

# DETERMINANTS OF CREDIT ACCESS AMONG RICE FARMERS IN RURAL CAMEROON

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**Abstract.** Inadequate access to credit remains a major constraint to agricultural production in Africa. However, not all farmers face this difficulty. This article assesses the determinants of agricultural credit access among rice farmers who are members of the Ngoketunja Cooperative Credit Union in the Northwest Region of Cameroon. A structured pretested questionnaire was administered to 126 randomly selected credit beneficiaries and non-beneficiaries, all of whom are members of the study credit union. Binary logistic regression was performed, with the dependent variable (access to microcredit) being 1 (yes) if the respondent received a loan during the 2018/2019 farming season, and 0 (no) otherwise. 12 explanatory variables were used in the analysis, which adopted a 10% level of significance. Statistically significant relationships were observed between farm size, inputs, farm output, and access to loans, suggesting that access to microcredit has a positive impact on agricultural production. The three key factors facilitating access to microcredit were farming experience ( $B = 0.38$ ,  $p = 0.06$ ), the educational level of the farmer ( $B = 0.81$ ,  $p = 0.06$ ), and the diversion of loans to solve other problems ( $B = 1.64$ ,  $p = 0.06$ ). Based on these results, we recommend better financial inclusion of rice farmers in microcredit schemes to increase local rice production and reduce imports in Cameroon.

**Keywords:** access to credit, agricultural production, Cameroon, rice farmers, influencing factors

## INTRODUCTION

Access to credit for farmers is an issue of interest to agribusiness entrepreneurs, agricultural economists, and

development practitioners. This is no surprise, given the truism that access to credit can increase farm productivity, market integration, and poverty reduction (Mensah et al., 2019; Alhassan et al., 2020). Microfinance was originally conceived as a suitable alternative source of financial services for the poor (currently estimated at over 2 billion people), who lack adequate collateral to access similar services in formal financial institutions, such as Banks (Thunstrom, 2021). Microfinance is therefore pro-poor as it improves the financial serviceability of the poor (particularly women), who are incapable of accessing the formal financial market and are exposed to multiple forms of health, market, and climate-related risks (Balgah et al., 2020). Therefore, microfinance institutions (MFIs) financially empower the poor through financial inclusion by offering fundamental services such as savings and loans, insurance, and money transfer (Vik, 2010). These services are particularly relevant for economic empowerment and poverty reduction for the poor in developing countries.

The pro-poor orientation of microfinance has stimulated unprecedented growth in serviceability and capital mobilization, especially in the last 3 decades. Estimates suggest that there are over 10 000 MFIs servicing about 140 million microfinance clients globally, 80% of whom are women. The loan portfolio stands at US\$ 124 Billion, with a pre-COVID-19 pandemic repayment rate of 98% (Thunstrom, 2021). Despite this impressive performance, access to agricultural finance remains extremely weak in many African countries, constraining

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agricultural productivity. Where agriculture-dependent clients have some access to microcredit, empirical experiences of the effects of microcredit access on agricultural performance have generally been impressive.

Access to credit has been reported as a key lever for agricultural investment, productivity increases, technology adoption, market participation, and price transmission in many countries across Africa (Alhassan et al., 2020; Osabohien et al., 2020); with its absence impeding agricultural productivity (Assogba et al., 2017; Djoumessi et al., 2018; Mensah et al., 2019; Ofor et al., 2021). Few studies have reported negative effects of access to agricultural credit in terms of increased loan delinquency and lower productivity, mainly resulting from unforeseen climate-related risks (e.g., floods and droughts), price volatility, and unstable socio-political environments (Tetteh et al., 2021; Maniriho et al., 2021). Overall, there is a consensus among African academics that the benefits of credit access for agriculture outweigh the costs, especially for smallholder farmers (De Aghon and Murdoch, 2005; Thunstrom, 2021). In addition, access to credit can enhance social objectives such as poverty alleviation, financial inclusion, and pro-poor empowerment (especially of women).

In Cameroon, like in many African countries, the bulk of its population lives in rural areas, where the majority – particularly women (~70%) – is engaged in subsistence agriculture. Formal microcredit services are limited, and many credit-constrained farmers tend to rely on informal, community-based borrowing arrangements with exorbitant interest rates (Djoumessi et al., 2018). Meanwhile, agriculture remains the backbone of Cameroon's economy, contributing over 45% to the GDP, employing about 90% of the rural population, and providing a livelihood to over 70% of its population (Mbuli et al., 2021). Ironically, Cameroon remains a net importer of food, with rice and maize topping the list (576,949 tons and 30,000 tons/year respectively); rice and maize imports represent combined expenditure of FCFA 150 billion (~US\$ 300 million) (Business in Cameroon, 2020). Food imports persist, despite multiple government and NGO efforts to promote local production and the existing production potential in the country.

A key impeding factor for local production is the extremely limited access of farmers to microcredit. A recent study in the Northwest Region of Cameroon suggests that almost 37% of (mostly farming) households are credit-constrained, while 63% are not (Atamja and Yoo, 2021).

While this situation is widespread, there is limited information on why some farmers have access to credit and others do not, when credit services are available to both.

This study bridges this knowledge gap by exploring the factors influencing credit access in Cameroon, using the case study of a microfinance institution in an important rice-growing region (the Ndop plains) in the Northwest Region of Cameroon. We contribute to bridging this knowledge gap by identifying the benefits of access to credit, as well as the factors that explain why not all farmers who are homogenous in structure and function (rice farmers who are all members of the same microfinance institution) obtain credit when they apply for it.

## REVIEW OF THE DETERMINANTS OF MICROCREDIT ACCESS

Empirical efforts have been made to identify the factors influencing access to microcredit, especially for farmers in different settings. For instance, Assogba et al. (2017) found out that literacy, educational level, cooperative membership, guarantor, collateral, and interest rate influenced access to credit among smallholder farmers in Benin, with a 10.9% and 3.9% likelihood of increase for each unit increase in educational level and local language literacy respectively. Membership of farmers' cooperatives increased access to credit by 31% and having a guarantor by 18.9%. Interestingly, collateral availability and high-interest rates decreased credit access by 12.4% and 11.7% respectively. Based on these results, the authors concluded that it is necessary to have educational and literacy promotion, cooperative membership, and reduced interest rates to increase access to credit for smallholder farmers in Benin.

Adejoh and Adah (2018) researched credit access determinants of small-scale farmers in Kogi State in Nigeria. Analyzing data from 120 randomly selected respondents, they observed that almost 77% of agricultural credit was provided by informal money lenders. Membership in a cooperative society, experience, farm size, contact to extension services, and distance to credit source significantly influenced access to credit for small-scale farmers. Significantly higher farm incomes were recorded among farmers with formal credit access compared to those without such access. Inadequate collateral security, bureaucracy, and high-interest rates were the three major constraints to accessing formal credit, while high-interest rates and low lending levels

constrained access to informal credit. The study recommended policies that deal with the constraints and enhance credit access facilitators so that rural farmers can have better access to the credit facilities needed to increase agricultural production.

In a more recent study, Offor et al. (2021) revealed that region of residence, educational level, farm size, age, borrowing experience, social capital, and membership in organizations positively and significantly influenced microcredit access and volume in the Niger Delta Region in Nigeria. Total household income, interest rate, and gender were negatively and significantly related to access to microcredit. The scholars concluded that farmers' cooperatives and land reform policies that facilitate access to land for smallholder farmers are likely to increase their access to credit.

Applying multiple linear regression analysis on data collected from 100 cocoa farmers in the Ahafo Region of Ghana, Mensah et al. (2019) observed that farmers' age, marital status, educational level, farming experience, and family size significantly influenced access to credit. High-interest rates and the need for a guarantor were key negative determinants of access to credit. Based on these results, the study recommended policies supporting the expansion of formal and semi-formal financial credit portfolios that embrace cocoa farmers, deriving alternative funding opportunities that put less emphasis on collaterals on a reduced interest rate as central to improving credit access, and reducing poverty among cocoa farmers in the Ahafo Region of Ghana.

Ongwech et al. (2020) examined the determinants of credit access in Kinangop Sub County, where despite the presence of many credit service providers, many smallholder dairy farmers still experienced limited access to financial services. Applying a binary logistic regression analysis on data from 230 dairy farmers, it was observed that marital status, years of schooling, savings frequency, occupation, financial education, association membership, and numbers of dairy cattle were significant credit access determinants. Based on these results, the study recommended farmer education – enhancing policies for better access to credit geared towards enhancing educational attainment of farmers would be vital to enhancing credit accessibility for farmers in Kinangop Sub County. Becoming a member of a farmer-based association curbs collateral barriers and bureaucratic processes that hinder smallholder dairy farmers' access to existing credit schemes.

Using data from a sample of 180 farm households, Chandio and Jiang (2018) applied a probit regression model to identify factors influencing access to credit in the Sindh province of Pakistan. Access to formal agricultural credit was found to be very low, with distance to the formal credit institutions, lengthy lending procedure, time lag, and high-interest rates as major constraints. Land ownership was found to reduce the formal credit access constraints. Formal credit institutions showed a lending preference of agricultural credits to educated and younger farmers, who were more likely to adopt innovative agricultural technology that enhances farm productivity.

Despite the importance of agriculture in Vietnam for livelihoods and economic development, access to credit continues to be a stumbling block to the growth of the agricultural sector. Linh et al. (2019) combined a review of the literature with empirical evidence to study the constraints on credit access and the socio-economic impacts of credit access in Vietnam and briefly compared the results with those of some developing countries. The study indicated a plethora of factors that influenced farmers' access to credit, such as age, household size, household income, dependency ratio, distance to bank, loan duration, interest rate, loan processing, loan size, group membership, and gender. Education was one of the most significant determinants of credit accessibility in many developing countries.

In a study of vegetable farmers in the Southwest Region of Cameroon, Djoumessi et al. (2018) concluded that the spread/expansion of lending agencies, membership to farmers' associations, and access to agricultural extension services increased both access to and demand for credit for the studied vegetable farmers. As such, they recommended that small-scale (female) farmers be encouraged and supported to form associations to enhance information sharing and benefits from the advantage of non-rationing credit.

In a more recent study, Bin et al. (2021) reported that collateral security, interest rates, experience, corrupt practices, and loan size were key determinants of credit access in Cameroon. Overall, access to credit had positive effects on the sustainability of small and medium-sized enterprises.

Additionally, interesting determinants of access to credit reported in other studies include difficulty to fulfill loan access criteria (Conroy, 2003), lack of collateral, and financial literacy.

While there is some correlation between credit access determinants across many studies (for example education, experience, and to some extent membership in associations), differences are also observed. For instance, some of the reviewed empirical studies contend that income positively influences access to formal credit (Chandio and Jiang, 2018), while others report the contrary (Offor et al., 2021). In Cameroon, Djoumessi et al. (2018) reported the significant role of access to agricultural extension services in influencing credit access. This is not mentioned by Bin et al. (2021), who rather noted the role of corruption and loan size in inhibiting credit access.

Differences across retained case studies echo the need for more context-specific empirical studies to establish concrete trends of specific relevance to policymakers and farmers. In addition, the studies do not clearly explain why some farmers with very similar characteristics have access to credit while others do not. It is based on this logic that we have analyzed the determinants of microcredit access for farmers in the Northwest Region of Cameroon.

## METHODOLOGY

### The study area and microfinance institution

This study focuses on the Ndop Central Sub-Division, which is one of the three Sub-Divisions of Ngoketunjia Division in the Northwest Region of Cameroon, with an estimated population of about 30,500 inhabitants. It is made up of four villages, namely Bamunka, Bamali, Bambalang, and Bamessing (Tumenta et al., 2021). Subsistence and commercial rice production has remained the most important agricultural activity in the sub-division for over 5 decades (Fogwe and Nghengwa, 2014). Increasing demand for farm inputs such as fertilizers, improved rice seeds, and pesticides have motivated the establishment of over 6 MFIs in the research area, including the Ngoketunjia Cooperative Credit Union – NgoCCUL Ltd (Tumenta et al., 2021). Despite the exponential numerical growth in MFIs in the study area, access to credit continues to constrain agricultural production and yields, even for clients with membership of the same financial institutions (Kometa and Mua, 2017).

This study was carried out on NgoCCUL Ltd, with its Head Office in Bamunka-Ndop. The purposive choice of this credit union was guided by two main factors: firstly,

it has existed since 2003. The longevity of the organization justifies the research as it is the first choice MFI for many rice farmers. As of 2014, it was serving over 65 percent of all the clients in the study area (Fogwe and Nghengwa, 2014). Secondly, NgoCCUL Ltd is a result of the merger of five credit unions which have been operating in the area, namely the Bamunka Credit Union, created in 1968, the Balikumbat Credit Union, created in 1971, and the Babungo, Bafaji, and Bamunkumbit Credit Unions. Thus, as the oldest MFI in the study area (Tumenta et al., 2021), its experience is particularly useful for this study.

### Sampling, data collection, and management

A sequential mixed-methods approach was adopted for the study, with quantitative data collection preceding the qualitative part. Mixed methods allow quantitative data to be interpreted more effectively, and qualitative results often provide additional meaning to the former, which can be of higher relevance to policymakers (Honig, 2019). In addition, sequential is preferred to parallel counterpart as the first data collection method informs the subsequent one, allowing analytical rigor to be obtained (Mele and Belardinelli, 2019).

One hundred and twenty-six (126) rice farmers who are members of the Ngoketunjia Cooperative Credit Union were purposively selected for the study. These are all rice farmers who applied for loans between January and December, 2019. Respondents were stratified into two groups: those who were granted agricultural loans (70) and those who were not (56). This was necessary to ensure that both microcredit beneficiaries and non-beneficiaries are represented in the sample. Stratification and selection were aided by the loan records of the credit union. A census of credit non-constrained clients (those who were granted loans) and constrained ones (those whose loan applications were rejected by the credit union) therefore formed the basis of this study. A structured (coded) and pretested questionnaire was then administered to credit-constrained and non-constrained clients of the selected MFI directly by the researchers, with the help of NgoCCUL Ltd staff, who connected the research team to the clients. Amongst others, quantitative data was collected on the characteristics of respondents. The recall method was used to collect data on farm investments and farm productivity for the 2018/2019 farming season as farmers generally did not keep written records of their farm activities.

Key informant interviews were also carried out with the loan officer and the credit union manager. Data collection took place between 5th May and 6th June, 2020. These were mainly focused on the factors influencing the granting of loans to the sampled rice farmers and on any difficulties that the microfinance institution was facing at the time of the research.

### Data analysis

Descriptive statistics were used to comparatively analyze differences in characteristics, farm investments, and agricultural income for loan beneficiaries and non-beneficiaries to identify any initial differences between loan beneficiaries and non-beneficiaries, given that both categories were members of the same study MFI. Binary regression analysis was then performed to identify the strongest factors influencing access to agricultural credit among clients of the study MFI.

The regression model for this study can be presented as follows:

$$C = \alpha + \beta_0 + \beta_1 X_1 + \beta_2 X_2 \dots + \beta_n X_n + e \quad (1)$$

where:

- $C$  – access to agricultural credit (1 = yes, 0 = no)
- $\beta_0 - \beta_n$  – regression coefficients
- $X_1 - X_n$  – independent variables influencing access to microcredit
- $\alpha$  – intercept term (constant)
- $e$  – error term.

The data was analyzed observing a 90% confidence interval due to the rather small sample size. Qualitative results were integrated into the process of analyzing the quantitative data.

## RESULTS AND DISCUSSION

### Sample description

This section presents a succinct comparative analysis of the demographic characteristics of respondents in this study by client type. This approach was adopted to identify any differences between loan beneficiaries and non-beneficiaries which might have accounted for differentiated access to agricultural credit.

As indicated in Table 1, no significant differences between loan beneficiaries and non-beneficiary rice farmers were found for mean age, farming experience, household size, or any other variable (level of education and mean savings), even if beneficiaries performed slightly better than non-beneficiaries across all the tested variables. This suggests that in general, beneficiaries tend to mirror non-beneficiaries in terms of demographic characteristics. It then becomes interesting to identify drivers for discriminative access to microcredit among these rice farmers, who are all members of the study MFI.

### Access to microcredit and effects on farm expenditures

Table 2 presents some selected farm variable costs for the 2018/2019 farming season, disaggregated by client type. Access to credit was found to have significant effects on farm expenses for credit beneficiaries across all expenditure items (fertilizer, hired labor, improved seeds, and capacity building) compared to credit-constrained clients ( $p = 0.00$ ). This is in line with other studies which state that access to microcredit increases agricultural investment in diverse contexts (e.g., Blasé, 1971; Ilebanmi, 1983; Osabohien et al., 2020), with

**Table 1.** Comparison of selected demographic characteristics by client type

Variable	Client type	Mean	Std. deviation	Std. error mean	t-distribution
Age	Beneficiary	37.7	10.6	2.26	$t = 0.46$
	Non-beneficiary	36.4	7.17	1.69	$p = 0.65$
Farming experience	Beneficiary	12.6	7.47	1.59	$t = 0.16$
	Non-beneficiary	12.3	6.44	1.52	$p = 0.87$
Household size	Beneficiary	6	2	0.46	$t = -0.31$
	Non-beneficiary	6	2	0.51	$p = 0.76$

Source: field survey, 2020.

**Table 2.** Comparative analysis of key variable costs for loan beneficiaries and non-beneficiaries

Cost item	Respondent category	Mean (FCFA)	Std. deviation	Std. error mean	F-test p-value
Fertilizer	Non-beneficiaries	60,910	32,750	6 982.63	$F = 10.9$
	Beneficiaries	279,110	449,160	105 867.4	$p = 0.00$
Hired labour	Non-beneficiaries	51,640	29,090	6 203.46	$F = 41.1$
	Beneficiaries	179,170	187,910	44 290.50	$p = 0.00$
Improved seeds	Non-beneficiaries	18,610	16,100	3 432.39	$F = 12.0$
	Beneficiaries	38,690	34,705	8 180.08	$p = 0.00$
Capacity building	Non-beneficiaries	1,410	2,170	463.65	$F = 17.9$
	Beneficiaries	3,830	4,960	1 169.46	$p = 0.00$

Note: 1 US\$ = ~FCFA (XAF) 584.457 ([www.xe.com/currencyconverter](http://www.xe.com/currencyconverter), 26/11/2021)  
Source: field survey, 2020.

the opposite observed among credit-constrained farmers (Djoumessi et al., 2018; Offor et al., 2021). It, however, contradicts the findings of Maniriho et al. (2021), who reported the opposite among small-scale farmers in Rwanda.

### Impact of access to microcredit on farm yields

Further descriptive analysis of the empirical data reveals that access to agricultural microcredit from the studied institution had a positive impact on the productivity and income of beneficiary rice farmers. For instance, the mean annual incomes from rice and maize production were significantly higher for loan beneficiaries than for non-beneficiaries (FCFA 758,940 and FCFA 220,640 for rice; and FCFA 480,670 and FCFA 161,320 for maize respectively,  $p = 0.00$ ). These results support contentions from previous studies (Kometa and Mua, 2017; Alhassan et al., 2020) that access to credit significantly increases agricultural incomes in developing countries.

### Determinants of access to agricultural credit

The descriptive results presented above clearly demonstrate that (1) there is no difference between loan beneficiaries and non-beneficiaries, and (2) access to credit has significant and positive effects on agricultural investments and farm incomes. This in principle should provide incentives for many farmers to apply for agricultural credit and for microfinance institutions to award such loans to needy farmers, given that high investment-high

return agriculture can potentially reduce loan defaults (Adejoh and Adah, 2018). However, not all farmers who apply for credit are awarded it. In the study MFI for instance, only 55.6% of applicants were awarded agricultural loans. Key informant interviews with the loans officer and the manager revealed that loan capital is not a limiting factor for loan disbursements. As the manager said (30 May 2020):

*“We are constantly looking for qualified members to whom loans can be awarded, given the huge stock of financial capital that we [the credit union] have. Gone are the days when liquidity was a problem. Members have understood the need for savings, and this provides us with enough capital for any types of financial transactions”.*

This further raises interest in understanding the factors that influence and don't influence access to agricultural credit in the case study MFI. The results of the binary regression analysis on microcredit access determinants are presented in Table 3. 12 explanatory variables were used in the analysis. The model reveals a weak relationship between the dependent variable (access to microcredit) and the independent variables, significant only at a 10% level of significance ( $P = 0.09$ ). Nevertheless, our model explains 51% of the factors that influence access to microcredit in the study institution ( $-2\log$  likelihood = 34.8; Nagelkerke R Square = 0.05), suggesting that the model is acceptable.

**Table 3.** Regression results for determinants of agricultural microcredit access

Independent variable	B	S.E.	Wald	Sig.	Exp(B)
Gender	-0.69	1.10	0.39	0.53	0.50
Age	-0.22	0.11	3.80	0.05	0.80
Farming experience	0.38	0.20	3.64	0.06	1.46
Educational level	0.81	0.52	2.44	0.06	2.25
Household size	-0.46	0.44	1.20	0.23	0.63
High-interest rates	-1.64	0.86	3.64	0.06	0.19
High transaction cost	-0.113	0.76	0.02	0.88	0.89
Marketing difficulties	0.71	0.83	0.73	0.39	2.03
Climate change	-0.83	0.54	2.35	0.13	0.44
Loan diversion to solve other problems	1.64	1.04	2.50	0.06	5.17
Lack of collateral security	-0.41	0.59	0.48	0.49	0.67
Limited savings or capital	-0.77	0.68	1.31	0.25	0.46
Constant	6.52	5.17	1.59	0.21	678

Note: Independent variable is microcredit access (1 = yes, 0 = no).  
Source: field survey, 2020.

The regression results reveal that despite only slight (and statistically insignificant) differences between loan beneficiaries and non-beneficiaries, four of the variables triggered client access to loans at the Ngoketunjia Cooperative Credit Union. These include farming experience ( $B = 0.38, p = 0.06$ ), the educational level of the farmer ( $B = 0.81, p = 0.06$ ), the existence of difficulties in marketing products ( $B = 0.71, p > 0.1$ ), and the diversion of loans to solve other problems ( $B = 1.64, p = 0.06$ ).

A positive beta value for farming experience seems logical as experienced farmers are more likely to acquire microloans than younger ones, given that experience itself affords the ‘soft collateral’ needed to effectively engage in agricultural production: the prerequisite for increased loan repayment rates and reduced risk of loan delinquency. It is also plausible that experienced farmers may have engaged in assets and savings accumulation before loan acquisition, which can provide a collateral edge compared to younger, more inexperienced farmers in case of loan default. In this study, an additional year of farming experience increased the probability of the farmer accessing loans by 1.46 times.

In line with previous studies (Assogba et al., 2017; Ongwech et al., 2020), higher educational levels increased

the likelihood of rice farmers having access to loans in this study. This is probably because farming households with more education are likely to have better knowledge of farming techniques, investments, and business management, which might (1) enhance the capacity to manage high levels of agricultural production (Alhassan et al., 2020), (2) increase asset accumulation, thereby reducing the effects of inadequate collateral (Adejoh and Adah, 2018), and (3) facilitate access to (paid) extension services that may be needed to accompany the farmer in successfully implementing larger agricultural investments after loan acquisition (Maniriho et al., 2021). In this study, any unit increase in education of the farmer increased the probability of accessing a loan by 2.25 times.

Product marketing difficulties and diversion of loans to solve other problems also had positive effects on farmers’ access to loans in the study. Key informant interviews with farmers revealed some difficulties in marketing small quantities of rice individually. This provided an incentive to obtain loans to increase production volumes and develop attractive packaging. Up to 20% of the loan amounts were reported to have been diverted from agricultural activities to solve other problems like household-related illnesses, death, and accidents.

This sounds logical, as agriculture in the study region is largely subsistent and relies heavily on (unpaid) family labor (Balgah, 2019). Family health is, therefore, a priority for agricultural production. The decision to divert loans to other (family) activities is therefore rational. While market failures increased the likelihood of the farmer applying for another loan by 2.03 times, diverting loans to solve other problems increased the probability of gaining access to new loans by 5.17 times.

A high interest rate was negatively related to loan access ( $B = -1.64$ ,  $P = 0.06$ ), which is in line with the findings in contemporary topical literature (Assogba et al., 2017; Chandio and Jiang, 2018). However, given that loan beneficiaries and non-beneficiaries are exposed to the same interest rate, this result needs to be interpreted with caution as it is likely to be a perception predominant among non-beneficiaries as no explicit loan price discrimination by client type was reported. The high interest rate constraint was reported by 78% of non-beneficiary rice farmers and only 15% of beneficiaries. However, it is possible that increased loan costs could be embedded in corrupt practices, which are rampant in financial transactions in Cameroon (Bin et al., 2021). This aspect, however, requires further research.

## CONCLUSION AND POLICY RECOMMENDATIONS

This study was carried out among rice farmers in the Ngoketunjia Division in the Northwest Region of Cameroon. These are farmers who benefitted or did not benefit from the microcredit scheme of the Ngoketunjia Cooperative credit union. A sequential mixed-methods approach was applied to collect data from both types of farmers and analyzed to identify the benefits and key drivers for credit access. Access to credit was found to have significant impacts on the farm expenditures and income of beneficiaries, and farming experience, educational level, marketing difficulties, and loan diversion were key push factors in accessing loans. A high interest rate was perceived as negatively influencing loan access. Inadequate collateral negatively influenced credit access, even if it was not a significant driver.

Given the potential of agricultural credit to boost agricultural production to improve the livelihoods of rice farmers and reduce imports in Cameroon, we recommend that more flexible policy approaches be implemented by the studied MFI to enhance the better

financial inclusion of its members. This may include, for instance, providing loans to farmers who are willing to pose their rice harvest as collateral. We recognize the research limitations of only one MFI, and the limited sample size is small, which renders generalization impossible for the study region. Broadened studies including multiple MFIs across space and time as well as expanded lists of independent variables are necessary to generate knowledge of significant policy relevance.

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## REFERENCES

- Adejoh, S.O., Adah, O.C. (2018). Determinants of credit access by small scale farmers in Dekina local government area of Kogi State, Nigeria. *Int. J. Agric. Sci. Res. Technol. Exten. Edu. Syst.*, 8(2), 79–85. <http://ijasrt.iaushoushtar.ac.ir>
- Alhassan, H., Abu, B.M., Nkegbe, P.K. (2020). Access to credit, farm productivity and market participation in Ghana: A conditional mixed process approach margin. *J. Appl. Econ. Res.*, 14(2), 226–246. DOI: 10.1177/0973801020904490
- Assogba, P.N., Kokoye, S.E.H., Yegbemey, R.N., Jonas A., Djenontin, J.A., Tassou, Z., Pardoe, J., Yabi, J.A. (2017). Determinants of credit access by smallholder farmers in North-East Benin. *J. Dev. Agric. Econ.*, 9(8), 210–216. DOI: 10.5897/JDAE2017.0814
- Atamja, L., Yoo, S. (2021). Credit constraint and rural household welfare in the Mezam Division of the North-West Region of Cameroon. *Sustainability*, 13(5964), 2–19. <https://doi.org/10.3390/su13115964>
- Balgah, R.A., Bomnsa, T.J., Tchouassi, G. (2020). Does access to microfinance minimize risks in Cameroon? *Afr. Inter-Discip. Rev.*, 11, 115–130.



- Balgah, R.A. (2019). Factors influencing coffee farmers' decisions to join cooperatives. *Sust. Agric. Res.*, 8(1), 42–58.
- Bin, J.M., Diangha, S.N., Ofeh, M.A. (2021). Impact of access to credit on the sustainability of small and medium-sized enterprises in Cameroon. *Am. J. Indust. Bus. Manag.*, 11, 705–718. <https://doi.org/10.4236/ajibm.2021.11604>
- Blasé, M.G. (1971). Role of institutions in agricultural development. Institution for Agricultural Development. Iowa University Press, Ames.
- Business in Cameroon (2020). Cameroon imported a “record, hitherto unheard of” 803,505 tons of rice in 2019. Retrieved on 17<sup>th</sup> Nov 2021 from: <https://www.businessincameroon.com/agriculture/1507-10546-cameroon-imported-a-record-hitherto-unheard-of-803-505-tons-of-rice-in-2019>
- Chandio, A.A., Jiang, Y. (2018). Determinants of credit constraints: Evidence from Sindh, Pakistan. *Emerg. Mark. Fin. Trade*, 54(15), 3401–3410. DOI: 10.1080/1540496X.2018.1481743
- Conroy, D.J. (2003). The challenges of microfinancing in Southeast Asia. Financing Southeast Asia's economic development. Singapore: Institute of Southeast Asian studies.
- De Aghon, B.A., Murdoch, J. (2005). The economics of microfinance. Cambridge: MIT Press.
- Djoumessi, Y.F., Kamdem, C.B., Afari-Sefa, V., Bidogeza, J.-C. (2018). Determinants of smallholder vegetable farmers credit access and demand in southwest region, Cameroon. *Leibniz Inf. Centr. Econ.*, 38(2), 1231–1240. <http://hdl.handle.net/10419/179942>
- Honig, D. (2019). Case study design and analysis as a complementary empirical strategy to econometric analysis in the Study of Public Agencies: Deploying mutually supportive mixed methods. *J. Pub. Admin. Res. Theor.*, 29(2), 299–317. <https://doi.org/10.1093/jopart/muy049>
- Fogwe, Z.N., Nghengwa A.P. (2014). A Cameroonian community development incidence of a three decade rise-fall rice economy on NDOP plain in the upper nun valley, Cameroon. *J. Env. Res. Manag.*, 5(3), 047–053. <http://www.e3journals.org>
- Ilebanmi, B.C. (1983). Impact of credit on small scale food producing farmers of Akoko South and Akoko North. Unpublished M.Sc. Dissertation. Zaria: Department of Agricultural Economics, Ahmadu Bello University.
- Kometa, S.S., Mua, K.E. (2017). Constraints to agricultural advancement within the Ndop Plain North West Region, Cameroon. *J. Biol. Agric. Health.*, 7(20), 1–8.
- Linh, T.N., Long, H.T., Chi, L.V., Tam, L.T., Lebailly, P. (2019). Access to rural credit markets in developing countries, the case of Vietnam: A Literature Review. *Sustainability*, 11, 1468. DOI:10.3390/su11051468
- Maniriho, A., Musabanganji, E., Lebailly, P. (2021). Factors affecting farm performance among small-scale farmers in the volcanic highlands of Rwanda: What is the role of institutions? *Asian J. Agric. Rural Dev.*, 11(4), 262–268. DOI: 10.18488/journal.ajard.2021.114.262.268
- Mele, V., Belardinelli, P. (2019). Mixed methods in public administration research: Selecting, sequencing, and connecting. *J. Public Admin. Res. Theory*, 29(2), 334–347. DOI: 10.1098/jopart/muy046
- Mbuli, C.S., Fonjong, L.N., Fletcher, A.J. (2021). Climate change and small farmers' vulnerability to food insecurity in Cameroon. *Sustainability*, 13(1523), 2–16. <https://doi.org/10.3390/su13031523>
- Mensah, N.O., Yeboah, E., Donkor, A., Tutu, F.O., Dier, R.K. (2019). Determinants of credit access of cocoa farmers. *Appl. Stud. Agribus. Comm.*, 13(3–4), 73–78. DOI: 10.19041/APSTRACT/2019/3-4/9
- Offor, O.S., Archibong, B.E., Silwal, P.K., Udo, U.J. (2021). Household level determinants of micro credit access among small holder farmers in Niger Delta Region, Nigeria. *Niger. Agric. J.*, 52(1), 102–110. <http://www.ajol.info/index.php/naj>
- Ongwech, W.L., Obel-Gor, C., Adhiambo, O.M. (2020). Determinants of credit access among smallholder dairy farmers in Kinangop sub-county, Kenya. *EPRA Int. J. Agric. Rural Econ. Res.*, 8(5), 1–11. DOI: <https://doi.org/10.36713/epra5808>
- Osabohien, R., Mordi, A., Ogunidipe, A. (2020). Access to credit and agricultural sector performance in Nigeria. *Afr. J. Sci. Technol. Innov. Dev.*, 14(1), 247–255. <https://doi.org/10.1080/20421338.2020.1799537>
- Tetteh, K.F., Baffoe, S., Boateng, P.Y., Teye, E. (2021). Modeling the determinants of credit delinquency among credit unions in rural communities in Ghana. *Afr. Dev. Resour. Res. Inst. J. Ghana*, 30 (2/7), 76–100.
- Thunstrom, T. (2021). 21 Microfinance statistics you need to know in 2021. Retrieved on Nov 26<sup>th</sup> 2021 from: [www.fitsmallbusiness.com/microfinance-statistics/](http://www.fitsmallbusiness.com/microfinance-statistics/)
- Tumenta, B.F., Fonteh, A.A., Manu, I.N. (2021). Role of agricultural cooperatives in rural development in the era of liberalization in the North West and South West regions of Cameroon. *J. Agric. Exten. Rural Dev.*, 13(1), 69–81. DOI: 10.5897/JAERD2020.1211
- Vik, E. (2010). In numbers we trust. Measuring impacts of institutional performance? *Perspect. Global Dev. Technol.*, 9, 292–326.

