Website:www.jriiejournal.com ISSN 2520-7504 (Online) Vol.9, Iss.2, 2025 (pp. 250 - 260)

Effect of Financial Literacy on the Growth of Small and Medium Enterprises in Rwanda: A Case of Selected Small and Medium Enterprises in Nyarugenge District

Muroruhirwe Euphrosine & Thomas Tarus
University of Kigali,
https://orcid.org/0009-0008-0656-1702
Email: mureuph@gmail.com

Abstract: *Financial literacy has been highlighted as a key driver for the growth of small and medium enterprises. However, there is a dearth of empirical research on this study in Rwanda, and specifically in Kigali city. The study examined the effect of financial literacy on the growth of SMEs in Nyarugenge District. The study is underpinned by the hypotheses that budgeting literacy, book keeping literacy and financial access literacy have no significant effect on the growth of selected SMEs. The target population was 2,489 SMEs from which a sample size of 345 managers were randomly selected. However, data was collected from 269 managers using the questionnaire. Data was analyzed through descriptive and inferential analyses. The finding for $H_0$1 shows that Budgeting literacy has no significant effect on the growth of selected SMEs in Kigali city, Nyarugenge District (β=.507; p<.05). Therefore, the first hypothesis is rejected. However, for $H_0$2, findings show that Book-keeping literacy has no significant effect on the growth of selected SMEs in Kigali city, Nyarugenge District (β=.058; p>.05). Therefore, the second hypothesis is accepted. For $H_0$3, Financial access literacy has no significant effect on the growth of selected SMEs in Kigali city, Nyarugenge District (β=.495; p<.05). Therefore, the third hypothesis is rejected. These findings hold relevance for policymakers, financial institutions, and business support organizations striving to enhance SME success. The recommendations include enhancing financial resource allocation skills, prioritizing effective financial reconciliation with bank records, improving banking literacy among business owners, seeking training for better financial decision-making, and staying updated on available funding opportunities.*

Keywords: *Financial Literacy, Budgeting Literacy, Book Keeping Literacy, Financial Access Literacy, Small and Medium Enterprises*

How to cite this work (APA):

Muroruhirwe, E. & Tarus, T. (2025). Effect of financial literacy on the growth of small and medium enterprises in Rwanda: A case of selected small and medium enterprises in Nyarugenge District. *Journal of Research Innovation and Implications in Education, 9*(2), 250 – 260**. https://doi.org/10.59765/jgpw92.**

1. Introduction

Rwandan SMEs operate in various sectors, including agriculture, manufacturing, trade, and services (World Bank, 2020). The agricultural sector is the largest employer in the country, accounting for over 70% of employment, with most farmers operating as smallholders (World Bank, 2020). The manufacturing sector is dominated by small and medium enterprises, which are mainly involved in food processing, textiles, and construction materials (UNCTAD, 2019). The service sector, including retail, hospitality, and transport, also has a significant number of SMEs (Mupenzi, 2019).

Kigali city, which is the capital of Rwanda, is a hub of SMEs specializing in different sectors. According to the National Institute of Statistics of Rwanda (NISR), there were 15,069 registered SMEs in Kigali City in 2020, representing 19.4% of all SMEs in Rwanda (NISR, 2020). The service sector is the largest employer of SMEs, accounting for over 55% of all registered SMEs in the city (NISR, 2020). The manufacturing sector, which includes food processing, textiles, and construction materials, is also significant, employing over 20% of all registered SMEs (NISR, 2020).

Microenterprises, with less than ten employees, make up the majority of SMEs in Kigali City, while small and medium enterprises with 10-50 employees represent a smaller proportion (NISR, 2020). Many SMEs in Kigali City are informal, with limited access to formal financial services and business development support.

However, like in the rest of the country, SMEs in Kigali often face financial challenges that can lead to their failure, including inadequate capital, poor financial management, and lack of access to financial services (Kyereboah-Coleman & Biekpe, 2018). A survey by the Private Sector Federation in 2019 revealed that only 42% of SMEs in Kigali were profitable, with 24% breaking even and 34% making losses.

As demonstrated by various scholars (Irikefe & Opusunju, 2021; Bwalya & Mulenga, 2019; Ismail, *et al.*, 2018) financial literacy has the potential to equip SME proprietors and management and staff with financial literacy skills that can improve financial management of SMEs and boost their financial performance. However, there is a gap in literature on the relationship between financial literacy and financial performance of SMEs. Most studies on financial literacy and SMEs focus on access to finance and financial management, with limited attention to the growth of SMEs (Agyei, Amponsah-Tawiah, & Obeng, 2020). Therefore, to bridge this gap, the current study seeks to establish the effect of financial literacy on growth of small and medium enterprises in Kigali city, Rwanda.

Studies show that over 70% of SMEs in Rwanda and Kigali city continue to struggle with limited growth (Twesige, 2020), which may be attributed to limited financial literacy among business owners and managers. According to the Private Sector Federation (2019), only 54% of SMEs in Rwanda have access to formal financing, and more than 76% experience challenges in managing their finances effectively (Mupensz, 2019). The problem is compounded by poor budgeting practices as well as poor record keeping which make SMEs vulnerable to lack of access to financing opportunities. It is reported (Private Sector Federation, 2019; Twesige, *et al*., 2020) that more than 70% of SMEs collapse because of poor business performance arising from poor budgeting, poor record keeping, and lack of adequate knowledge on financial access.

While several studies have indicated that financial literacy provides potential opportunities for enhancing the financial performance of SMEs in terms of profitability, liquidity and solvency (Mohd Said & Ab Rashid, 2018; Shimizu & Kawakatsu, 2019), there is a dearth of empirical research on this study in Rwanda, and specifically in Kigali city. Therefore, the study seeks to address how financial literacy contributes to the growth of SMEs in Kigali city, Rwanda.

The study was intended to examine the effect of financial literacy on the growth of small and medium enterprises in Kigali city, Nyarugenge district.
Specific objectives:

1. To assess the effect of budgeting literacy on growth of selected SMEs in Kigali city, Nyarugenge district.
2. To find out the effect of book-keeping literacy on growth of selected SMEs in Kigali city, Nyarugenge district.
3 To establish the effect of financial access literacy on growth of selected SMEs in Kigali city, Nyarugenge district.

Research hypothesis:

1. **$H_0$1:** Budgeting literacy has no significant effect on the growth of selected SMEs in Kigali city, Nyarugenge district.
2. **$H_0$2:** Book-keeping literacy has no significant effect on the growth of selected SMEs in Kigali city, Nyarugenge district.
3. **$H_0$3:** Financial access literacy has no significant effect on the growth of selected SMEs in Kigali city, Nyarugenge district.

2. Literature Review

2.1 Empowerment theory

The Empowerment Theory was developed by Julian Rappaport in the 1980s (Rappaport, 1984). This theory emerged from the field of community psychology and focuses on the process of empowering individuals and communities to take control over their lives and make informed decisions (Zimmerman, 2000). According to Rappaport (1987), the Empowerment Theory is based on three assumptions. First, it assumes that individuals have the capacity to change their circumstances and improve their well-being. Second, there is an assumption that empowerment involves gaining knowledge, skills, and resources to exert control over one's life. Third, that social systems and institutions should facilitate empowerment by providing opportunities and support.

In regard to financial literacy, the Empowerment Theory emphasizes the importance of financial education and access to resources to empower individuals to make informed financial decisions (Lusardi & Mitchell, 2019). According to Diaz-Garcia, *et al.* (2020), the empowerment theory has three key messages. First, it indicates that financial literacy is a fundamental component of empowerment and can enable individuals to take control of their financial well-being. Second, it emphasizes that financial education programs should provide individuals with the knowledge and skills to manage their personal finances effectively. Third, it proposes that access to financial resources, such as affordable banking services and credit, can enhance individuals' economic empowerment.

However, the empowerment theory has faced some criticisms. For example, Gutman (2005) argues that the theory places too much emphasis on individual responsibility and may overlook systemic factors that contribute to financial vulnerability and inequality. Additionally, Zimmerman and Warschausky (1998) argued that some critics contend that the theory lacks a clear framework for assessing and measuring empowerment outcomes.

Despite these criticisms, the Empowerment Theory remains relevant in the domain of financial literacy. It highlights the importance of providing individuals with the tools and resources to make informed financial decisions, ultimately leading to greater control over their financial lives. By addressing individual empowerment, financial education programs can play a crucial role in promoting financial literacy and empowering individuals to achieve their financial goals.

2.2 Socio-Economic Theory

The socio-economic theory, primarily developed by Lusardi and Mitchell in 2008, explores how individuals' financial knowledge influences their economic behaviors and decisions. The model has evolved to incorporate various aspects of socio-economic status, including income, education, and access to financial resources, to explain disparities in financial literacy and its impact on financial well-being. Over time, the theory has expanded to consider the influence of behavioral economics and psychological factors on financial decision-making (Lusardi, 2019).

The theory assumes that financial literacy is crucial for making informed financial decisions, which in turn affects economic outcomes such as saving, investing, and retirement planning. It posits that individuals with higher financial literacy are better equipped to manage their finances, avoid financial pitfalls, and achieve economic stability (Lusardi & Mitchell, 2014). The key argument is that improving financial literacy can lead to better financial outcomes and greater economic stability for individuals and households (Lusardi, 2019).

Criticisms of socio-economic theory include its focus on individual responsibility while potentially overlooking systemic factors that impact financial literacy, such as socio-economic disparities and educational inequalities (Huston, 2017). Some argue that the theory may oversimplify the relationship between financial literacy and financial outcomes, neglecting the complexity of personal and external factors influencing financial behaviors (Huston, 2017).

Empirical studies applying this theory often examine how variations in financial literacy affect financial behaviors across different socio-economic groups. For instance, research has shown that higher financial literacy correlates with better budgeting skills and savings behaviors, especially among higher-income individuals (Lusardi & Mitchell, 2014). Studies also investigate the effectiveness of financial education programs in improving financial literacy and their impact on economic behaviors (Bernheim, 2021).

The theory is relevant in studying the effect of financial literacy on the growth of SMEs, as it provides a framework for understanding how financial knowledge influences business management and growth. By examining the financial literacy of SME owners, researchers can assess how their financial skills affect business decisions, financial stability, and growth prospects (Lusardi, 2019). Understanding these dynamics can offer insights into how financial literacy programs might support the development and success of SMEs in the region.

2.3 Resource-Based View Theory of the Firm

The Resource-Based View (RBV) theory of the firm, developed by Jay Barney in 1991, proposes that a firm's competitive advantage and performance are derived from its unique resources and capabilities (Barney, 1991). Over the years, the RBV has evolved with contributions from scholars like Wernerfelt (1984) and Prahalad and Hamel (1990), who further refined the concepts of resource heterogeneity and core competencies. This evolution has emphasized the strategic importance of leveraging distinctive resources and capabilities to achieve sustained competitive advantage and organizational performance.

The RBV assumes that firms possess heterogeneous resources, which are not uniformly distributed across firms, and that these resources must be valuable, rare, inimitable, and non-substitutable (VRIN) for a firm to achieve a competitive edge (Barney, 1991). The key argument is that internal resources and capabilities are the primary drivers of a firm's strategy and performance, rather than external market conditions alone. This perspective shifts the focus from external market positioning to internal resource management as a source of competitive advantage.

However, the RBV has faced criticism for its limited empirical support and the challenge of operationalizing and measuring intangible resources effectively (Peteraf, 2019). Critics argue that the theory can be overly simplistic, often neglecting the dynamic nature of resource utilization and the role of external factors. Additionally, the RBV's emphasis on resource rarity and inimitability can be difficult to apply in practice, leading to debates about its practical utility and relevance.

Empirical studies applying the RBV have demonstrated its value in understanding how firms leverage unique resources for competitive advantage. For instance, research has shown that firms with strong intangible assets, such as brand reputation or specialized knowledge, can achieve superior performance compared to competitors (Zhao, *et al.,* 2022). These studies often use the RBV to analyze how resources contribute to strategic decision-making and organizational outcomes, providing insights into effective resource management.

The RBV is relevant in studying the effect of financial literacy on the growth of SMEs, as it can help identify how financial literacy as a unique resource influences the strategic capabilities and growth potential of SMEs. By applying this theory, researchers can explore how enhanced financial literacy enables SMEs to better manage their resources, make informed decisions, and achieve sustainable growth in a competitive environment.

2.4 Greiner's Growth Model

Greiner's Growth Model, developed by Larry E. Greiner in 1972, a seminal framework in understanding business growth. It outlines a pattern of organizational evolution through five distinct phases: creativity, direction, delegation, coordination, and collaboration. Each phase is marked by a period of stability followed by a crisis that necessitates organizational transformation (Greiner, 1972). The model was initially proposed to explain how companies grow and adapt to increasing complexity, and it has been refined over the years to accommodate modern business dynamics (O'Donnell, 2021).

The assumptions underlying Greiner's model include the notion that businesses experience predictable stages of growth, each requiring different management styles and organizational structures to overcome inherent crises. The key argument is that companies face inevitable challenges as they grow, which can only be resolved by transitioning to a new phase with different management approaches (Greiner, 1972). Greiner's model emphasizes the cyclical nature of growth and the need for adaptability in leadership and organizational design (Sweeney, 2022).

Despite its influence, Greiner's model has faced criticism for its oversimplification of organizational growth and its limited applicability to non-traditional business models. Critics argue that the model does not account for rapid technological changes or cultural variations that can significantly impact business growth. Furthermore, the model's linear progression is sometimes seen as too rigid, failing to address the complexities of modern, dynamic business environments (Anderson, 2018).

Empirical studies have applied Greiner's model to various contexts, demonstrating its relevance in understanding business growth patterns. For example, research has examined how businesses in different industries and regions navigate the crises described by the model, highlighting both its practical utility and limitations. These studies often use Greiner's framework to analyze organizational development and to propose strategies for managing growth-related challenges (Patel, *et al.,* 2022).

The model is relevant in researching the effect of financial literacy on the growth of SMEs by providing a framework for understanding how financial literacy influences different growth phases of SMEs. Financial literacy can be examined as a factor that impacts a business's ability to navigate the crises and transitions outlined in the model (Nduwimana, 2024). By integrating financial literacy into the phases described by Greiner, researchers can gain insights into how financial acumen contributes to overcoming growth-related challenges and facilitating successful business evolution.

2.5 Empirical review

A study by Wang and Liu (2021) found no significant relationship between expense management and business growth among SMEs in China. This research used a cross-sectional survey of 350 SMEs and applied structural equation modeling to analyze the data. Despite its large sample size, the study's short time frame and lack of exploration into long-term dynamics limit the generalizability of its findings. The research gap lies in the failure to capture potential long-term effects and other contributing factors, suggesting the need for future studies with longer durations and broader sector coverage.

The study by Tarus and Tarus (2024) assessed the mediating effect of financial behavior on the relationship between financial literacy and the performance of women-owned enterprises in rural Kenya. The research involved a sample of 219 respondents from 488 women-owned enterprises in Nandi County, using a combination of surveys and interviews to collect data. The study found that both investment and budgeting literacy significantly enhanced the performance of these enterprises, with financial behavior acting as a partial mediator. However, the study was limited by its regional focus, and future studies should consider a more diverse geographical scope to better understand these dynamics across different regions.

A study by Garcia and Martinez (2022) reported no significant relationship between financial goal setting and business growth among SMEs in Spain. The study surveyed 200 SMEs and applied statistical analysis to determine the correlation between goal setting and business growth. While it found no significant impact, the study was limited by its use of retrospective data, which could have introduced recall bias. To address this, future research should employ longitudinal designs to better capture the relationship between financial goal setting and long-term business growth.

In contrast, a study by Kim and Park (2020) reported a negative influence of financial allocation on business growth, suggesting that improper allocation decisions could harm SME profitability. The study focused on SMEs in South Korea and used a mixed-methods approach combining surveys and interviews. While the findings were valuable, the study's scope was limited to financial outcomes, and it did not account for industry-specific or cultural factors that might influence financial allocation practices. Future research should broaden the scope by considering these contextual elements to fully understand the impact of financial allocation on business growth.

A study by Brown and Wilson (2021) assessed the relationship between updating financial records and liquidity or solvency in SMEs. Their research, which surveyed 150 SMEs in manufacturing, found no significant relationship between financial record updates and liquidity or solvency. Despite using robust statistical methods, such as regression analysis, the study had limitations in generalizing its results due to its sector-specific focus. The research did not address possible endogeneity issues, which could suggest reverse causality. This underscores the need for more nuanced studies that investigate potential confounding factors and reverse causality between business growth and record keeping literacy.

Literacy on financial access also enables business firms to understand loan application procedures and this eases financial access and firm liquidity to finance their daily expenses and for long-term investment. For example, a study by Wang and Liu (2019) explored the impact of understanding loan application procedures on SME solvency. The study found that SMEs with a better understanding of loan application procedures were more likely to maintain higher solvency levels. However, the study was limited to solvency and did not measure profitability or liquidity. This points to the need for further research on how loan application knowledge affects various dimensions of SME financial performance.

Additionally, knowledge of financial access helps businesses to become familiar with financial inclusion initiatives by the government and other stakeholders, thus giving businesses a chance to access those funds and this enhances business growth. A study by Chen and Lee (2022) examined the relationship between SME familiarity with financial inclusion initiatives and liquidity. The study found that SMEs familiar with financial inclusion programs had improved liquidity due to greater access to affordable financial services. However, there were no empirical studies on the effect of financial inclusion familiarity on profitability or solvency. This indicates a significant gap in research, particularly in examining the broader impact of financial inclusion on different aspects of SME growth.

3. Methodology

3.1 Research Design

The research employed a descriptive and correlational design to explore the effect of financial literacy on the growth of small and medium enterprises (SMEs) in Rwanda, specifically in Nyarugenge District. A descriptive design was used to systematically capture and describe the financial literacy levels of SME owners and managers, as well as the characteristics of their businesses, providing a comprehensive overview of the current state of financial literacy within the selected SMEs. This design allowed for the collection of detailed, structured data through surveys, offering insights into the practices and challenges faced by the SMEs. The correlational design, on the other hand, was used to examine the extent to which financial literacy is associated with the growth of SMEs.

3.2 Target Population and Sampling

The target population of the study was 2,489 SMEs in Nyarugenge district that were registered by Rwanda Development Board. The sampling strategy was applied to the entire population of 2,489 from the three sectors of trade (1135), manufacturing (912) and services (442) where the selected SMEs operate. The appropriate sample size was determined using Yamane's simplified formula for calculating sample size (Israel, 2003) which is illustrated as:

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

Where:
n is the required sample size,
N is the target population,
e is the sampling error or level of precision,

Based on a 95% confidence interval as recommended by Israel (2003), the assumed sampling error for this population is .05 or 5%. The formula shows the computed sample size from 345 people.

$$n = \frac{N}{1 + N(e)^2} = \frac{2{,}489}{1 + 2{,}489(.05)^2}$$
$$= \frac{2{,}489}{1 + 2{,}489(.0025)} = \frac{2{,}489}{7.2225}$$
$$= 345$$

The total sample size from the 3 sectors was 345 respondents. To select the sample sizes using the rotary and number method with simple random sampling, This process ensured that the sampling process was unbiased and random. Each selected SME were then represented by their respective proprietors or designated representatives at the time of the study, guaranteeing representation of all sectors in the final sample size of 345 SMEs.

3.3 Data Collection Instruments

The questionnaire was used during primary data collection from the proprietors of the selected SMEs. It was constructed using a 5-point level of agreement Lickert Scale, where: 5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree and 1=Strongly Disagree for response items. The questionnaire was constructed with 5 sections. The questionnaire survey was preferred because it collects information from many respondents in a projected time frame. Only close-ended questions were used in the questionnaire because they are considered easy to answer.

3.4 Data Analysis

The researcher used Microsoft Excel and SPSS to analyze data. The analysis was based on both descriptive analysis (means and standard deviations) and inferential analysis (correlation and linear regression).

The researcher used means and standard deviations to describe the nature of responses on each of the response items under the study variables (budgeting literacy, record keeping literacy, financial access literacy and growth of SMEs).

In order to test the hypotheses and determine the statistical significance of the relationship between financial literacy and growth of SMEs, the researcher also conducted a multiple regression analysis. The regression model for this analysis is indicated below:

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

Where:
Y = Growth of SMEs
β_0 = Constant
$\beta_1 \ldots \beta_3$
= Regression coefficients for predictor variables relating to financ
X_1 = Budgeting literacy
X_2 = Record keeping literacy
X_3 = Financial accesss literacy
ε = Error term

3.5 Ethical Considerations

The researcher respected the confidentiality of all respondents by ensuring that their personal information and responses were protected and only used for the purpose of the study. The researcher ensured that all respondents were treated fairly, without bias, and that the selection of participants was done in a manner that did not discriminate against any individual based on factors such as gender, race, or socioeconomic status. The researcher upheld the protection of human dignity by respecting the autonomy of respondents. Each participant was given the right to choose whether to answer specific questions or to withdraw from the study at any time without any repercussions.

4. Results and Discussion

This section presents and analyses the findings generated from primary data. it can be observed that out of 345 respondents, 269 (80%) completed the survey. This is acceptable for academic research as evidenced by Dillman, Smyth, and Christian (2014) who stated that response rates above 50% are generally considered acceptable in survey research. Similarly, according to Groves (200), response rates between 50% and 60% can be considered reasonable and sufficient for most research purposes.

The inferential analysis for this was done based on the correlation analysis (Pearson Correlation coefficients) and multiple linear regression analysis.

4.1 Correlation Analysis

A Pearson correlation analysis was conducted to assess the level of association between financial literacy and growth of surveyed SMEs in Nyarugenge district 2021 to 2024. Table 1 shows the matrix for the correlation coefficients generated from the SPSS output.

Table 1: Pearson correlations matrix

Variables	N	X_1	X_2	X_3	Y
Budgeting literacy (X_1)	269	1			
Record keeping literacy (X_2)	269	.816**	1		
Financial access literacy (X_3)	269	.392**	.383**	1	
Growth of SMEs (Y)	269	.781**	.685**	.633**	1

**. Correlation is significant at the .01 level, p<.01 (2-tailed).

As Table 1 shows, it can be observed that budgeting literacy (X_1) is highly correlated with the growth of the surveyed SMEs (r=.781, N=269, p<.01). This indicates that as budgeting literacy changes by one unit, the growth of the surveyed SMEs in Nyarugenge also changes by .781 units (78.1%). Similarly, data shows that record keeping literacy (X_2) is strongly and positively associated with growth of the surveyed SMEs (r=.685, N=269, p<.01). This suggests that when there is a 1-unit variation in record keeping literacy, the growth of the surveyed SMEs also changes by .685 units (68.5%). Furthermore, data also shows that financial access literacy (X_3) was highly correlated with growth of the surveyed SMEs (r=.633, N=269, p<.01). This indicates that the growth of the surveyed SMEs changes by .633 units (63.3%) in proportion to a unit change in knowledge of financial access.

4.2 Regression Analysis

Multiple linear regression was utilized to assess the effect of budgeting literacy (X1), record keeping literacy (X2), and financial access literacy (X3) as predictor variables on the growth of the surveyed SMEs in Nyarugenge district from 2021 to 2024. Additionally, this analysis aimed to quantify the individual effect of each predictor variable towards the outcomes of SMEs' business growth.

4.2.1 Regression Model Summary

The summary of the regression model (Table 2) presents the overall correlation between financial literacy and growth of the surveyed SMEs. It also reveals the general effect of financial literacy on the growth of SMEs that were covered by the study.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.859[a]	.737	.734	.23381

a. Predictors: (Constant), BL, RL, FL

b. Dependent variable: Growth of SMEs (GS)

Source: Field data, 2024

Table 2: Model Summary provides key statistics regarding the regression analysis conducted to assess the relationship between several independent variables (BL, RL, FL) and the dependent variable, Growth of SMEs (GS). The R value of 0.859 indicates a strong positive correlation between the predictors (BL, RL, FL) and the growth of SMEs. The R Square value of 0.737 suggests that approximately 73.7% of the variance in the growth of SMEs can be explained by the independent variables included in the model, indicating a good fit for the regression model. The Adjusted R Square value of 0.734 accounts for the number of predictors in the model and still indicates a strong explanatory power of the model. Finally, the Standard Error of the Estimate is 0.23381, which represents the average distance that data points fall from the regression line, providing an idea of the accuracy of the predictions. The findings revealed that the independent variables (BL, RL, and FL) have a significant relationship with the growth of SMEs, explaining a substantial portion of the variation in the dependent variable.

4.2.2 Analysis of Variance

Table 3 shows the analysis of variance (ANOVA), which illustrates the suitability of the regression model in explaining the regression outcomes.

Table 3: Analysis of variance (ANOVA[a])

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.657	3	13.552	247.898	.000[b]
	Residual	14.487	265	.055		
	Total	55.144	268			

a. Dependent variable: Growth of SMEs (GS)

b. Predictors: (Constant), Financial Access Literacy, Record-keeping Literacy, Budgeting Literacy

Source: Field data, 2024

Table 3 presents the statistical significance of the regression model used to predict the Growth of SMEs (GS) based on the predictors Financial Access Literacy (FL), Record-keeping Literacy (RL), and Budgeting Literacy (BL). The total variation in the dependent variable is 55.144, with 40.657 explained by the regression model and 14.487 remaining as residuals. The model has 3 degrees of freedom for the predictors and 265 degrees of freedom for the residuals. The Mean Square for regression is 13.552, and for residuals, it is 0.055, resulting in an F-value of 247.898. The p-value (Sig.) of 0.000 indicates that the model is significant at the 0.05 level. This means that the predictors collectively explain a significant portion of the variance in SME growth, confirming that Financial Access Literacy, Record-keeping Literacy, and Budgeting Literacy are strong and meaningful contributors to the growth of SMEs in the study. The implication of these findings is that enhancing these literacy skills among SME owners and managers could have a substantial positive impact on the growth of SMEs, highlighting the importance of integrating financial education, record-keeping practices, and budgeting skills into development programs for SMEs.

4.2.3 Regression coefficients

The regression coefficients in Table 4 show the effect of budgeting literacy, record keeping literacy and financial access literacy towards variation in the growth of SMEs in Nyarugenge district between 2021 and 2024.

Table 4: Regression coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.615	.162		-3.784	.000
	Budgeting Literacy	.507	.049	.575	10.347	.000
	Record-keeping Literacy	.058	.046	.070	1.261	.205
	Financial Access Literacy	.495	.045	.381	11.000	.000

a. Dependent Variable: Growth of SMEs

Table 4 reveals the impact of budgeting literacy, record-keeping literacy, and financial access literacy on the growth of SMEs (GS). Budgeting literacy shows the strongest effect with an unstandardized coefficient of 0.507 and a standardized coefficient (Beta) of 0.575, indicating that for every one-unit increase in Budgeting Literacy, SME growth increases by 0.507 units. This relationship is significant (p = 0.000), suggesting that improved budgeting skills are crucial for the growth of SMEs. Financial Access Literacy also has a significant positive effect, with an unstandardized coefficient of 0.495 and a Beta of 0.381, indicating that better financial access knowledge can enhance SME growth. However, Record-keeping Literacy has a relatively weak and insignificant impact on SME growth (p = 0.205), with an unstandardized coefficient of 0.058 and a beta of 0.070, suggesting that while important, record-keeping literacy may not have as significant role in driving SME growth as budgeting and financial access literacy. These findings imply that improving Budgeting Literacy and Financial Access Literacy could be more effective strategies for promoting SME growth, while enhancing record-keeping literacy remains valuable but may not be as central in this context.

4.3 Hypotheses Testing

To test the hypotheses using the regression coefficients in Table 4, the researcher analyzed the statistical significance of the effect of each independent variable (budgeting literacy, record keeping literacy, and financial access literacy) on the dependent variable (the growth SMEs).

H01 (Budgeting literacy has no significant relationship with the growth of SMEs in Nyarugenge) is rejected because the p-value (0.000) is less than the significance level of 0.05, indicating that there is a significant relationship between Budgeting Literacy and SME Growth.

H02 (Record-keeping literacy has no significant relationship with the growth of SMEs in Nyarugenge) is accepted because the p-value (0.205) is greater than 0.05, suggesting there is no significant relationship between Record-keeping Literacy and SME Growth.

H03 (Financial access literacy has no significant relationship with the growth of SMEs in Nyarugenge) is rejected because the p-value (0.000) is less than 0.05, indicating that Financial Access Literacy has a significant relationship with SME Growth.

4.4 Discussion of Findings

The purpose of this study was to examine the effect of budgeting literacy, record keeping literacy, and financial access literacy on the growth of small and medium enterprises (SMEs) in Nyarugenge district, Kigali city, Rwanda. The results of the regression analysis revealed some interesting findings.

Firstly, the findings indicated that budgeting literacy has a significant effect on the growth of surveyed SMEs in Nyarugenge district. This finding aligns with previous research studies that have emphasized the importance of budgeting skills in achieving business growth (Smith & Johnson, 2018; Brown et al., 2020). Budgeting skills enable SMEs to allocate their resources efficiently, set realistic financial goals, and make informed financial decisions. Therefore, the positive impact of budgeting skills on the growth of SMEs in this study supports the existing literature.

Secondly, the results indicated that record keeping literacy has no significant effect on the growth of surveyed SMEs Nyarugenge district. This finding is inconsistent with prior research which highlights the significance of accurate and well-maintained financial records for SMEs (Jones & Miller, 2019; Lee & Chen, 2021). Proper record keeping enables businesses to track their income, expenses, and overall financial health, facilitating informed decision-making and effective financial management. Therefore, finding contradicts the importance of maintaining robust record keeping practices among SMEs to enhance their business growth.

The study also found that financial access literacy had a significant effect on growth of the surveyed SMEs Nyarugenge district. This finding deviates from some previous studies that have not found a direct link between financial access literacy and business growth (Wang & Li, 2017; Johnson et al., 2019). It is important to note that the findings of this study are specific to the context of SMEs in Nyarugenge district. The unique economic and financial landscape of the region, coupled with the specific characteristics of the surveyed SMEs, might have contributed to this differing result. Further research is needed to explore this relationship in different contexts and assess the mechanisms through which knowledge of financial access literacy affects the growth of SMEs.

5. Conclusion and Recommendations

5.1 Conclusion

The findings highlight the significance of budgeting literacy among surveyed SMEs in Nyarugenge district. While the majority demonstrated knowledge in this area, a notable gap existed in effectively allocating financial resources across business priorities. This revealed a vulnerability to suboptimal fund utilization, potentially hampering competitiveness and sustainable business growth.

Similarly, although respondents generally exhibited proficient record keeping skills, a deficiency was identified in reconciling their financial statements with their bank account records. This shortfall could undermine financial transparency within the surveyed businesses.

Furthermore, the study underscored the importance of comprehensive financial access literacy for SMEs. While a majority displayed knowledge of financial services and procedure for access, a portion lacked a thorough understanding of certain banking concepts. This knowledge gap may lead to missed opportunities and heightened operational risks.

In terms of statistical significance, two predictors under financial literacy – budgeting literacy, and financial access literacy - were found to have a significant effect on the growth of the surveyed SMEs in Nyarugenge district while record keeping literacy showed no significant effect on business growth among those SMEs.

The research contributes to the understanding of how financial literacy affects the growth of SME, emphasizing the need for targeted training and support in budgeting, record keeping, and understanding of financial access. These findings hold relevance for policymakers, financial institutions, and business support organizations striving to enhance SME success.

5.2 Recommendations

1. SMEs in Nyarugenge district should invest in enhancing their financial resource allocation skills to optimize fund utilization, targeting business owners and managers.
2. Business owners and managers of SMEs in Nyarugenge district should prioritize developing effective financial reconciliation capabilities with bank records for enhanced financial transparency.
3. Stakeholders involved in SME support programs should focus on improving banking literacy among business owners in Nyarugenge district to maximize financial opportunities and minimize risks.

5.3 Areas for Further Research

There is need to conduct mixed methods research on the same topic in order to generate rich data from different sources including interviews, focus group discussions, surveys, etc which will improve validity and reliability of findings. Future research should focus on firms of different sizes (including micro, small, medium and large enterprises) and cover the whole country to improve the reliability and validity of findings.

References

Agyei, R. K., Amponsah-Tawiah, K., & Obeng, S. A. (2020). Financial literacy, financial access and performance of micro and small enterprises in Ghana. *Journal of African Business, 21*(1), *73-89.*

Alsmadi, S., & ElGammal, W. (2019). Financial literacy and access to finance among Jordanian SMEs. *The Journal of Developing Areas, 53(1), 49-60.*

Anderson, T. (2018). Revisiting Greiner's Growth Model: Contemporary applications and critiques. *Journal of Business Research, 92, 47-55.*

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17(1), 99-120.*

Bernheim, B. D. (2021). Financial literacy and retirement savings. *Journal of Economic Perspectives, 35(3), 89-106.*

Brown, K. L., & Wilson, M. C. (2021). Knowledge of budgeting techniques and strategies. *Financial Education Quarterly, 48(4), 320-335.*

Bwalya, S. M., & Mulenga, M. C. (2019). Financial literacy and financial performance of SMEs in Zambia. *Journal of Financial Reporting and Accounting, 17(1), 36-48.*

Chen, H., & Lee, S. (2022). Familiarity with financial inclusion initiatives and SME liquidity: A survey-based analysis. *International Journal of Business and Finance Research, 16(2), 52-69.*

Chen, H., & Volpe, R. P. (2022). An analysis of personal financial literacy among college students. *Financial Services Review, 7(2), 107-128.*

Diaz-Garcia, C., Gonzalez-Morales, O. E., & Neely, B. H. (2020). Financial literacy and financial empowerment. *In F. M. Arkenberg, J. L. Chaback, & J. A. Billingsley (Eds.), Handbook of Research on Social and Economic Empowerment through Sustainment Practices (pp. 314-330).* IGI Global.

Greiner, L. E. (1972). *Evolution and revolution as organizations grow*. Harvard Business Review, 50(4), 37-46.

Gutman, M. A. (2005). Empowerment: A critique. *Journal of Progressive Human Services, 16(2), 9-42.*

Huston, S. J. (2017). Measuring financial literacy. *Journal of Consumer Affairs, 51(2), 255-283.*

Irikefe, P. O., & Opusunju, M. I. (2021). Effect of financial literacy on the growth of micro, small, and medium enterprises (MSMEs). *International Journal of Research Publications, 384–392.*

Ismail, S., Yusof, R. M., & Jusoff, K. (2018). The impact of financial literacy on financial management practices and financial performance among SMEs in Malaysia. *International Journal of Academic Research in Business and Social Sciences, 8(7), 876-888.*

Israel, G. D. (2003). *Determining sample size, PEOD-6*. Program Development and Evaluation Center, University of Florida (UF)/ Institute of Food and Agricultural Sciences (IFAS) Extension, Gainesville, FL 32611. Retrieved June 9, 2022, from http://edis.ifas.ufl. edu/pd006.

Johnson, A., Martinez, L., & Garcia, R. (2018). Awareness of credit scores and SME liquidity: Empirical evidence from a survey of small business owners. *Journal of Small Business Finance, 27*(2)*, 34-49.*

Johnson, P., & Smith, R. (2018). The impact of tracking financial transactions on SME performance. *Journal of Small Business Economics, 51(2), 427-446.*

Johnson, R., & Brown, S. (2019). Knowledge of available financial products/services and SME financial performance: A liquidity and solvency perspective. *International Journal of Entrepreneurial Behavior & Research, 25(5), 1096-1114.*

Jones, R., & Brown, K. (2019). Enhancing SME profitability through cost management strategies. *International Journal of Economics, Commerce, and Management, 7(6), 204-217.*

Kim, J., & Park, M. (2020). The impact of financial allocation on SME financial performance: Evidence from manufacturing firms. *Small Business Economics, 55(1), 227-245.*

Kyereboah-Coleman, A., & Biekpe, N. (2018). Financial management practices of SMEs: Evidence from Ghana. *Journal of African Business, 19(3), 361-376.*

Lee, C., & Chen, D. (2020). The relationship between income estimation accuracy and financial performance: Evidence from SMEs. *International Journal of Entrepreneurial Behavior & Research, 26(5), 1020-1037.*

Lusardi, A. (2019). Financial literacy and the need for financial education: Evidence and implications. *National Bureau of Economic Research Working Paper Series*.

Lusardi, A., & Mitchell, O. S. (2008). Planning and financial literacy: How do women fare? *American Economic Review, 98(2), 413-417.*

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature, 52(1), 5-44.*

Lusardi, A., & Mitchell, O. S. (2019). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature, 52*(1), 5-44.

Mohd Said, N., & Ab Rashid, R. (2018). Financial literacy and SME performance in Malaysia. *International Journal of Economics, Commerce, and Management, 6(10), 24-33.*

Mupenzi, J. (2019). The Role of Small and Medium Enterprises (SMEs) in Rwanda. *International Journal of Economics, Commerce and Management, 7(5), 11-21.*

Muradoglu, Y. G., & Sivaprasad, S. (2018). Financial literacy and financial well-being in Europe: A cross-country analysis. *International Journal of Banking and Finance, 11(1), 63-87.*

Nduwimana, R. (2024). The role of financial literacy in overcoming growth crises in SMEs. *African Business Review, 15(3), 200-215.*

NISR (2020). *Establishment Census 2020: Thematic Report on Gender February, 2022*.

O'Donnell, C. (2021). Greiner's Growth Model in the digital age: Evolution and implications. *Business Strategy Review, 32(2), 12-20.*

Patel, K., Kumar, A., & Adams, L. (2022). Empirical applications of Greiner's Growth Model: A review. *Journal of Organizational Behavior, 43(5), 459-478.*

Peteraf, M. A. (2019). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Review, 23(4), 1127-1150.*

Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review, 68(3), 79-91.*

Private Sector Federation. (2019). *PSF Annual Business Development Report 2019. Kigali, Rwanda*.

, J. (1984). Studies in empowerment: Introduction to the issue. *Prevention in Human Services*, *3*(2-3), 1-7.

Rappaport, J. (1987). Terms of empowerment/exemplars of prevention: Toward a theory for community psychology. *American Journal of Community Psychology, 15(2), 121-148.*

Shimizu, M., & Kawakatsu, H. (2019). Financial literacy of SMEs and the impact on financial decision making: A study in Japan. *Journal of Asian Finance, Economics and Business, 2(2), 5-14.*

Smith, P., & Johnson, K. (2018). The Role of Financial Access in Enhancing SME Competitiveness. *International Journal of Entrepreneurial Behavior & Research, 24(5), 1003-1021.*

Sweeney, J. (2022). *Greiner's Growth Model: Adaptations and criticisms in modern business contexts*. Management Decision, 60(9), 2345-2360.

Tijani, K. M., Ngowi, A. V., & Hassan, Z. (2021). Financial literacy and its impact on SME performance in Tanzania: A study in Dar es Salaam. *Journal of Finance and Economics, 9(2), 123-135.*

Liu, Y., & Li, C. (2020). Conceptual literature review on Kano model: Mapping of its historical development and future directions. *Technological Forecasting and Social Change, 158, 120152.*

Wang, Q., & Liu, S. (2019). The impact of knowledge of loan application procedures on SME solvency: Evidence from a survey of Chinese firms. *Journal of Small Business Finance, 26(3), 58-75.*

Wang, Y., & Liu, M. (2021). The impact of expense management on SME financial performance: Evidence from a developing country. *Journal of Business Research, 115, 165-177.*

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal, 5(2), 171-180.*

Wilson, M., & Adams, B. (2019). Market opportunities and SME profitability: The role of entrepreneurial orientation and environmental uncertainty. *Journal of Small Businesses, 11(3), 25-41*

Zhao, X., Hsu, C., & Liu, X. (2022). The impact of intangible resources on firm performance: An empirical study. *Journal of Business Research, 139, 110-119.*

Zimmerman, M. A. (2000). Empowerment theory: Psychological, organizational, and community levels of analysis. *In J. Rappaport & E. Seidman (Eds.), Handbook of Community Psychology (pp. 43-63)*. Springer.

Zimmerman, M. A., & Warschausky, S. (1998). Empowerment theory for rehabilitation research: Conceptual and methodological issues. *Rehabilitation Psychology, 43(1), 3-16.*