



EXAMINING THE EFFECTS OF CAPITAL FINANCING ON THE GROWTH OF MAIZE AGRIBUSINESS COOPERATIVES IN KAWAMBWA DISTRICT, ZAMBIA

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International Journal of Science and Research Archive, 2026, 21(01), 444–455

Publication history: Received on 05 September 2026; revised on 15 October 2026; accepted on 17 October 2026

Article DOI: <https://doi.org/10.30574/ijrsra.2026.21.1.1914>

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ABSTRACT

This study examined the effects of capital financing on the growth of maize agribusiness cooperatives in Kawambwa District, Zambia. It identified major financing sources, assessed access to capital, determined the relationship between financing and cooperative growth, and examined barriers to obtaining finance. The study was anchored in the Resource-Based View (RBV) theory and adopted a mixed-methods approach. Structured questionnaires were administered to 120 cooperative respondents, while interviews were conducted with 10 key informants from relevant government and financial institutions. Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS), and qualitative data were analysed thematically. Cooperatives reported using commercial banks, microfinance institutions, government programmes, member contributions and cooperative savings. Access was constrained by high interest rates, collateral requirements, limited loan amounts, climate-related risks, bureaucratic procedures, governance weaknesses, poor financial records and limited financial literacy. Capital financing was perceived to support productivity, asset acquisition, revenue generation, profitability and market expansion. Pearson correlation showed a positive and statistically significant association between access to capital financing and cooperative growth ($r = 0.341$, $p < 0.001$). Regression analysis indicated that access to capital financing explained 11.6% of variation in cooperative growth ($R^2 = 0.116$). The study concludes that financing is an important but not exclusive contributor to cooperative growth. It recommends affordable agricultural finance, stronger financial management and governance, and lending products aligned with agricultural production and marketing cycles.

Keywords: Capital financing; Maize agribusiness cooperatives; Cooperative growth; Agricultural finance; Kawambwa District; Zambia

1 INTRODUCTION

Agriculture is important to employment, household livelihoods, food security and rural development in Zambia. Maize occupies a central place in national food systems, while maize agribusiness cooperatives help smallholder farmers organise production and engage with input and output markets. Through collective action, cooperatives can pool member resources,

coordinate procurement, aggregate produce, improve bargaining power and create opportunities for farmers to participate in commercial agriculture.

The ability of a cooperative to fulfil these functions depends partly on its access to capital. Funds are needed to purchase seed and fertiliser, meet transport costs, hire labour, maintain facilities, acquire equipment and cover operating expenses before revenue is received. Longer-term investment may require larger amounts for storage, processing, mechanisation and transport. Where capital is insufficient, a cooperative may be unable to purchase inputs at the right time, aggregate members' output in sufficient volumes, or invest in infrastructure that could improve quality and market access.

Capital financing may be obtained from internal and external sources. Internal financing includes member contributions, cooperative savings and retained earnings. External sources include commercial bank loans, microfinance credit, government programmes and development-partner support. Internal funds can reinforce member ownership and reduce dependence on lenders, but they are often limited by members' capacity to contribute and by the surpluses generated from operations. External funds can make larger investments possible, although they may be subject to interest charges, collateral requirements, documentation and repayment schedules.

Agriculture presents particular challenges for lenders and borrowers. Production is seasonal; revenue depends on yields, prices and marketing arrangements; and weather conditions can affect both output and repayment capacity. A cooperative may need to spend money months before receiving income from maize sales. If loan repayment dates do not reflect these cash-flow patterns, even a productive investment may create short-term financial pressure. Climate variability and changing market conditions add uncertainty to expected returns.

In Zambia, public and institutional initiatives have sought to support agricultural production and enterprise development. The existence of such initiatives, however, does not necessarily mean that every cooperative can access sufficient, affordable and timely finance. Eligibility rules, administrative delays, limited allocations, weak financial records and lack of collateral can separate the nominal availability of a financing source from effective access.

Kawambwa District in Luapula Province has registered maize agribusiness cooperatives involved in production, aggregation and marketing. The study identified concerns around inadequate capital, limited productive investment, low productivity, restricted market participation and slow organisational growth. Relatively little empirical evidence has focused specifically on the relationship between capital financing and the growth of maize agribusiness cooperatives in the district. This study was undertaken to address that district-specific gap.

The article follows the study's four objectives: identifying the major sources of capital financing, assessing the level of access, determining the relationship between financing and cooperative growth, and examining challenges to accessing finance. The corresponding research questions asked: What are the major sources of capital financing available to maize agribusiness cooperatives in Kawambwa District? What is the level of access to capital financing among these cooperatives? What relationship exists between capital financing and cooperative growth? What challenges do cooperatives face when attempting to access capital financing? These questions shaped the questionnaire, the key-informant interview guide and the organisation of the findings. The findings are relevant to cooperative leaders, government agencies, financial institutions and development partners seeking to design financing mechanisms that respond to the needs of rural agricultural organisations.

2 THEORETICAL AND CONCEPTUAL FOUNDATION

2.1 Resource-Based View Theory

The study was anchored in the Resource-Based View (RBV), first advanced by Wernerfelt (1984) and later refined by Barney (1991). RBV explains organisational performance by considering the resources that organisations possess and how effectively those resources are deployed. Barney's formulation highlights resources that are valuable, rare, difficult to imitate and non-substitutable. In this study, capital financing is treated as a strategic resource because it gives a cooperative the capacity to acquire other productive resources and capabilities. (Wernerfelt, 1984; Barney, 1991).

Financial capital can enable a cooperative to purchase inputs in bulk, acquire machinery, improve storage, arrange transport, adopt technology and strengthen its market presence. These resources can support higher volumes of activity, improved operational efficiency, reduced post-harvest losses and better service to members. Finance can also provide flexibility: a cooperative with adequate working capital may be better positioned to take advantage of market opportunities rather than selling produce immediately because of cash shortages.

RBV also suggests that resources must be effectively managed to produce organisational benefits. The amount of finance available is not the only consideration; the quality of investment decisions, accountability, financial controls and managerial capability influence what is achieved with the funds. Weak governance or poor planning may result in inefficient use of capital, while a well-managed cooperative may be better able to translate finance into productive assets and stronger performance.

2.2 Conceptual Relationship and Limitations

The study's conceptual framework identifies capital financing as the independent variable and cooperative growth as the dependent variable. Financing sources include commercial bank loans, microfinance credit, cooperative savings, member contributions, government grants or funds, and development-partner financing. Cooperative growth is reflected in indicators such as increased productivity, asset acquisition, revenue growth, profitability, market expansion, membership growth and employment creation.

The framework further recognises intervening conditions such as financial literacy, financial management capacity, collateral availability, cooperative governance, interest rates and lending conditions. External conditions, including government agricultural policies, economic conditions, market conditions and climate variability, may also influence the strength of the relationship. These contextual factors matter because finance is deployed within an operating environment that can either enable or constrain returns.

Although RBV provides a suitable foundation for examining capital as a productive resource, it has limitations. It focuses strongly on internal resources and offers less direct explanation of how resource-constrained organisations acquire those resources. It may also understate institutional and environmental influences. For agricultural cooperatives, public policy, lender practices, weather and commodity markets can affect both access to finance and the returns obtained from it. The findings are therefore interpreted with these contextual influences in mind.

The contribution is bounded by the study design. It provides local evidence on a relationship important to cooperative practice, but its cross-sectional design and single-predictor regression do not isolate all causal pathways. The results should inform practical decisions and further research rather than be treated as proof that financing access alone determines cooperative performance.

The underlying study identifies a district-specific gap concerning maize agribusiness cooperatives in Kawambwa. Evidence on individual farmers or general enterprise populations does not necessarily explain how cooperative organisations mobilise and use capital, because cooperatives pool member resources, make collective decisions and manage shared assets. The present study responds by examining financing sources, perceived access, growth outcomes and financing barriers in one district and testing the association between financing access and growth through correlation and regression analysis.

The literature themes reviewed for the underlying study emphasise the importance of capital financing while recognising that cooperative growth is shaped by organisational capability and the wider business environment. Internal financing can be accessible but insufficient; external financing can expand investment but may carry cost, collateral and administrative barriers. The impact of finance also depends on the capacity to allocate funds to productive uses and manage repayment. The existence of a financing programme should therefore not be treated as evidence of effective financial inclusion.

2.3 Critical Synthesis and Research Gap

These constraints are interrelated. Climate-related production losses can reduce expected revenue and increase concerns about repayment. Poor records may prevent a cooperative from documenting the effects of risk or demonstrating a credible mitigation plan. Limited financing may then prevent investment in storage, irrigation or transport that could help manage risk. This interaction suggests that a single credit intervention is unlikely to resolve all barriers; finance should be coordinated with governance, business-management support, market information and appropriate agricultural risk management.

The financing environment is shaped by financial, managerial, institutional and environmental constraints. Financial constraints include interest costs, insufficient savings, limited loan size and collateral. Managerial constraints include weak record keeping, limited budgeting skills, poor business planning and low financial literacy. Institutional constraints include lengthy application procedures and limited communication about programmes. Environmental constraints include weather variability, price uncertainty, transport limitations and other factors affecting the ability to produce and market maize. (OECD, 2022; World Bank, 2020).

2.4 Financial and Non-Financial Constraints

Financing may affect growth indirectly. Adequate working capital may improve a cooperative's ability to aggregate members' maize and strengthen its bargaining capacity with buyers. Storage investment may reduce pressure to sell immediately and support quality preservation, while transport assets may reduce dependence on hired services. These are plausible pathways rather than separate effects estimated by the study's single-predictor regression. The distinction is important when interpreting the quantitative results and avoiding claims that go beyond the model.

A useful analytical distinction is between financial inputs, operational outputs and longer-term outcomes. Loan approval or capital mobilisation is an input. Purchasing inputs, equipment or storage capacity represents deployment of resources. Increased volumes handled, reduced losses, improved sales or better member services are operational outputs. Sustainable growth requires these outputs to generate financial and organisational benefits over time. Monitoring only the amount of finance disbursed may overstate programme success if investments do not generate expected returns or create repayment stress.

Cooperative growth is multidimensional. It may involve increases in sales revenue, profitability, productivity, assets, membership, employment, market coverage and the volume of produce handled. Financing may influence these dimensions through different mechanisms. Working capital may support input purchases and aggregation; investment capital may support storage, equipment and transport; and liquidity may allow a cooperative to wait for suitable marketing conditions rather than sell immediately. The effect depends on whether the resources acquired are productive and appropriately managed.

2.5 Financing and the Dimensions of Cooperative Growth

Collateral requirements and documentation can create additional barriers. Formal lenders need evidence that borrowers can repay and that risks are being managed. Cooperatives with incomplete records, limited assets or unclear internal decision-making may struggle to provide that evidence. These constraints can reinforce one another: weak records make cash flow difficult to demonstrate, low asset ownership limits collateral, and limited borrowing history may increase perceived risk. Improving access consequently requires attention to both lender practices and cooperative readiness.

The seasonal character of maize agribusiness creates a mismatch between expenditure and revenue. Input procurement, labour, transport and aggregation costs arise before sales receipts are realised. Repayment schedules designed around regular monthly income can place pressure on a cooperative whose revenue is concentrated after harvest or after buyers pay. A facility that is nominally available but does not reflect these cycles may not be economically suitable. Financing should therefore be assessed against the cash-flow profile of the activity rather than the interest rate alone. (FAO, 2023; IFAD, 2023).

Access to capital financing is multidimensional. Availability concerns whether financing opportunities exist; eligibility concerns whether a cooperative meets the requirements; affordability concerns the cost of borrowing; adequacy concerns whether the amount is sufficient; timeliness concerns whether funds arrive when needed; and suitability concerns whether repayment and other terms match the activity being financed. A cooperative may know about a lender yet remain effectively excluded if it cannot provide collateral, if interest costs are high, if the approved amount is too small or if disbursement comes after the relevant production or marketing window.

2.6 Effective Access and the Agricultural Finance Gap

A balanced financing strategy may combine sources rather than rely on a single channel. Member savings can support routine operations and demonstrate commitment, while external finance may be used for investments whose expected cash flows can support repayment. The mix should reflect the cost of funds, timing of expenditure, expected revenue, risk and the cooperative's governance capacity. This distinction is relevant to the Kawambwa findings, where several sources were reported but internally mobilised funds remained particularly important.

External financing includes commercial credit, microfinance, public financing programmes and development-partner support. These sources can expand the capital available beyond what members can contribute. They differ in purpose, size, cost, eligibility rules and repayment requirements. Commercial lenders assess repayment capacity and risk; microfinance may offer smaller facilities; and public or development programmes may target specific activities or beneficiaries. The practical question is therefore not simply whether a source exists, but whether the cooperative can access it on terms that fit the proposed investment and the seasonal cash-flow pattern of maize agribusiness.

Capital financing in agricultural cooperatives can be considered in terms of internal mobilisation and external provision. Internal financing includes members' shares and contributions, accumulated savings and retained surpluses. These

mechanisms are connected to member ownership because members contribute resources and collectively determine how those resources are used. Internal financing can reduce exposure to interest charges and external lender conditions. Its principal limitation is scale: the amount available depends on members' liquidity and the surplus generated by the cooperative. Where members have low or seasonal cash incomes, savings may accumulate slowly and remain insufficient for infrastructure or equipment investment.

2.7 Sources of Capital Financing in Agricultural Cooperatives

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3 METHODOLOGY

3.1 Research Approach and Design

The study used a mixed-methods approach, combining quantitative questionnaire data with qualitative key-informant interviews. The quantitative component was used to describe financing sources, access levels, perceived growth outcomes and barriers, and to examine the statistical association between financing access and cooperative growth. The qualitative component provided additional context from people working in relevant government and financial institutions. Using both sources allowed the study to compare cooperative experiences with institutional perspectives. (Creswell and Creswell, 2018).

3.2 Study Area and Participants

The study was conducted in Kawambwa District, Luapula Province, Zambia. It focused on registered maize agribusiness cooperatives and selected key informants from relevant government and financial institutions. The underlying study reports 120 cooperative respondents for the quantitative component and 10 key informants for the qualitative component. Cooperative respondents provided information about financing sources and access, the perceived contribution of financing to growth, and constraints encountered when seeking funds.

3.3 Data Collection Instruments

Structured questionnaires were administered to cooperative respondents. The instrument covered respondent characteristics, sources of financing, access to capital financing, perceived effects on cooperative growth and challenges in obtaining finance. The key-informant interview guide was used to obtain qualitative information about the financing environment, lending requirements, institutional processes and the practical difficulties cooperatives experience. These instruments were aligned with the study objectives to maintain a clear link between data collection and analysis.

3.4 Data Analysis

Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were used to summarise the patterns reported by respondents. Pearson product-moment correlation was used to examine the direction and strength of the relationship between access to capital financing and cooperative growth. Simple linear regression was used to estimate the share of variation in the growth measure explained by the financing-access measure. Interview data were analysed thematically, with recurring issues organised around sources of finance, access conditions, effects on growth and financing barriers. (Creswell and Creswell, 2018). (Creswell and Creswell, 2018; Braun and Clarke, 2006).

3.5 Scope and Limitations

The research focused on maize agribusiness cooperatives in one district and reflects information collected during the 2026 field survey. The district-specific scope supports contextual understanding but limits generalisation to other districts or agricultural subsectors. The findings also rely partly on respondents' perceptions of growth. The reported regression uses capital-financing access as the predictor; other influences on growth are not estimated in that single-predictor model. Consequently, the results demonstrate an association within the sample rather than definitive causal proof.

4 RESULTS

4.1 Major Sources of Capital Financing

The study identified a range of internal and external sources of capital financing. Reported sources included commercial banks, microfinance institutions, government programmes, member contributions, cooperative savings and development-partner support. The variety of sources shows that cooperatives operate within a mixed financing environment rather than relying exclusively on one lender or funding programme.

Member contributions and cooperative savings were described as important sources for day-to-day operations and modest investment. These mechanisms can build ownership because members contribute to the resource base of their organisation. They may also be more accessible than formal loans because they do not necessarily require external collateral or lender approval. Their limitation is the amount that can be mobilised: where members have low and seasonal incomes, contributions may not be sufficient to finance substantial expansion.

Commercial bank loans can potentially provide larger amounts for working capital, infrastructure or equipment, but applications may be assessed against collateral, financial statements, repayment capacity and business viability. Microfinance institutions may offer smaller loans, yet the amount available may not match the needs of capital-intensive cooperative investments. Government programmes and development-partner support may provide grants, concessional finance or related assistance, although access can depend on eligibility, application procedures and the timing of allocations.

The findings therefore point to the importance of financing diversity. Different sources may be appropriate for different needs: member savings for routine expenses, seasonal credit for input procurement or aggregation, and longer-term financing for storage or equipment. A cooperative's financing strategy should match the purpose, cost and repayment profile of the funds to the expected cash flow from the activity being financed.

4.2 Level of Access to Capital Financing

The study's narrative findings indicate that many cooperatives experienced limited access to capital financing, while a smaller proportion reported satisfactory access. This finding underlines the distinction between the presence of financing sources and effective access. Cooperatives may be aware of banks or public programmes but remain unable to meet their requirements, secure sufficient funding or obtain it within the time needed for agricultural operations.

Affordability was a prominent concern. High interest rates raise the cost of borrowing and reduce the margin available from agricultural activities. Where yields or market prices are uncertain, expensive credit may be judged too risky. Loan size is another dimension: a cooperative may qualify for a small facility that is insufficient to purchase inputs in bulk, develop storage or acquire transport. A financing facility can therefore be technically accessible but inadequate for the investment objective.

Timeliness and product suitability also affect access. Agricultural cooperatives have seasonal expenditure and revenue patterns. Funds received after input-purchasing deadlines or after the main aggregation period may have limited value for the intended activity. Similarly, repayment schedules that begin before sales revenue is received may place pressure on working capital. These issues suggest that access should be assessed in terms of amount, affordability, timeliness, eligibility and alignment with the cooperative's business cycle.

The study's findings support a practical understanding of financial access: it is not merely the availability of a loan or programme but the ability to obtain and use finance on conditions that are appropriate for the organisation's operational requirements. Measures to improve access therefore need to address both institutional lending conditions and the readiness of cooperatives to apply for and manage funds.

4.3 Effects of Capital Financing on Cooperative Growth

Respondents perceived capital financing as contributing to increased productivity, asset acquisition, revenue generation, profitability, market expansion, membership growth and employment creation. These outcomes represent different dimensions of cooperative growth. Productivity relates to the volume or efficiency of activity; asset acquisition reflects investment capacity; revenue and profitability capture financial performance; and market expansion, membership and employment indicate organisational reach.

Financing can support productivity by allowing cooperatives and their members to purchase inputs at the appropriate time and in adequate quantities. Working capital may facilitate aggregation by enabling the cooperative to purchase or handle maize from members rather than relying only on immediate sales. Investment in storage, transport and handling may improve product quality and market access. When cooperatives can offer reliable volumes and quality, they may be better positioned to engage with larger buyers.

Capital can also help build an asset base. Storage facilities, equipment and transport assets may improve operational capacity and reduce dependence on costly hired services. However, asset acquisition contributes to growth only when the asset is appropriate, maintained and used efficiently. Investment decisions therefore need to be supported by market assessment, realistic budgets and clear accountability.

The inferential results showed a positive correlation between access to capital financing and cooperative growth ($r = 0.341$, $p < 0.001$). This means that respondents reporting greater access tended also to report higher growth. The association was statistically significant and positive, although its magnitude was moderate rather than strong. The result is consistent with the theoretical expectation that access to a strategic resource can support organisational development.

4.4 Regression Analysis

The simple linear regression analysis reported $R = 0.341$ and $R^2 = 0.116$. Thus, access to capital financing explained 11.6% of the variation in the cooperative-growth measure in the fitted model. The adjusted R^2 was 0.109. The reported analysis of variance gave $F = 15.531$ with $p < 0.001$, indicating that the model was statistically significant at conventional levels.

The reported regression coefficient for capital-financing access was positive ($B = 0.232$, $p < 0.001$), and the constant was 2.469. The equation can be represented as: Cooperative Growth = $2.469 + 0.232 \times \text{Access to Capital Financing}$. In the measurement scale used in the study, a one-unit increase in the access measure was associated with a 0.232-unit increase in the growth measure.

The coefficient should be interpreted as an association estimated from the study's data, not as definitive proof of causation. The data are observational and the model includes a single predictor. Better-performing cooperatives may be more attractive to lenders, while access to finance may also support growth. Other variables, including governance, management, market access, climate exposure and member participation, may influence both access and growth.

The R-squared value also provides an important qualification. Although the model is statistically significant, 88.4% of the variation in the growth measure is not explained by financing access in this model. This does not imply that finance is unimportant; rather, it shows that cooperative growth is multifaceted and that financing should be considered alongside other organisational and environmental conditions.

4.5 Challenges in Accessing Capital Financing

The study identified financial barriers including high interest rates, limited loan amounts, inadequate collateral, low savings and insufficient internally generated capital. These barriers can reinforce each other. Cooperatives with a small asset base may lack acceptable collateral, while limited savings reduce their capacity to demonstrate financial strength or contribute matching funds. Where loan amounts are small, external credit may not support the scale of investment required.

Institutional and managerial barriers included bureaucratic procedures, poor financial records, limited financial literacy and governance weaknesses. Lenders require credible information to assess a borrower's financial position and repayment prospects. Incomplete accounts, weak budgets or unclear decision-making procedures can increase uncertainty for lenders and make it difficult for cooperative leaders to evaluate investment options. Administrative complexity may also impose costs on rural organisations with limited staff and travel resources.

Climate and market risks were also identified as relevant constraints. Unfavourable weather can reduce yields, while price fluctuations can reduce sales revenue and weaken repayment capacity. Such uncertainty can affect lenders' willingness to

provide credit and cooperatives' willingness to borrow. Financing approaches that recognise agricultural risk may therefore need to be accompanied by improved market information, production support, risk-sharing mechanisms and repayment terms aligned with seasonal cash flow.

5 DISCUSSION

5.1 Financing Diversity and Cooperative Resilience

The range of financing sources found in the study demonstrates that cooperative capital formation involves both member-based and institutional channels. Internal savings and contributions can support ownership and provide a foundation for operations, but their scale is limited by member resources and the surplus generated by the cooperative. This makes it important to consider internal mobilisation as one part of a broader financing strategy rather than as a complete substitute for external finance.

External financing can support larger investment, but its developmental value depends on suitability. Credit that is too expensive, too small or received too late may not enable the intended activity. Similarly, a grant or loan may not lead to growth if the cooperative lacks the skills or governance systems needed to use it effectively. Financing programmes should therefore assess the fit between financing terms and the investment plan, not only whether an applicant meets basic eligibility requirements.

5.2 Capital Financing as an Enabling Resource

The positive relationship between financing access and growth is consistent with RBV's emphasis on strategic resources. Financial capital can enable a cooperative to acquire physical assets, organise operations and pursue commercial opportunities. The finding supports the view that financing is relevant to cooperative development in Kawambwa, where limited investment capacity is identified as a concern.

At the same time, the modest explanatory power of the model suggests that the growth process is influenced by more than finance. The ability to turn capital into productive outcomes depends on managerial competence, transparent governance, member participation, reliable markets and the wider operating environment. Financing should therefore be paired with support that strengthens the cooperative's capacity to plan, invest and monitor results.

Causal claims require caution. The correlation and regression results demonstrate statistical association within the sample but do not establish the temporal sequence of financing and growth. A longitudinal design could determine whether improved financing access precedes later growth, while multivariable analysis could assess whether the relationship remains after accounting for cooperative age, size, governance and market conditions.

5.3 Financial Management, Governance and Institutional Practice

Poor records and limited financial literacy can create barriers at two levels. Externally, they may reduce lenders' confidence in a cooperative's ability to repay. Internally, they limit leaders' ability to calculate costs, assess profitability, plan cash flows and monitor the use of funds. Practical financial-management training can therefore improve both credit readiness and the quality of decisions made after financing is obtained. (Lusardi and Mitchell, 2020).

Governance is similarly important because finance is a collective resource in a cooperative. Members need confidence that borrowed or contributed funds will be used for agreed purposes and that obligations will be repaid. Clear approval procedures, transparent accounts, regular reporting and separation of duties can reduce the risk of mismanagement. These practices may also improve the credibility of loan applications. (Birchall, 2018; ICA, 2022).

Institutional procedures should be proportionate to the size and nature of the cooperative while preserving prudent lending. Public agencies and finance providers can clarify eligibility, simplify avoidable administrative steps and communicate expected timelines. Engagement with cooperative leaders can help lenders understand seasonal working-capital needs and distinguish between financing for short-term trading and longer-term capital investment.

5.4 Implications for Agricultural Development

The findings have implications for agricultural commercialisation and rural economic development. Cooperatives that can mobilise appropriate finance may be better able to provide services to members, aggregate produce and participate in markets. However, interventions should not equate loan disbursement with successful development. Monitoring should also

consider whether financing was used for its intended purpose, whether the investment generated the expected returns, and whether repayment obligations remained manageable. (Chapoto et al., 2020; Samboko et al., 2018).

A coordinated approach could link financing with business planning, financial literacy, market information and governance support. Public programmes may be most effective when cooperatives are helped to prepare viable investment proposals and maintain the records required for accountability. Financial institutions may also benefit from working with agricultural agencies that understand the seasonal and production risks faced by rural cooperatives.

A multivariable model could test financing access alongside governance, management capacity, market access, financial literacy, climate exposure and cooperative characteristics. Repeated observations over several seasons could help establish temporal ordering and show whether financing precedes changes in growth. Qualitative follow-up could explore why some cooperatives convert finance into stronger outcomes while others do not. These designs would build on the present study without overstating what the current single-predictor analysis establishes.

Future research should expand beyond one district and examine whether the relationship holds among cooperatives of different sizes, ages, asset bases and market arrangements. Comparative studies could explore whether access constraints vary between cooperatives focused on aggregation, input distribution, storage or processing. Such differentiation would help determine whether financing products should be tailored to the cooperative's main business function.

5.5 Future Research Priorities

Monitoring should also examine unintended pressure. Increased borrowing is not necessarily a positive outcome if repayment becomes difficult or funds are diverted from productive use. A cooperative may invest successfully but experience temporary cash-flow pressure because buyers pay late. Tracking performance and repayment can help distinguish weak investment choices from unsuitable loan terms or external shocks. Such information can inform product redesign and targeted technical assistance.

A robust financing intervention should monitor both access and results. Access indicators may include applications received, approval rates, average loan size, effective interest cost, time between application and disbursement, and the proportion receiving funds before the relevant production or marketing deadline. Outcome indicators may include use of funds for the approved purpose, asset utilisation, sales volume, revenue, operating surplus, repayment performance and services to members. Indicators should match the programme objective and be collected consistently.

5.6 Monitoring and Evaluation of Financing Support

Public agencies and development partners can help cooperatives prepare viable business plans, maintain records and understand application requirements. Programme communication should explain eligibility, required documents, decision processes and likely timelines. Where procedures cannot be simplified, clear guidance can reduce avoidable application errors and repeated travel. Coordination between technical support and financing can improve the likelihood that capital is used productively.

Financial institutions may improve effective access by developing products that reflect agricultural cash-flow timing, communicating eligibility requirements clearly and reviewing whether collateral conditions are proportionate to the size and risk of a proposed facility. This does not remove the need for prudent credit assessment. It encourages institutions, where their rules permit, to consider cooperative cash flows, contracts, governance and risk-management arrangements alongside conventional collateral measures.

5.7 Implications for Financial Institutions and Public Agencies

Leaders should ensure that members understand the purpose and cost of borrowing. Because cooperative finance affects the collective organisation, transparent decision-making is essential. Members should be informed about the amount borrowed, intended use, repayment schedule and risks. Periodic reporting can help prevent misunderstandings and support collective oversight. These practices are particularly important when funds are used to acquire shared assets or finance the purchase of members' produce.

For cooperative leaders, financing should be treated as a managed business resource rather than an end in itself. Before applying for funds, the cooperative should identify the activity to be financed, estimate its costs, assess the expected timing of revenue and determine whether the activity can cover its obligations. Borrowing should be linked to a business plan and cash-flow forecast that accounts for the seasonal pattern of maize production and marketing.

5.8 Implications for Cooperative Leaders

The unstandardised coefficient $B = 0.232$ represents the estimated change in the growth measure associated with a one-unit change in the financing-access measure. Its substantive meaning depends on the scales and coding used in the underlying study. It should not be interpreted as a 23.2% increase in growth unless the original measurement and model explicitly support that interpretation. Clear reporting of measurement scales is essential for replication and comparison with other studies.

The remaining 88.4% should not be assigned to any single factor because the model does not estimate the contribution of omitted variables. It may reflect a combination of management quality, governance, cooperative size and age, member participation, market access, infrastructure, technology, climatic conditions and measurement variation. These are plausible influences recognised in the study's framing, but their individual effects were not estimated in the reported regression. Future analysis should measure them directly before comparing their relative importance.

The correlation coefficient of 0.341 indicates a positive relationship of modest magnitude between access to capital financing and cooperative growth. The reported p -value below 0.001 indicates statistical significance under the assumptions of the analysis. Statistical significance does not, by itself, indicate that the relationship is large or that financing is the only meaningful determinant. The regression result illustrates this distinction: $R^2 = 0.116$ means that financing access accounted for 11.6% of the variation in the measured growth outcome in the fitted model.

6 CONCLUSION

The study examined the effects of capital financing on the growth of maize agribusiness cooperatives in Kawambwa District, Zambia. It found that cooperatives relied on a mix of internal and external sources, including member contributions, cooperative savings, commercial banks, microfinance institutions, government programmes and development-partner support. The study's narrative findings indicate that access to adequate and affordable finance remained limited for many cooperatives.

Capital financing was perceived to support productivity, productive asset acquisition, revenue generation, profitability and market expansion. Pearson correlation revealed a positive and statistically significant association between financing access and cooperative growth ($r = 0.341$, $p < 0.001$). Regression analysis showed that access to capital financing explained 11.6% of variation in the growth measure, with a positive coefficient. These results indicate that financing is an important resource but not the sole determinant of cooperative growth.

Barriers included high interest rates, inadequate collateral, limited loan amounts, bureaucratic procedures, weak financial records, limited financial literacy, governance weaknesses and climate- and market-related uncertainty. Sustainable improvement therefore requires more than expanding nominal credit availability. It requires appropriate products, sound cooperative management, clear institutional processes and attention to the risks inherent in agricultural production and marketing.

RECOMMENDATIONS

First, financial institutions and relevant public agencies should develop agricultural financing products that reflect maize production and marketing cycles. Repayment schedules should, where possible, align with the timing of expected revenue. Loan sizes and pricing should be transparent and matched to realistic investment requirements. Risk-sharing or credit-guarantee arrangements may be considered where feasible to reduce the collateral barrier without encouraging unsustainable borrowing.

Second, cooperatives should strengthen bookkeeping and financial planning. Records should capture member contributions, purchases, sales, operating costs, assets, liabilities and loan repayments. Annual budgets, cash-flow forecasts and simple investment appraisals can help committees identify financing needs, assess repayment capacity and select investments with realistic prospects of generating returns.

Third, financial literacy and loan-readiness support should be practical and continuous. Training can cover preparation of business plans, cash-flow management, loan costs, budgeting, cost and margin calculations, record keeping and financial reporting. Such support should be targeted to committee members and managers who are responsible for financial decisions.

Fourth, cooperative governance should be strengthened through transparent decisions, clear roles, internal controls and regular reporting to members. Borrowing decisions should be approved through established procedures, and members should receive information on how funds are used and what results are achieved. This can improve accountability and help build trust with financial institutions.

Fifth, public agencies, financial institutions and development partners should improve communication about available financing programmes, eligibility requirements, application steps and expected timelines. Where possible, administrative procedures should be simplified without compromising due diligence. Coordinated technical support can help cooperatives prepare credible applications and implement funded activities effectively.

Sixth, financing should be linked with risk management. Better market information, storage, aggregation arrangements and production support can help cooperatives reduce avoidable losses and manage seasonal uncertainty. Finance providers should recognise that agricultural cash flows differ from those of businesses with steady daily revenue.

Finally, further research should include cooperatives from other districts and examine additional predictors of growth, including governance, management capacity, market access, financial literacy, climate exposure and the size and cost of financing. Longitudinal research could help establish whether improved access precedes subsequent growth and could test the contribution of finance alongside other determinants.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Acknowledgements

The author acknowledges the maize agribusiness cooperatives and key informants from relevant government and financial institutions who contributed information to the underlying study.

Disclosure of Conflict of Interest

There is no conflict of interest regarding this study.

Statement of Ethical Approval

The approval to conduct the study was obtained from the relevant university authorities and permission was sought from the District Cooperative Office, District Agricultural Coordinator and other relevant institutions.

Statement of Informed Consent

Informed consent was obtained from all respondents before data collection.

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