Microfinance and rural non-farm employment in developing countries.*IZA World of Labor*, (350).
- El-Komi, M. S. (2010). Poverty: Alleviation through microfinance and implications on education. *The University of Texas at Dallas*.
- Prathap, B. N., Subrahmanya, K. C., & Harisha, B. S. (2018). Microfinance Delivery–Challenges and Remedies. *International Journal of Management Studies*, 3(9), 138.
- Kiros, S., & Meshesha, G. B. (2022). Factors affecting farmers' access to formal financial credit in Basona Worana District, North Showa Zone, Amhara Regional State, Ethiopia. *Cogent Economics & Finance*, 10(1), 2035043.
- Kiros, H. (2012). Determinants of Rural Households Demand for and Access to Credit in Microfinance Institutions: The Case of Alamata Woreda, Ethiopia. *Wageningen University Research Center*.
- Boateng, A. A. (2015). An examination of challenges and prospects of microfinance institutions in Ghana.*Journal of*

Economics and Sustainable Development, 6(4), 52-60.

- Alemayehu, M., & Lemma, M. (2014). Assessment of factors affecting the performance of microfinance institutions: The case of Hawassa City. *Journal of Business and Administrative Studies*, 6(1), 1-46.
- Geremewe, Y. T. (2019). The role of microfinance institution for poverty reduction in Ethiopia.*Journal of Economics and Sustainable Development*, 10(5), 36-44.
- Mafimisebi, T. E., Oguntade, A. E., & Mafimisebi, O. (2010). Re-engineering agriculture for enhanced performance through financing. *Journal of Economics, Finance & Administrative Science*, 15(29).
- Muayila, K. H., & Tollens, E. (2012). Assessing the impact of credit constraints on farm household economic welfare in the hinterland of Kinshasa, Democratic Republic of Congo. *African Journal of Food, Agriculture, Nutrition and Development*, 12(3), 6095-6109.
- Admassie, A. (2004, December). A review of the performance of agricultural finance in Ethiopia: Pre- and post-reform periods. In *International Conference on Agrarian Constraints and Poverty Reduction*(pp. 17-18).
- Duga Chaka, K., & Komicha, H. (2017). Determinants of access to and socio-economic impacts of rural financial services in Ethiopia: The case of Doba and Karsa districts of Oromia Region (Doctoral dissertation, Haramaya University).
- Chipeta, M., Emana, B., & Chanyalew, D. (2015). Ethiopia's Agriculture Sector Policy and Investment Framework (2010–2020) External Mid-Term Review. Government of Ethiopia: Addis Ababa, Ethiopia, 84.
- Ali, S. H., & Alemu, S. (2018). The performance of Ethiopian microfinance institutions, challenges and prospects. *Karadeniz Teknik Üniversitesi Sosyal Bilimler Enstitüsü Sosyal Bilimler Dergisi*, 8(16), 307-324.
- Tu, T. T. T., Viet, N. Q., & Loi, H. H. (2015). Determinants of access to rural credit and its effect on living standard: Case study about poor households in northwest, Vietnam (Note 1). *International Journal of Financial Research*, 6(2).
- Duy, V. Q. (2012). Impact of differential access to credit on long and short-term livelihood outcomes: Group-based and individual microcredit in the Mekong Delta of Vietnam (No. 86). CAS Discussion paper.
- Biyase, M., Zwane, T., Mncayi, P., & Maleka, M. (2023). Do technological innovation and financial development affect inequality? Evidence from BRICS countries. *International Journal of Financial Studies*, 11(1), 43.
- Vu, H. V., & Ho, H. (2021). Analysis of factors influencing credit access of Vietnamese informal laborers in the time of COVID-19 pandemic. *Economies*, 10(1), 8.
- Ajah, E. A., Igiri, J. A., & Ekpenyong, H. B. (2017). Determinants of access to credit among rice farmers in Biase Local Government Area of Cross River State, Nigeria. *Global Journal of Agricultural Sciences*, 16(1), 41-49.
- Odoom, D., Fosu, K. O., Ankomah, K., & Amofa, M. B. (2019). Exploring the contributions of microfinance institutions to the Ghanaian economy: A study at Takoradi. *Journal of Economics and Sustainable Development*, 10(1), 77-90.
- Waje, S. S. (2020). Determinants of access to formal credit in rural areas of Ethiopia: Case study of smallholder households in Boloso Bombbe district, Wolaita zone, Ethiopia. *Economics*, 9(2), 40-48.
- Kiros, S., & Meshesha, G. B. (2022). Factors affecting farmers' access to formal financial credit in Basona Worana District, North Showa Zone, Amhara Regional State, Ethiopia. *Cogent Economics & Finance*, 10(1), 2035043.
- Genanu, S. (2020). Access to credit and its determinants in Gubalafto district.*International Journal of Advanced Research in Management and Social Sciences*, 9(12), 1-16.

- Parker, J. (2000). Microfinance Best Practices: Initial survey results. The intersection of Microfinance and HIV/AIDS – glimmers from Africa. In J. Parker (Ed.), *The MBP Reader on Microfinance and HIV/AIDS: First steps in speaking out* (pp. 1-14). Bethesda, Maryland: Microenterprise Best Practices.
- Noreen, U., Imran, R., Zaheer, A., & Saif, M. I. (2011). Impact of microfinance on poverty: A case of Pakistan.*World Applied Sciences Journal*, 12(6), 877-883.
- Alemayehu, M., & Lemma, M. (2014). Assessment of factors affecting the performance of microfinance institutions: The case of Hawassa City. *Journal of Business and Administrative Studies*, 6(1), 1-46.
- Nouman, M., Siddiqi, M., Asim, S., & Hussain, Z. (2013). Impact of socio-economic characteristics of farmers on access to agricultural credit. *Sarhad Journal of Agriculture*, 29(3), 469-476.
- Omonona, B. T., Lawal, J. O., & Oyinlana, A. O. (2010). Determinants of credit constraint conditions and production efficiency among farming households in Southwestern Nigeria (No. 308-2016-5022). *Sarhad Journal of Agriculture*, 29(3), 1-14.
- Gaiha, R. (2005). Does the Employment Guarantee Scheme benefit the rural poor in India? Some recent evidence. *Asian Survey*, 45(6), 949-969.
- Bauchet, J., Marshall, C., Starita, L., Thomas, J., & Yalouris, A. (2011). Latest findings from randomized evaluations of microfinance.
- Nouman, M., Siddiqi, M., Asim, S., & Hussain, Z. (2013). Impact of socio-economic characteristics of farmers on access to agricultural credit. *Sarhad Journal of Agriculture*, 29(3), 469-476.
- Omonona, B. T., Lawal, J. O., & Oyinlana, A. O. (2010). Determinants of credit constraint conditions and production efficiency among farming households in Southwestern Nigeria. *Sarhad Journal of Agriculture*, 29(3), 1-14.
- Duga Chaka, K., & Komicha, H. (2017). Determinants of access to and socio-economic impacts of rural financial services in Ethiopia: The case of Doba and Karsa districts of Oromia Region (Doctoral dissertation, Haramaya University).
- Tirfe, Zegeye, & Hussien Hamda Komicha.
- Bing, Z., Guo-yu, Ping-gui, Z., Yang, C., & Shuai, Y. (2008). Empirical study on the financial repression of rural households' debit and credit and the effects on their welfare in less developed regions – Take Suqian city of Jiangsu province as an example. *Journal of Modern Accounting & Auditing*, 4(12), 27-34.
- Taylor, S., & Boubakri, N. (2013). Women and finance: Unlocking Africa's hidden growth reserve. Financial Inclusion in Africa. African Development Bank (AfDB), Tunis Belvédère Tunisia.
- Kiros, H. (2012). Determinants of Rural Households Demand for and Access to Credit in Microfinance Institutions: The Case of Alamata Woreda, Ethiopia. Wageningen University Research Center.
- Mpuga, P. (2010). Constraints in access to and demand for rural credit: Evidence from Uganda.*African Development Review*, 22(1), 115–148.
- Ajagbe, F. A. (2012). Analysis of access to and demand for credit by small-scale entrepreneurs: Evidence from Oyo State, Nigeria. *Journal of Emerging Trends in Economics and Management Sciences*, 3(3), 180-183.
- Admassie, A., & Abebaw, D. (2014). Rural poverty and marginalization in Ethiopia: A review of development interventions. *Marginality*, 269.

- Akpandjar, G. M., Quartey, P., & Abor, J. (2013). Demand for financial services by households in Ghana.*International Journal of Social Economics*, 40(5), 439-457.
- Silong, A. K. F., & Gadanakis, Y. (2020). Credit sources, access, and factors influencing credit demand among rural livestock farmers in Nigeria. *Agricultural Finance Review*, 80(1), 68-90.
- Masaood, M., & Keshav, L. (2020). Factors affecting farmers' access to formal and informal credit: Evidence from rural Afghanistan. *Journal of Sustainability*, 12(1268), 1-16.
- Assifaw, L., & Adeba, G. (2016). Analysis of factors affecting smallholder farmers' access to formal credit in Jibat district, West Showa Zone, Ethiopia. *International Journal of African and Asian Studies*, 25(1), 43-53.
- Spio, K. (2006). The impact and accessibility of agricultural credit: A case study of small-scale farmers in the Northern Province of South Africa (Doctoral dissertation, University of Pretoria).
- Schoof, U. (2006). Stimulating Youth Entrepreneurship: Barriers and Incentives to Enterprise Start-Ups by Young People. ILO, SEED Working Paper No. 76. International Labour Organization. Geneva.
- Akudugu, M. A. (2012). Estimation of the determinants of credit demand by farmers and supply by rural banks in Ghana's Upper East Region. *Asian Journal of Agriculture and Rural Development*, 2(2), 189-200.
- Khan, S., & Sajid, M. R. (2011). Women's empowerment through microcredit: A case study of district Gujrat, Pakistan. *Academic Research International*, 1(2), 332.