



Financial Literacy and Operational Performance of Small and Medium Enterprises in Rwanda: A Case of Manufacturing SMEs in Gasabo District

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Abstract: *The goal of the study was to assess the effect of financial literacy on the operational performance of SMEs in Rwanda. For this study, descriptive and correlation analyses were used. A descriptive research design employed a wide range of research methods. A descriptive study was also used to describe participant demographic information. A correlational analysis was also performed. This study used a sample of 275 participants, which was chosen using Slovin's formula. Data analysed using descriptive and inferential statistics. Bookkeeping, financial planning, and debt management explain 63.9% of the variation in operational performance, as indicated by the R-squared value. Bookkeeping has a regression coefficient of 0.196 and a significance level of 0.000 (< 0.05). Financial planning has a regression coefficient of 0.358 and a significance level of 0.000 (< 0.05). Debt management has the highest regression coefficient of 0.379 with a significance level of 0.000 (< 0.05). Since all predictors have significance levels below 0.05, they are all statistically significant in explaining operational performance. Manufacturing SMEs should enhance their bookkeeping practices by adopting digital accounting systems to improve financial tracking and reporting. Government agencies and business development organisations should incorporate financial literacy training into entrepreneurship programmes to equip SMEs with essential financial management skills.*

Keywords: *Financial Literacy, Operational performance, Book keeping, Financial planning, Debt management*

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1. Introduction

Rwanda's low level of financial literacy has clearly hampered the country's economic growth. This is primarily due to the population's insufficient ability to effectively minimize risk through financial diversification and inefficient investment allocation. As a result, Rwandans' savings and investment levels are significantly lower. Loan repayment performance is an important part of financial management for Rwanda's small and medium enterprises (SMEs). Furthermore, less than half of Rwandans recall their weekly spending, showing that many do not keep track of their finances. Many enterprises, however, continue to struggle due to a lack of access to dependable financial

services, endangering their long-term existence. SACCOS are a type of microfinance institution that was established to assist small and medium-sized firms (SMEs) with their financing (Twizeyimana & Nkubito, 2023).

Despite the critical role that Small and Medium Enterprises (SMEs) play in driving economic growth and job creation in Rwanda, many of these enterprises continue to face significant challenges that hinder their operational performance. According to a recent survey by the Rwanda Private Sector Federation (2022), approximately 60% of SME owners reported inadequate knowledge of essential financial management practices such as budgeting, cash flow management, and investment analysis. Moreover, a study conducted by the

World Bank (2021) highlighted that SMEs in developing economies, including Rwanda, are significantly hampered by financial illiteracy, leading to reduced competitiveness and sustainability. The report indicated that 70% of Rwandan SMEs lack formal financial training, which correlates with their high failure rate; 40% of SMEs close within the first five years of operation.

However, there is limited empirical evidence specifically focusing on the relationship between financial literacy components (book keeping, financial planning, debt management) and operational performance among SMEs in Rwanda. By filling this research gap, this study aims to provide valuable insights on financial literacy and operational performance of SMEs in Gasabo District.

The general of the study was to assess the effect of financial literacy on operational performance of manufacturing SMEs in Rwanda.

Specific objectives

The following objectives guided the study:

1. To examine the effect of book keeping on operational performance of selected manufacturing SMEs in Gasabo District.
2. To determine the effect of financial planning on operational performance of selected manufacturing SMEs in Gasabo District.
3. To establish the effect of debt management of operational performance of selected manufacturing SMEs in Gasabo District.

2. Literature Review

2.1 Book keeping and operational performance of small and medium-sized enterprises

Ardila et al. (2021) looked at how MSMEs' financial literacy is affected by several aspects. The goal of this research is to analyze and evaluate the elements of financial literacy that are associated with the financial management of micro, small, and medium-sized enterprises (MSMEs) in Medan. This goal is derived from the current state of affairs whereby the operations of MSMEs do not depend on well-organized financial and information management. Associative methodology is used in the study. Questionnaires and in-person interviews provided the main data used in this analysis. Using a purposive sampling approach, researchers in this study were able to acquire 100 responses from a population of 120 people who work for small and medium-sized enterprises (SMEs) in Medan's food and beverage sector. Validity and reliability tests will be conducted on each questionnaire statement that is utilized as data in this research. The data analysis approach employs the SEM structural equation model with Confirmatory Factor Analysis (CFA). Using t-

statistic and p-value parameters, assess the structural equation model. According to the findings of this research, three factors financial behavior, financial socialization, and accounting systems—have a favorable and substantial impact on financial literacy.

Tumba *et al.* (2022) looked at how well female micro-entrepreneurs understood money and how their businesses fared. The research was driven by the observation that female entrepreneurs often struggle with financial literacy, which hinders their ability to reach their full potential and compete on an equal footing with male entrepreneurs. So, the purpose of this research was to find out how financial literacy affected the success of micro-businesses run by women. In this study, 247 female entrepreneurs from six states in Nigeria's northeast were surveyed to gather data. Using SmartPLS 3.2.7, the study's assumptions were evaluated using route modeling-structural equation modeling. The results showed that female entrepreneurs' company success is significantly impacted by all three measures of financial literacy: financial education, cash forecasting, and bookkeeping. In addition, the report found that among the female micro-entrepreneurs, financial education and accounting methods were the most important factors influencing company performance variation, while cash-forecasting was the least. This suggests that women micro-entrepreneurs need financial education more than ever before. This research emphasizes the need of providing female microentrepreneurs with ongoing training and seminars on several financial topics, including accounting, cash forecasting, and market volatility.

2.2 Financial planning and operational performance of small and medium-sized enterprises

Zada et al. (2021) looked at how financial management techniques impacted the growth of forest firms in Pakistan, specifically those with a small to medium size. By examining how financial management techniques affected the expansion of small and medium-sized enterprises (SMFEs) in Pakistan's growing economy, this study fills a need in the literature on financial management practices. Working capital management, accounting information systems, financial reporting, investment choices, and financing were the five financial management activities that were the center of this study. In order to assess the five hypotheses, data was gathered from 260 small and medium-sized enterprise (SMFE) owners, finance managers, and other finance staff members using structured questionnaires. Financial success and business development are strongly correlated with increased levels of accounting information system use, investment choices, financial reporting, working capital management, and financing practices. Furthermore, the data shows that there is a very beneficial relationship between financial management practice and company expansions. The success of small and medium-sized enterprises (SMFEs) depends on their

ability to enhance their financial performances via the use of financial management methods. This has important consequences for owners, managers, and regulators. Several practical implications and suggestions for further research are continued in this paper.

Utami *et al.* (2021) studied the financial literacy of consumption-sector micro, small, and medium companies in Probolinggo City. Scholars have focused on the problem of financial literacy among MSMEs owners since it is a key factor in a company's success or failure. A company's financial behavior and success were both correlated with its level of financial literacy. The purpose of this research was to examine micro, small, and medium-sized enterprises (MSMEs) in Probolinggo City's consumption sector with regard to their financial knowledge, technology use, behavior, and performance. It looked at 51 micro, small, and medium-sized enterprises (MSMEs) that had been running for at least three years. In order to gather information, questionnaires were sent to MSME owners. The surveys had both yes/no and rating scale questions designed to gauge financial literacy, technology use, and financial behavior. According to the findings, the owners' degree of financial literacy is moderate. When it came to running their company, the proprietors seldom touched any technology. The company they oversee, however, has exhibited signs of fiscal discipline that bode well for its future.

Yasin *et al.* (2020) assessed the impact of women entrepreneurs' financial literacy on halal company. Not only is there a significant gender disparity on a worldwide scale, but women also tend to lack commercial acumen. Their lack of professional training in management and education in financial matters allow them to operate the company on a shoestring. Among Muslim women entrepreneurs, this research reveals what makes them tick and the difficulties they face as company owners. The purpose of this article is to educate Muslim women business owners on the value of financial literacy in managing their companies and reaching their full potential. A literature analysis was conducted using library research to analyze the impact of financial literacy on company performance and the behavioral characteristics that influence women entrepreneurs to pursue halal business. When starting a company, many women lack the necessary expertise, especially in the areas of finance and business, but they are often propelled by external forces to do so. If this is the case in Malaysia, company expansion might be stymied since women tend to spend a larger portion of their money on things unrelated to running a business. According to this research, Muslim women company owners confront many obstacles, including a dearth of resources, inadequate training in management and business operations, and stringent government laws and regulations. According to the results of this research, women company owners can't overcome obstacles to better financial management and overall company

success without first acquiring a solid foundation in financial literacy.

2.3 Debt management and operational performance of small and medium-sized enterprises

Esiebugie *et al.* (2018) looked at how SMEs in Nigeria's Benue State fared when their owners had a better grasp of financial concepts. The foundation of the research was the Dual-Process Theory. Based on responses to a well-structured questionnaire, the researcher drew on 154 primary and secondary sources. Multiple linear regression analysis was used to assess the connection between the model's variables, and descriptive statistics such simple percentages and frequencies were used to analyze the acquired data. The probability value from the regression analysis was used to test the first hypothesis at a 5% level of significance, according to the results of the regression analysis. The results showed that SMEs' performance is affected by their financial knowledge and attitudes. Budgeting and planning, debt management, record keeping, saving, and retirement plans should all be part of school and other institution-wide training programs aimed at promoting financial literacy and practice.

Nyamagwa (2021) explored how women small-scale merchants in the South Mugirango sub-county benefited from increased financial literacy in terms of economic empowerment. Finding out how small-scale women traders' economic empowerment was impacted by budgeting, book-keeping, and debt management techniques was one of the study's primary aims. Financial literacy theory served as the guiding principle for the research. The study was guided by descriptive survey research design. Registered small-scale women merchants in South Mugirango Sub-County who benefited from an initiative by the Equity Group Foundation were the intended subjects of the research. Through a random selection procedure, a sample size of 34% was chosen from trained and untrained small-scale women merchants. Sales, earnings, and operational efficiency were all positively impacted by the study's conclusions, which demonstrated the importance of budgeting skills taught in financial literacy programs. The capacity to effectively obtain and manage loans, with the goal of minimizing loan obligation, was also critical in improving SSE performance. The majority of female dealers do not maintain accurate records, according to the results. Women merchants who had received financial literacy training had more economic agency, according to the results. Moreover, the results showed that financial literacy training greatly aided small-scale women merchants' economic empowerment. This is why, as a national policy to economically empower small-scale women merchants, the government and NGOs should launch and support gender-responsive financial literacy programs.

Iswan *et al.* (2020) used Busia County as a case study to investigate the impact of funding on the expansion of microenterprises owned by women. It investigated how financial education affected the ability to successfully apply findings. A descriptive survey design was used to accomplish the aims of the research. The research focused on fifty female-owned businesses. The researcher used a drop-and-pick approach to conduct the questionnaire. In addition, the researcher gave each subject a copy of the interview guide in person. Next, descriptive statistics were used to examine the gathered data. Additionally, in order to determine the link between the dependent and independent variables, Pearson's product moment correlation analysis was performed. Results showed that training in new venture formation, financial management, and sources of financing were

positively associated with microenterprises held by women. Thus, it is advised that the government and other stakeholders maintain financial literacy programs for women. These programs should help women start businesses, create new products, and grow existing ones. This will greatly contribute to women's financial independence.

3. Methodology

3.1 Population and Sample size

The study population for this study was 882 manufacturing SMEs financed by SACCOs in Gasabo District.

Table 1: Study Population

Category	Population
Handmade crafts	107
Food and Beverage Manufacturing	261
Wooden furniture Manufacturing	514
Total	882

Source: Field data, 2024

Slovin's formula enabled researcher to sample the community with the appropriate degree of precision, while studying the complete population is impossible owing to lack resources and time. Using Slovin's formula, researcher estimate how big of a sample they needed to get reliable findings.

This is how you determine which version of Slovin's equation to use:

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

n= Number of samples or sample size

N= Total population

e = Error tolerance

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

n= Number of samples or sample size

N= Total population

e = Error tolerance

$$n = \frac{882}{1 + (882 \times 0.05^2)} = \frac{882}{1 + (882 \times 0.0025)} = \frac{882}{1 + 2.205} = \frac{882}{3.205} = 275.19 \approx 275$$

Table 2: Sample Size

Category	Population	Sample size	Sampling Technique
Handmade crafts	107	33	Stratified
Food and Beverage Manufacturing	261	81	Stratified
Wooden furniture Manufacturing	514	160	Stratified
Total	882	275	

Source: Field data, 2024

In this study, the researcher used a stratified sampling technique. The target population was first divided into relevant strata, and respondents were then selected from each stratum using a simple random sampling method. This helped to ensure that different categories of respondents were fairly represented in the study.

3.2 Questionnaire guide

According to Toyon (2021), a questionnaire is a research instrument in which respondents are given a list of questions to answer independently, without the direct involvement of the interviewer. In this study, questionnaires were administered to SMEs in Gasabo

District. Most of the survey questions were closed-ended, requiring respondents to select one answer from predetermined options. Questionnaires were distributed to all 275 participants.

3.3 Reliability

How well elements in a set are positively associated with one another can be measured using a reliability coefficient called Cronbach's alpha. Cronbach's alpha was calculated using SPSS to ensure the research instrument's reliability. A dependability between 0.7 and 1.0 is typically regarded as satisfactory. For the purposes of this analysis, an alpha coefficient of 0.7 or above is deemed statistically significant.

Table 3: Reliability Statistics

Variables	N of Items	Cronbach's Alpha	Verdict
Book keeping	4	.812	Accepted
Financial planning	4	.823	Accepted
Debt management	4	.841	Accepted
Operational Performance	4	.802	Accepted

The reliability statistics in Table 3 indicate that all variables have Cronbach's Alpha values above the threshold of 0.7, demonstrating a high level of internal consistency. Specifically, bookkeeping, financial planning, debt management, and operational performance all recorded alpha coefficients ranging from 0.802 to 0.841. This confirms that the measurement tools used for these variables are reliable and the results can be deemed statistically significant for further analysis.

3.4 Ethical consideration

Participants were treated with respect during the study by politely requesting their time and clearly responding to their questions. Respondents were selected randomly

without favoritism or bias based on personal characteristics such as religion, race, or sexual orientation. All information collected during the survey was kept strictly confidential and used only for the stated research purposes.

4. Results and Discussion

This chapter concentrated on research findings and data analysis. The findings, analysis, and discussions on the research objectives were presented using inferential (regression and correlation) analysis with the assistance of the Statistical Package for Social Sciences (SPSS) version 25.

Table 4: Response Rate

Questionnaires	Frequency	Percent
Returned	259	94.18
Unreturned	16	5.82
Total	275	100.00

Source: Field data, 2024

The response rate indicates that out of 275 questionnaires distributed, 259 were successfully returned, leading to a response rate of 94.18%. This high response rate suggests that the data collected is likely representative of the target population of manufacturing SMEs in Gasabo District, enhancing the reliability of the study findings.

4.1 Correlation Analysis

Correlation analysis was conducted to examine the relationships among the key variables: bookkeeping, financial planning, debt management, and operational performance. The Pearson correlation coefficients and significance levels are presented in Table 5.

Table 5: Correlations

		Book keeping	Financial planning	Debt management	Operational performance
Book keeping	Pearson Correlation	1	.615**	.648**	.653**
	Sig. (2-tailed)		.000	.000	.000
	N	259	259	259	259
Financial planning	Pearson Correlation	.615**	1	.591**	.700**
	Sig. (2-tailed)	.000		.000	.000
	N	259	259	259	259
Debt management	Pearson Correlation	.648**	.591**	1	.706**
	Sig. (2-tailed)	.000	.000		.000
	N	259	259	259	259
Operational performance	Pearson Correlation	.653**	.700**	.706**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	259	259	259	259

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

Source: Field data, 2024

The results in Table 5 indicate that bookkeeping has a positive moderate and significant correlation with operational performance, with a correlation coefficient of

0.653 and a significance level of 0.000. Since the significance level is below 0.05.

Financial planning also shows a positive strong and significant correlation with operational performance, with a correlation coefficient of 0.700 and a significance level of 0.000. As the significance level is below 0.05.

Debt management exhibits the strong correlation with operational performance, with a correlation coefficient of 0.706 and a significance level of 0.000. Given that the significance level is below 0.05.

Similarly, Esiebugie *et al.* (2018) investigated SMEs in Nigeria and found that financial knowledge, including debt management practices, positively influenced

business performance. Their study highlighted that SMEs that properly manage their debts experience better financial stability, which supports the findings of this study that SMEs with good debt management practices achieve better operational outcomes.

4.2 Regression Analysis

Regression analysis was conducted to determine the extent to which bookkeeping, financial planning, and debt management collectively explain variations in operational performance. The results are presented in Tables 6, 7, and 8.

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.799 ^a	.639	.635	.39610

a. Predictors: (Constant), Debt management, financial planning, Bookkeeping

Source: Field data, 2024

The model summary in Table 6 shows that the correlation coefficient (R) is 0.799, indicating a strong relationship between financial literacy components and operational performance. The R Square value of 0.639 suggests that 63.9% of the variation in operational performance is explained by bookkeeping, financial planning, and debt management. This finding suggests that financial literacy

significantly influences operational performance. Similarly, Ardila *et al.* (2021) found that financial literacy elements, including accounting systems and financial behavior, positively impact the financial management of MSMEs. Their research revealed that well-organized financial records contribute to improved decision-making and business performance.

Table 7: Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.823	3	23.608	150.369	.000 ^b
	Residual	40.008	255	.157		
	Total	110.830	258			

a. Dependent Variable: Operational performance

b. Predictors: (Constant), Debt management, financial planning, Bookkeeping

Source: Field data, 2024

The ANOVA table 7 presents the overall significance of the regression model. The F-statistics are 150.369, with a significance level of 0.000. Since the significance level is below 0.05, the regression model is statistically significant and fit to be used in predicting study variables, meaning that bookkeeping, financial planning, and debt management jointly have a meaningful impact

on operational performance. Additionally, Utami *et al.* (2021) found that financial literacy influences the financial behavior and performance of MSMEs in Probolinggo City. Their study revealed that MSME owners with financial planning skills were better able to allocate funds, manage operational expenses, and sustain business growth.

Table 8: Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	.320	.154		2.078	.038
	Book keeping	.196	.054	.192	3.630	.000
	Financial planning	.358	.049	.366	7.306	.000
	Debt management	.379	.054	.365	7.019	.000

a. Dependent Variable: Operational performance

Source: Field data, 2024

The regression coefficients provide insights into the individual influence of bookkeeping, financial planning, and debt management to operational performance.

Bookkeeping has a regression coefficient of 0.196 and a significance level of 0.000 < 0.05, H_{01} : Book keeping does not have significant relationship with operational performance of manufacturing SMEs in Gasabo District, was rejected. It indicates that bookkeeping positively and

significantly influences operational performance. For every unit increase in bookkeeping practices, operational performance increases by 0.196.

Financial planning has a regression coefficient of 0.358 and a significance level of $0.000 < 0.05$. H_{02} : There is no significant relationship between financial planning and operational performance of manufacturing SMEs in Gasabo District, was rejected. This suggests that financial planning has a strong and significant impact on operational performance. A unit increase in financial planning leads to an increase of 0.358 in operational performance.

Debt management has the highest regression coefficient of 0.379 with a significance level of $0.000 < 0.05$, H_{03} : Debt management has no significant relationship with operational performance manufacturing SMEs in Gasabo District, was rejected. It indicates that effective debt management practices contribute the most to operational performance. A unit increase in debt management results in a 0.379 improvement in operational performance.

Since all predictors have significance levels below 0.05, they are all statistically significant in explaining operational performance. Among them, debt management has the strongest influence, followed by financial planning and bookkeeping.

Table 9: Summary of Hypotheses

Null Hypotheses	p value	Decision
H_{01} : Book keeping does not have significant relationship with operational performance of manufacturing SMEs in Gasabo District.	$p < 0.05$	Rejected
H_{02} : There is no significant relationship between financial planning and operational performance of manufacturing SMEs in Gasabo District.	$p < 0.05$	Rejected
H_{03} : Debt management has no significant relationship with operational performance manufacturing SMEs in Gasabo District.	$p < 0.05$	Rejected

Source: Field data, 2024

Table 9 presents a summary of the hypotheses tested in the study; the results indicate that all three null hypotheses were rejected at a significance level of $p < 0.05$. Specifically, the findings reveal that bookkeeping, financial planning, and debt management each have a significant relationship with operational performance of manufacturing SMEs in Gasabo District.

5. Conclusion and Recommendations

5.1 Conclusion

The study concludes that bookkeeping plays a significant role in improving operational performance of manufacturing SMEs in Gasabo District. Effective bookkeeping practices, such as proper invoicing, monitoring accounts receivable, and managing accounts payable, enhance financial accountability, transparency, and efficiency, ultimately contributing to better operational performance.

The study concludes that financial planning has a significant positive relationship with operational performance of manufacturing SMEs in Gasabo District. Structured financial planning, including budgeting, goal-setting, and asset allocation, enables SMEs to allocate resources efficiently, anticipate and manage financial risks, and make informed strategic decisions, which enhances operational performance.

The study concludes that debt management significantly influences operational performance of manufacturing SMEs in Gasabo District. SMEs that effectively manage their debt obligations through understanding interest rates, repayment terms, and controlling debt accumulation are better positioned to maintain financial

stability, reduce financial stress, and achieve sustainable operational performance.

5.2 Recommendations

Policy Makers and Financial Institutions should be developed to promote financial literacy among SMEs through training workshops and capacity-building initiatives. Financial institutions should offer tailored financial planning advisory services to SMEs to enhance their financial decision-making.

Government agencies and business development organizations should incorporate financial literacy training into entrepreneurship programs to equip SMEs with essential financial management skills.

5.3 Suggestion for Further Research

Future research could explore the following areas: A comparative study between different districts in Rwanda to examine variations in financial literacy and operational performance among SMEs. The role of digital financial literacy in enhancing the financial performance of SMEs in Rwanda. The influence of financial literacy on access to credit and investment opportunities for SMEs in Rwanda.

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