



Effect of Financial Services on Economic Empowerment of Agriculture Cooperative: A Case of Iterambere Ry' Abahinzi Borozi ba Makera Cooperative

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Abstract: The general objective of this research was to assess the effect of financial services on the economic empowerment of agricultural cooperatives. The study focused on a population of 263 individuals from Iterambere Ry' Abahinzi Borozi ba Makera (IABM) Cooperative. The sample size for this study was 159 respondents, determined using Slovin's formula. Data analysis conducted using SPSS, and descriptive statistics such as frequency distributions, percentages, means, and correlations were determined to summarize the data and draw conclusions regarding the effect of financial services on the economic empowerment of IABM Cooperative. The model summary shows an R of 0.779, indicating a strong correlation between predictors and economic empowerment. The R^2 of 0.606 reveals that 60.6% of the variance is explained. The Durbin-Watson statistic of 1.971 suggests no significant autocorrelation. The regression model's unstandardized coefficient for the constant is 0.642, representing the baseline economic empowerment level when all predictors are zero. The study recommended that cooperative leaders enhance recognition programs and communication channels, while farmers engage in financial literacy programs and cooperative meetings. Financial committees should refine loan criteria and update policies, and operational staff must assess service satisfaction and develop educational materials. Future researchers are urged to explore financial literacy, leadership styles, savings and credit services, and agricultural innovations in relation to the economic empowerment of IABM Cooperative.

Keywords: Financial Services, Economic Empowerment, Agricultural Cooperatives, Financial Literacy Services, Saving Services, Credit Services

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1. Introduction

Regulatory frameworks and monetary policies established by the National Bank of Rwanda are decisive in the financial scene of the country. Digital transformation has focused on encouraging financial institutions to adopt cashless systems which are purposed to facilitate economic activities. In addition, the bank has greatly emphasized financial education for the citizens to be able to understand the products in the financial

market. It has been indispensable in closing gaps on financial inclusion as well as guaranteeing an enduring financial sector that is bulwarked in the country's developmental goals (Nyalihama & Kamanzi, 2022).

Through this, EcoBank Rwanda has established itself as a leading provider of financial solutions on the one hand to the benefit of different categories of customers. It is also easy to perform financial transactions with businesses and individuals, as it has integrated mobile banking, electronic cards, and wallet services. However,

the bank has also focused more on partnerships with small and medium enterprises so as to end the bane of poor access to credit creating and thereby encouraging entrepreneurship. The impact of these innovations is that they have made it possible to undertake seamless financial interactions in Kigali and elsewhere thus fostering the enhancement of economic activities and institution of a framework necessary for sustainable financial development in Kigali and elsewhere (Mupenzi, 2024).

The economic empowerment of agricultural cooperatives in Rwanda is critical for enhancing food security, poverty alleviation, and overall economic development. Despite the potential of these cooperatives to drive economic growth, they face significant hurdles in accessing financial services. A study by Ngendahimana *et al.* (2023) highlights that approximately 60% of agricultural cooperatives in Rwanda struggle with limited access to credit, which hampers their ability to invest in production and expand their operations. This access gap poses a significant barrier to achieving sustainable economic empowerment for these cooperatives, as financial resources are essential for acquiring better technology, inputs, and infrastructure (Rukundo, 2024).

Furthermore, the financial literacy of cooperative members plays a crucial role in determining the effectiveness of financial services in fostering economic empowerment. Many members of agricultural cooperatives lack adequate financial knowledge, which can lead to poor financial management practices and ineffective utilization of available resources (Karamaga & Nyiritunga, 2023).

In addition to financial literacy obstacles, regulatory and institutional challenges further impede the effective provision of financial services to agricultural cooperatives. The existing financial policies may not adequately accommodate the unique needs of these cooperatives, which can lead to unfavorable lending conditions and limited-service offerings (Uwitonze & Munyaneza, 2023). As a result, many cooperatives are unable to access the necessary funds or face high-interest rates that undermine their profitability. The lack of supportive policy frameworks can thus limit the potential for these cooperatives to achieve economic empowerment, consequently affecting broader economic growth in Rwanda (Bizimana, 2024).

Although several studies including a study by Ngendahimana *et al.* (2023), Rukundo (2024), Karamaga & Nyiritunga (2023), Uwitonze & Munyaneza, (2023) and Bizimana (2024) have explored agricultural projects, they often fail to address the specific effect of financial services on the economic empowerment of agricultural cooperatives like IABM. This study aimed to address knowledge deficiencies in this area.

The general objective of this research was to assess the effect of financial services on economic empowerment of agricultural cooperatives. A case of IABM Cooperative.

This study had the following specific objectives:

1. To establish the effect of financial literacy services on the economic empowerment of IABM Cooperative.
2. To examine the effect of saving services on the economic empowerment of IABM Cooperative.
3. To determine the effect of credit services on the economic empowerment of IABM Cooperative.
4. To determine the effect of financial services on economic empowerment IABM Cooperative.

2. Literature Review

This section focuses on summarizing existing empirical studies relevant to this topic including research articles, reports, and other sources to gain an understanding of the empirical evidence available.

2.1 Financial literacy services and economic empowerment

Santhosh and Aithal (2024) examined the impact of financial literacy on economic empowerment among women in Self Help Groups (SHGs) in India through microfinance programs. The study employed a review-based analysis incorporating academic databases, government reports, and case studies. Using the ABCD framework, the findings highlighted significant improvements in financial knowledge, access to financial services, and shifts in financial behaviors among rural women in SHGs. Participants displayed increased financial service utilization and enhanced decision-making capabilities in financial matters. The study identified that tailored financial literacy interventions led to measurable progress in economic empowerment. Financial education programs were linked to expanded financial inclusion within underserved communities. The research emphasized the role of structured microfinance initiatives in bridging financial knowledge gaps and improving service accessibility. The outcomes align with promoting gender equality and sustainable development objectives, addressing economic challenges within marginalized rural areas effectively.

Showkat *et al.* (2024) examined the relationship between financial literacy and women's economic empowerment, with a particular focus on the role of digital financial services. The study utilized structural equation modeling in Smart PLS 4, integrating the Technology Acceptance Model (TAM) and Theory of Planned Behaviour (TPB).

The results revealed a strong positive correlation between financial literacy and the usage of digital financial services, which in turn contributed to increased economic empowerment among women. The study demonstrated that enhancing financial literacy improves engagement with digital platforms, thereby supporting economic participation. This highlights the critical need for integrating financial literacy into digital financial services to maximize their impact on gender equality. The research calls for policymakers to prioritize financial literacy initiatives on digital platforms to further women's economic outcomes. Future studies should explore effective strategies for implementing financial literacy programs and assessing their long-term effects.

Ranabhat (2023) examined the impact of financial literacy on the socio-economic well-being of people in Nepal's Kaski District. The study adopted descriptive and cross-sectional research designs and involved a sample of 385 households, with data collected through survey questionnaires administered to household heads. Statistical methods, including frequency distribution, exploratory factor analysis, and structural equation modeling, were employed for analysis. The findings indicated that financial literacy positively influences both social and economic well-being, enabling individuals to address their social and economic needs effectively. Possession of financial knowledge and skills emerged as critical for achieving sustainable socio-economic outcomes. The study highlights the importance of enhancing financial literacy to support the attainment of Sustainable Development Goals. This research provides valuable evidence for policymakers, educators, and stakeholders to prioritize financial education and improve socio-economic conditions in Nepal. The results are crucial for promoting sustainable development in similar contexts.

2.2 Saving services and economic empowerment

Mbunda (2024) assessed the financial services provided by Saving and Credit Cooperatives (SACCOS) and their impact on women's empowerment and household livelihoods in Temeke Municipality, Tanzania. The study utilized qualitative research methods, including focus group discussions (FGDs) and Key Informant Interviews (KIIs) with female members of SACCOS. Findings revealed that SACCOS offer a range of services, including savings accounts, low-cost loans, and financial advisory services. The study concluded that SACCOS contribute significantly to financial inclusion, improving women's financial security, financial literacy, and decision-making skills. It was recommended that SACCOS invest more in education and advisory services to help women make better financial decisions and avoid cycles of debt and poverty.

Mukabazaire and Rusibana (2023) examined the effect of microfinance services on the socio-economic welfare of women in Kigali, Rwanda, focusing on Umurenge SACCOs. A descriptive and correlational research design was used, with a sample size of 314 respondents from a population of 1463. Data were analyzed using descriptive and inferential statistics. Findings revealed positive, moderately strong correlations between access to credit ($r = 0.614$, $p < 0.05$), savings facilities ($r = 0.606$, $p < 0.05$), and socio-economic welfare. Collateral facilities showed a strong positive correlation ($r = 0.536$, $p < 0.05$). The multiple regression analysis ($R = 0.704$) indicated a moderately strong positive relationship, with R Square = 0.495, suggesting that 49.5% of the variance in women's socio-economic welfare could be explained by these factors. The study recommends enhancing access to credit, offering flexible loan products, and simplifying application processes for women.

Ntamwaga *et al.* (2020) assessed the effect of credit services provided by UMWALIMU SACCO in Nyagatare, Rwanda, on the socio-economic empowerment of teachers. The study used a descriptive survey design with a sample of 72 respondents from a target population of 140, using SPSS software for quantitative analysis and a thematic approach for qualitative data. Findings indicated that credit services such as loan amounts, credit periods, and the purpose of loans were favorable to members. A strong relationship was found between SACCO services and the ability to start or expand businesses, with 95.3% of members benefiting. SACCO services also positively impacted investment opportunities (96.2%) and health (96.4%). A statistical relationship between saving money and investing in businesses was also established, with a correlation coefficient of $r = .880$ and a p -value of .000. The study recommends allowing members flexible access to their savings and more favorable credit policies.

2.3 Effect of credit services on economic empowerment

Adera and Abdisa (2023) investigated the relationship between financial inclusion and women's economic empowerment in Ethiopia. The study utilized endogenous switching regression and instrumental variable methods, analyzing data from the Women's module of the Ethiopian Demographic and Health Survey (DHS). The findings revealed a positive and statistically significant impact of financial inclusion on women's economic empowerment. Greater access to financial services was linked to improved economic outcomes for women. The study highlights the importance of collaboration between financial institutions, development agents, and policymakers in implementing effective financial inclusion initiatives tailored to Ethiopia's context. The findings emphasize the necessity of evaluating these interventions rigorously.

to assess their specific effects and ensure their successful implementation. This research contributes to understanding how financial inclusion can advance gender equality, promote economic growth, and reduce poverty in Ethiopia.

Mengstie (2022) investigated the impact of microfinance on women's economic empowerment using data from a sample of 346 women clients of microfinance institutions. The study applied multiple regression and paired sampled t-test for data analysis. The findings from multiple regression analysis revealed that age, marital status, education level, credit amount, and number of training sessions significantly affect women's economic empowerment. However, prior business experience did not have a significant impact. The paired t-test showed a significant difference in income, assets, and savings before and after accessing microfinance services. The results indicate that microfinance positively impacts women's economic empowerment by increasing income, asset ownership, and savings. Additionally, it enhances women's entrepreneurship and business exposure.

Zhao *et al.* (2022) examined the effects of the digital economy on high-quality urban development in China, focusing on its mechanism. The study analyzed the digital economy and high-quality development levels of 222 Chinese cities from 2011 to 2016, utilizing business registration data to quantify entrepreneurial vitality. The results indicate that the digital economy significantly improves high-quality development. This finding holds after robustness tests using historical data and the Broadband China pilot policy as a quasi-experiment. The study reveals that encouraging public entrepreneurship is a key mechanism driving the digital economy's positive impact. Additionally, the threshold and spatial models highlight that the digital economy's effects exhibit nonlinear increments and spatial spillover of "marginal effects." These findings provide valuable insights into the reasons for high-quality development and the role of digital economy in fostering urban economic growth.

3. Methodology

This section explored the methodologies and processes necessary for conducting the survey. It covered the research design, the objectives, and the characteristics of the sample population. The section also explained the sampling methods used, provided a detailed description of the data collection instruments and tools, and outlined the procedure for analyzing the collected data.

3.1 Research Design

This study adopted descriptive and correlational research design to collect data and define the effect of financial services on the economic empowerment of agricultural cooperatives, focusing on IABM Cooperative. Descriptive surveys are employed to collect and analyze

data, summarize findings, and draw conclusions. The correlational design is appropriate for examining the relationship between financial services and economic empowerment.

3.2 Study Population

For this study the research population was 263 people made up of farmers, cooperative leaders, operational staff, and financial committees of IABM Cooperative. In order to determine the sample size, the researcher consulted Slovin' formula.

$$n = \frac{N}{1 + N(e)^2}$$

When applied to the sample provided, this formula yields a sample size of 159.

$$n = \frac{263}{1 + 263(0.05)^2} = \frac{263}{1 + 263(0.0025)} = \frac{263}{1 + 0.6575} = \frac{263}{1.6575} = 159$$

Stratified sampling technique was used in research to ensure that specific subgroups within a population are adequately represented in the sample. This method involves dividing the population into groups. The researcher randomly selected samples from each group proportionate to 159 sample size in the overall population.

3.3 Data Collection Methods and Instruments

Questions used in this research might be either open-ended or closed-ended. To get detailed, incomparable answers, use open-ended questions; for more specific, easily comparable data, use closed-ended questions. A total of 159 respondents were selected, following the sample distribution based on the population size. Questionnaires with a combination of closed-ended questions were administered to Farmers, Cooperative Leaders, Operational Staff, and Financial Committees of IABM Cooperative.

3.4 Data Analysis

In order to find descriptive statistics, the researcher used SPSS version 25 to calculate percentages, frequency, mean and standard deviation.

Bivariate correlation analysis, which examines the connection between a single dependent variable and one independent variable used to verify hypothesis. Whether you want to find out whether there's a correlation between two sets of numbers, say X and Y, this is one of the simplest ways to do statistical analysis.

Multiple regression model was evaluated to all indicators as stated in the conceptual framework.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Y = Economic Empowerment of Cooperative,
 β_0 = Constant,
X1 = Financial Literacy Services,
X2 = Saving Services,
X3 = Credit Services.
e=error term

3.5 Ethical Considerations

Participants were asked for their consent to administer the surveys before they begin to fill the questionnaire. The researcher protected all of personal information. Each participant the researcher visited was given a letter. The response rate provides an overview of how many respondents participated in the study by completing the questionnaire. A high response rate is crucial for

of approval for data collection, one from University of Kigali and another from the management of IABM Cooperative. There was no need to provide names or titles on the questionnaire.

4. Results and Discussion

This section presents the data collected from respondents, followed by an analysis and interpretation of the findings.

4.1 Respondent Rate

ensuring data reliability and validity, as it reflects the level of engagement and willingness of the targeted population to provide insights.

Table 1: Response Rate

Questionnaire	Frequency	Percent
Filled	151	94.97
Unfilled	8	5.03
Total	159	100.00

Source: Field data, 2025

Table 1 displays the response rate where a total of 159 questionnaires were distributed. Among these, 151 questionnaires were filled out, constituting an impressive response rate of 94.97%. Conversely, 8 questionnaires remained unfilled, accounting for 5.03%. This strong participation rate ensured that the findings are representative of the cooperative's members, providing a solid foundation for insights into financial literacy and its correlates.

4.2 Correlation Analysis

The correlation analysis identifies the strength and direction of relationships between financial literacy services, saving services, credit services, and economic empowerment. The results indicate the extent to which these financial factors influence cooperative members' economic stability.

Table 2: Correlations analysis

		Financial Literacy Services	Saving Services	Credit Services	Economic Empowerment of Cooperative
Financial Literacy Services	Pearson Correlation	1	.775**	.702**	.719**
	Sig. (2-tailed)		.000	.000	.000
	N	151	151	151	151
Saving Services	Pearson Correlation	.775**	1	.732**	.702**
	Sig. (2-tailed)	.000		.000	.000
	N	151	151	151	151
Credit Services	Pearson Correlation	.702**	.732**	1	.698**
	Sig. (2-tailed)	.000	.000		.000
	N	151	151	151	151
Economic Empowerment of Cooperative	Pearson Correlation	.719**	.702**	.698**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	151	151	151	151

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

Source: Field data, 2025

Table 2 presents the correlation analysis identifying the strength and direction of relationships between financial

literacy services, saving services, credit services, and the economic empowerment of IABM Cooperative.

The analysis shows significant positive relationships among all independent variables and the dependent variable, with Pearson correlation coefficients of 0.719 for financial literacy services, 0.702 for saving services, and 0.698 for credit services, all significant at $p < 0.05$. The findings resonate with Mukabazaire and Rusibana (2023), who examined the positive correlation between access to savings facilities and socio-economic welfare among women in Rwanda. Their study indicated that access to savings significantly affects economic welfare, which aligns with this study on IABM Cooperative, where enhanced saving services increase members' financial security.

The findings align with Mengstie (2022), who investigated the impact of microfinance on women's economic empowerment. Their analysis revealed that access to credit significantly improves income and asset ownership, supporting this study on IABM Cooperative, where better access to credit services positively influences economic empowerment among cooperative members, enhancing their financial independence.

These results indicate that higher financial literacy services, improved saving services, and better access to credit services are positively related to the economic empowerment of IABM cooperative members.

The findings are consistent with Showkat *et al.* (2024), who emphasized the importance of financial literacy in enhancing engagement with digital financial services. Their study demonstrated that increased financial literacy contributes to economic empowerment, aligning with this study on IABM Cooperative, where improved financial literacy services positively influence members' economic stability.

4.3 Regression Analysis

Regression analysis is conducted to measure the combined effect of financial literacy, savings, and credit services on economic empowerment. The findings determine the significance of each independent variable in predicting members' financial well-being.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.779 ^a	.606	.598	.31795	1.971

a. Predictors: (Constant), Credit Services, Financial Literacy Services, Saving Services

b. Dependent Variable: Economic Empowerment of Cooperative

Source: Field data, 2025

Table 3 presents the model summary indicating the overall fit of the regression model. The value of R is 0.779, suggesting a strong correlation between the predictors (Credit Services, Financial Literacy Services, and Saving Services) and the dependent variable (Economic Empowerment of IABM Cooperative). The R Square of 0.606 indicates that approximately 60.6% of the variance in the economic empowerment of IABM Cooperative can be explained by independent variables. The Durbin-Watson statistic of 1.971 suggests that there is no significant autocorrelation in the residuals.

The findings are supported by Cornelli *et al.* (2024), who emphasized that advancements in digital financial

services significantly enhance access to credit and savings products, particularly for underserved groups such as agricultural workers. Their study demonstrated how tailored financial services can empower communities economically. This study on the model summary for IABM Cooperative indicates that the model exhibits a strong correlation between Credit Services, Financial Literacy Services, and Saving Services in explaining economic empowerment. Both studies reinforce the importance of accessible financial resources in promoting economic stability and empowerment within communities.

Table 4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.883	3	7.628	75.452	.000 ^b
	Residual	14.860	147	.101		
	Total	37.743	150			

a. Dependent Variable: Economic Empowerment of Cooperative

b. Predictors: (Constant), Credit Services, Financial Literacy Services, Saving Services

Source: Field data, 2025

Table 4 presents the ANOVA results, which indicate the overall significance of the regression model. The F value of 75.452 and a p-value of .000 confirm that the independent variables significantly predict the economic empowerment of cooperative members. This finding

indicates that the model is statistically significant and that the predictors work collectively to influence economic empowerment.

The findings are consistent with Antonites (2021), who emphasized the necessity of targeting financial products and services at historically marginalized groups in South Africa. Their study revealed that extending access to credit and savings programs increases participation in the formal financial system, thereby enhancing economic opportunities for underrepresented populations. This

study on the ANOVA results for IABM Cooperative indicates that the model is statistically significant, with the independent variables collectively predicting economic empowerment among cooperative members. Both studies highlight the importance of inclusive financial services in addressing historical inequities and promoting broader economic development.

Table 5: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.642	.211		3.037	.003		
1 Financial Literacy Services	.333	.085	.337	3.913	.000	.360	2.774
Saving Services	.214	.088	.221	2.445	.016	.329	3.038
Credit Services	.278	.074	.300	3.747	.000	.419	2.389

a. Dependent Variable: Economic Empowerment of Cooperative

Source: Field data, 2025

Table 5 shows the coefficients for the regression model that examines the impact of financial literacy, savings, and credit services on IABM Cooperative's economic empowerment. The unstandardized coefficient for the constant is 0.642, which represents the baseline level of economic empowerment when all predictor variables are zero.

Hypothesis testing

Hypothesis 1 stated that There is no significant effect of financial literacy services on the economic empowerment of IABM Cooperative. A one-unit increase in financial literacy services leads to a 0.333-unit gain in economic empowerment, as shown by the unstandardized coefficient of 0.333 ($\beta = 0.333$, $t = 3.913$, $P = 0.000 < 0.05$), first hypothesis rejected. This research indicates that financial literacy programs have a large and beneficial impact on the economic empowerment of cooperative members. The findings are consistent with Ranabhat (2023), who emphasized the positive influence of financial literacy on socio-economic well-being. Their study demonstrated that enhanced financial literacy enables individuals to effectively address their economic needs. This study on the regression coefficients indicates that financial literacy programs significantly improve economic empowerment among IABM Cooperative members, supporting their socio-economic outcomes.

Hypothesis 2 stated There is no significant effect of saving services on the economic empowerment of IABM Cooperative. A one-unit increase in saving services leads to a 0.214-unit gain in economic empowerment, as shown by the unstandardized coefficient of 0.214 ($\beta = 0.214$, $t = 2.445$, $P = 0.016 < 0.05$), second hypothesis rejected. This noteworthy conclusion demonstrates that saving services improves the economic empowerment of cooperative members. The findings resonate with Ntamwaga *et al.* (2020), who assessed the effect of credit and saving services on socio-economic empowerment in

Rwanda. Their study found significant relationships between access to savings and investment opportunities. This study on the regression coefficients for IABM Cooperative indicates that saving services positively impact members' economic empowerment, enhancing their financial stability and investment capabilities.

Hypothesis 3 stated that There is no significant effect of credit services on the economic empowerment of IABM Cooperative. A one-unit increase in credit services leads to a 0.278-unit rise in economic empowerment, as shown by the unstandardized coefficient ($\beta = 0.278$, $t = 3.747$, $P = 0.000 < 0.05$), third hypothesis rejected. This research demonstrates that cooperative members' access to financial services has a major impact on their economic empowerment. The findings align with Zhao *et al.* (2022), who highlighted the important role of accessible financial services in fostering economic growth. Their research illustrated how credit services improve entrepreneurial activities and economic conditions. This study on the regression coefficients confirms that access to credit services significantly influences economic empowerment within IABM Cooperative, enabling members to enhance their business ventures.

In terms of collinearity statistics, the Tolerance values for all independent variables exceed 0.1, and the Variance Inflation Factor (VIF) values are less than 10, showing that multicollinearity is not an issue in the model. This shows that the independent factors may be regarded as valid predictors of economic empowerment with little overlap.

5. Conclusion and Recommendations

5.1 Conclusion

The study findings indicate that financial literacy services play a significant role in enhancing the

economic empowerment of IABM Cooperative members. Members who received financial literacy training demonstrated improved financial management skills, better budgeting practices, and increased confidence in making informed financial decisions.

The study revealed that saving services have a meaningful impact on the economic empowerment of IABM Cooperative members. Through access to structured saving mechanisms, members were able to develop a saving culture, accumulate capital, and gradually invest in income-generating activities.

The findings demonstrate that credit services significantly contribute to the economic empowerment of IABM Cooperative members. With access to affordable credit, members were able to invest in small businesses, expand existing income-generating activities, and meet urgent financial needs.

These findings indicate that financial literacy, saving services, and credit services contribute meaningfully to the economic empowerment of IABM Cooperative members.

5.2. Recommendations

The study recommends that:

1. Cooperative Leaders should establish recognition programs for members who regularly utilize cooperative services.
2. Farmers are recommended to actively engage in financial literacy programs to improve financial management skills.
3. Farmers should participate in cooperative meetings to express their needs regarding financial services.

5.3. Area for Further Research

Future research is suggested to examine: The impact of cooperative leadership styles on the economic empowerment of IABM Cooperative and how agricultural practices and innovations affect the economic empowerment of IABM Cooperative.

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