MAKERERE UNIVERSITY

MAKERERE UNIVERSITY BUSINESS SCHOOL

ACCESS TO FINANCE, TECHNOLOGY COST AND FINANCIAL PERFORMANCE OF SMEs IN UGNANDA. A CASE OF SELECTED SMEs IN ARUA CITY

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A DISSERTATION SUBMITTED TO MAKERERE UNIVERSITY BUSINESS SCHOOL (FACULTY OF GRADUATE STUDIES AND RESEARCH) IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION OF MAKERERE UNIVERSITY

PLAN A

JUNE, 2025

DECLARATION

I **Kissah Verous**, declare that this dissertation is my own original piece of work. Any assistance that I have received has been duly acknowledged in the research proposal. It is submitted I the partial fulfilment of the requirement for the award of the degree of master of Business administration of Makerere University. This dissertation has not been submitted before for any degree or examination at any institution of higher learning.

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APPROVAL

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ABSTRACT

This study investigates the relationship between access to finance, technological costs, and the financial performance of SMEs in Uganda, focusing on selected SMEs in Arua City. The research aims to address the problem of inadequate financial performance among SMEs despite their significant contributions to the economy. The primary objectives are to examine the relationship

between access to finance and financial performance, evaluate the impact of technological costs on financial performance, and assess the combined effect of these factors.

A cross-sectional quantitative survey design was employed, targeting a population of 120 SMEs from which a sample size of 92 SMEs was determined using the Krejcie and Morgan (1970) table. Data were collected using structured questionnaires distributed to individuals responsible for financial management within the SMEs. The data were analyzed using SPSS

The findings revealed a positive and significant relationship between access to finance and financial performance, with access to finance showing a strong influence on profitability and growth. Technological costs also exhibited a significant positive relationship with financial performance, particularly in terms of organizational capacity and change management. The regression analysis demonstrated that both access to finance and technological costs significantly predict financial performance, with technological costs having a slightly stronger impact.

Major findings indicated that improved access to finance enables SMEs to invest in operations, expand market presence, and implement strategic initiatives, thereby boosting financial performance. Similarly, strategic investments in technology enhance operational efficiency, productivity, and competitiveness, leading to better financial outcomes. The combined effect of access to finance and technological costs accounted for 55.3% of the variance in financial performance, underscoring the critical importance of these factors. Based on these findings, it is recommended that policymakers create supportive financial regulations to reduce collateral requirements for SME loans and that financial institutions design affordable and flexible financial products tailored to SMEs. Additionally, SMEs should establish dedicated technology investment funds and develop training programs to enhance digital literacy and technological proficiency among employees. These strategies will enable SMEs to optimize their financial resources, invest in technology effectively, and sustain long-term growth and profitability.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter covers the background, statement of the problem, objectives of the study, research questions, scope of the study, significance of the study and conceptual framework.

1.1 Background

Good financial performance is essential for every company to survive (Kotey and Koomson, 2019), and Ugandan SMEs are not an exception. A company's ability to earn revenue from its principal mode of operation and employ its assets is measured by its financial performance. According to Bae and Skaggs (2017), it is a thorough assessment of a business's entire position with regard to factors including revenue, liabilities, costs, assets, equity, and overall profitability. Globally, SMEs are recognized as engines of economic growth, showcasing impressive financial performance across diverse markets, as indicated by Ylvije & Elez (2019). Research conducted by Houza and Fanis (2021) comparing SMEs in developed countries like the United States, Germany, and Japan with those in sub-Saharan regions highlights the substantial contribution of SMEs to GDP and employment opportunities. Moreover, SMEs in these countries often exhibit resilient financial performance, enabling them to thrive in dynamic and competitive markets. Through innovative strategies and agile decision-making, SMEs sustain steady growth and profitability on a global scale (Yunggar, 2021). Effective capitalization on opportunities, prudent risk management, and leveraging technology contribute to their financial success.

Research by Casagrande (2016) on the influence of access to finance on SMEs in sub-Saharan Africa, and similar studies by Chamwanda (2015) in South Africa, indicate a positive correlation between financial access and SMEs' financial performance. However, research by Gothil and Bonny (2018) in war-affected African countries suggests an insignificant relationship between financial access and financial performance.

Studies by Black et al. (2001), Annette (2018), Honni (2019), Lorra (2023), and Fonno (2018) highlight the positive impact of technological investment on SMEs' financial performance.

However, a study by Homme (2019) suggests otherwise, although conducted in a developed country like Norway with advanced technological infrastructure.

While there's no generally fixed definition of SMEs, common criteria include the number of employees, asset value, sales value, and capital size, as discussed by Otieno et al. (2016), and Derbyshire (2016). In Uganda, SMEs are defined based on both employment numbers and annual turnover (Turyahebwa, Sunday, & Ssekajugo, 2013). They contribute significantly to Uganda's economy, with over 90% of non-farm private sector employment attributed to them. However, challenges such as high collapse rates within the first year, as indicated by Arinaitwe and Mwesigwa (2015), often stem from weak financial performance. This poses obstacles to their goals and expenses, making it challenging for SMEs to expand operations (Dewi and Rahman, 2018).

In Uganda context, SMEs are demonstrating commendable financial performance amidst challenges, showcasing resilience and creativity (Ngoli et al., 2018). However there was fluctuations in the economic landscape, these enterprises exhibit notable growth and stability. Strategic financial planning and proactive adaptation to market dynamics have been instrumental, as highlighted by Eton, Mwosi, Mutesigensi, & Ebong (2017), in sustaining profitability and achieving success. The ability to adjust to changing circumstances and implement efficient cost management practices has bolstered their market position. SMEs in Uganda play a pivotal role in the economy, contributing significantly to its financial framework, as noted by Osunsan (2018). Their enduring success underscores their adaptability, perseverance, and entrepreneurial spirit amidst adversity (Nahamwe et al., 2015).

Effective financial performance is essential for the sustainability and growth of small and medium-sized enterprises (SMEs). Key metrics such as profitability, growth, and return on investment (ROI) are crucial for evaluating an SME's financial health and success. Profitability measures the

ability to generate income relative to expenses, growth assesses the expansion and scaling potential of the business, and ROI evaluates the efficiency of investments in generating returns. By analyzing these indicators, businesses can gauge their financial stability, make informed decisions, and strategically plan for future success. Understanding and enhancing the financial performance of SMEs is essential for fostering economic development and ensuring their continued success. Scholars like Bongomin, Munene, and Ntayi (2016) and Abenako and Muneri (2023) highlight the financial struggles faced by SMEs in Uganda, including inadequate operating finances and profitability challenges, hindering their competitiveness and growth. Atuhaire (2022) points out that due to financial performance challenges, a significant percentage of SMEs collapse within a few years of establishment. Therefore, comprehensive studies on the financial performance of SMEs are crucial for Uganda, especially considering the high rates of solvency among them (Turyahikayo, 2015).

1.2 Problem Statement

"In Uganda, SMEs sector plays a vital role in the economy, providing income and employment to a large segment of the population, as noted in the National Small Business Survey of Uganda (2015). The survey indicated that SMEs contribute 90% of private sector output and employ over 2.5 million people. Despite their importance, SMEs face considerable challenges that hinder their financial performance, including limited access to funding, profitability concerns, obstacles to growth, and low investment returns. Research by Turyahikayo (2021) emphasizes that many SMEs struggle to obtain the funds necessary for daily operations, primarily due to insufficient collateral and difficulties in securing long-term financing. A report from the Daily Monitor (August 5, 2021) highlighted that 36% of SMEs were unable to cover their operational costs, especially in the wake of the COVID-19 pandemic. Furthermore, statistics from the Private Sector Foundation Uganda

(2021) reveal that only 5% to 10% of SMEs in Arua survive to maturity, with many failing due to issues with debt repayment and high technology costs. If these challenges are not addressed, there is a risk of a significant decline in the number of SMEs in the near future, leading to reduced employment opportunities, lower economic growth, and a weakened private sector. Understanding the financial struggles of SMEs and their root causes, particularly the role of access to finance, is crucial for designing effective policy interventions, improving financial inclusion, and fostering SME resilience. Besides, technological costs are also important to be accessed to see how they influence the performance of SMEs in Uganda. Addressing these issues will not only enhance the sustainability of SMEs but also contribute to broader economic stability, innovation, and entrepreneurship in Uganda."

1.3 Purpose of the study

The purpose of this study will be to investigate how access to finance and technology cost influence financial performance of SMEs in Arua City.

1.4 Objectives of the study

i. To establish the relationship between access to finance and financial performance of SMEs in Uganda
ii. To establish the relationship between technological cost and financial performance of SMEs in Uganda.
iii. To establish the combined effect of access to finance and technological cost on the financial performance of SMEs in Uganda.

1.5 Research questions

i. What is the relationship between access to finance and financial performance of SMEs in Uganda?

ii. What is the relationship between technological cost and financial performance of SMEs in Uganda?

iii. What is the combined effect of access to finance and technological cost on the financial performance of SMEs in Uganda?

1.6 Scope of the Study

1.6.1 Subject Scope

The study aims to evaluate how access to finance and technological costs impact the financial performance of SMEs in Uganda.

1.6.2 Geographical Scope

The study was carried out in Arua City, focusing on selected SMEs within this area. Arua City was chosen due to its status as a rapidly expanding commercial hub in Uganda, strategically situated near the borders of South Sudan and the Democratic Republic of Congo. This unique location positions Arua City as a vibrant trade and commerce center, with a diverse array of SMEs making substantial contributions to the local economy. Additionally, the city's dynamic market environment, which includes both opportunities and challenges such as limited access to finance and regulatory complexities, offers a valuable context for examining the factors affecting the financial performance of SMEs in a developing region.

1.6.3 Time Scope

This study was carried out between January 2024 to August 2024.

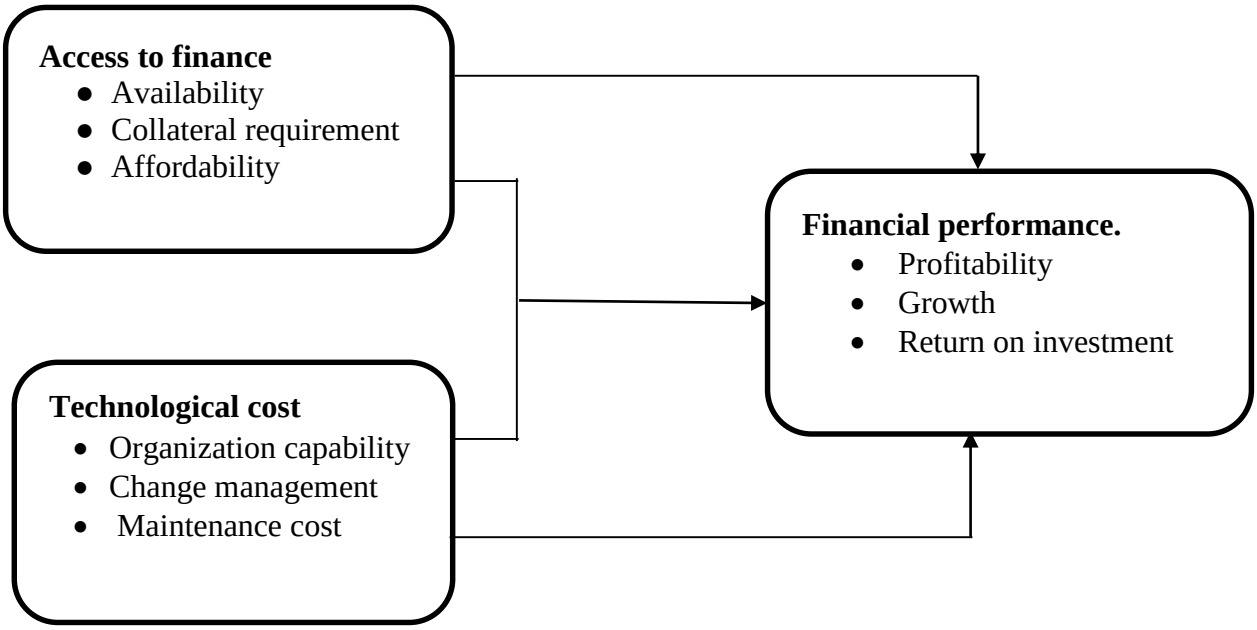
1.7 Significance of the Study

i. The study's findings may provide valuable insights for SME business owners and managers, helping them grasp the significance of access to finance and technology costs on their financial performance.

ii. Policymakers, including government officials, can utilize the research findings to formulate effective policies or programs concerning access to finance and technological expenses.

iii. Academics seeking to conduct further research on financial performance within organizations may benefit from the literature generated by this study, finding it invaluable for their endeavors.

1.8 Conceptual Framework



Source: Adapted from Rolls (2019), Ahmed and Salkols (2020) and Momin (2020)

The model illustrates that access to finance could have a direct influence on the financial performance of SMEs. Additionally, it suggests that technological costs may directly affect the financial performance of SMEs in Uganda. Furthermore, the model suggests that when access to finance and technological costs are combined, they collectively influence the financial performance of SMEs.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter consists of the theory, explanation of the variables and the relationship between the variables.

2.1 Resource-Based Theory

According to resource-based theory, a company's competitive edge and performance stem from its distinctive set of resources and capabilities, which are valuable, rare, difficult to replicate, and irreplaceable (Bradley, 2015). In the SME context, access to finance and technological resources are crucial elements of their resource arsenal. Viewing the relationship between access to finance, technology costs, and SME financial performance through the lens of resource-based theory offers valuable insights into how these factors interact and contribute to competitive advantage and ongoing profitability.

Access to finance stands as a foundational resource enabling SMEs to invest in technology and other strategic endeavors that enhance their competitiveness and performance (Newbert, 2017). Sufficient financial resources empower SMEs to procure essential technology assets like hardware, software, and digital infrastructure, as well as to engage in research and development efforts to innovate and differentiate their offerings. Moreover, access to finance provides SMEs with the agility to seize market opportunities and navigate challenges, such as expanding operations, entering new markets, or weathering economic downturns, all of which can impact financial performance (Zahra, Neubaum, & Hayton, 2020).

However, the costs associated with technology acquisition and implementation can present significant hurdles for SMEs, especially those with limited financial resources and capabilities

(Radjou & Prabhu, 2015). High technology expenses might deter SMEs from investing in innovative technologies or upgrading existing systems, potentially impeding their ability to compete effectively. Furthermore, the complexity and rapid obsolescence of technology solutions could compound cost pressures for SMEs as they strive to keep pace with technological advancements while managing constrained budgets and expertise (Ramaswamy & Gouillart, 2020).

Despite these challenges, resource-based theory indicates that SMEs can strategically leverage their access to finance and technology resources to achieve superior financial performance (Shieber, 2021). By judiciously allocating financial resources toward technology investments aligned with strategic objectives and core competencies, SMEs can enhance operational efficiency, productivity, and quality, thereby fostering revenue growth and cost efficiencies. Additionally, SMEs that nurture internal capabilities to effectively leverage technology, such as providing digital skills training for employees or forging partnerships with technology vendors, can establish a sustainable competitive advantage contributing to long-term financial success (Ramaswamy & Gouillart, 2020).

Hsu et al. (2017) assert that resource-based theory underscores the importance of complementarity and integration among various resources and capabilities within the firm. SMEs that adeptly integrate access to finance with technology resources and other organizational assets, such as human capital, customer relationships, and brand reputation, can generate synergies amplifying the impact on financial performance (Gupta, Nadkarni, & Mariam, 2019). For instance, investing in technology-driven customer relationship management systems may enhance customer satisfaction and retention, ultimately leading to increased sales and profitability.

Viewing the relationship between access to finance, technology costs, and SME financial performance through the lens of resource-based theory underscores the strategic significance of these resources in driving competitive advantage and sustained profitability. While access to finance provides SMEs with the means to invest in technology and other strategic endeavors, the costs associated with technology acquisition and implementation require careful management and resource allocation. By effectively leveraging their financial and technological resources and integrating them with other organizational capabilities, SMEs can enhance their competitiveness, adaptability, and overall financial performance.

2.2 Financial Performance

Understanding financial performance within the realm of Small and Medium Enterprises (SMEs) holds paramount importance for gauging their sustainability, growth potential, and overall economic impact (Alshehhi, Nobanee & Khare, 2018). Scholars have offered diverse interpretations of financial performance, reflecting its intricate nature and the varied metrics employed to evaluate it. Financial performance encompasses SMEs' capacity to generate profits, manage expenditures, and efficiently allocate resources to accomplish strategic goals. For instance, Alam, Said & Zamri (2018) define financial performance as the measure of a firm's proficiency in generating profits from its operations and investments, indicating its efficacy and efficiency in utilizing resources to generate value. This definition underscores the pivotal role of profitability as a fundamental gauge of SMEs' financial well-being and continuity.

However, other scholars, such as Kaplan, Brummel, Litan & Schramm (2017), advocate for a more holistic approach by introducing the Balanced Scorecard concept. This framework integrates non-financial metrics like customer satisfaction, internal processes, and innovation alongside traditional financial measures to offer a comprehensive perspective on organizational performance.

They argue that focusing solely on financial indicators may overlook crucial aspects of SMEs' performance that contribute to their long-term viability and competitiveness.

Moreover, Boakye et al. (2020) stress the significance of contextual factors in appraising financial performance, suggesting that SMEs should be evaluated against industry peers and assessed within the broader economic and market landscapes in which they operate. This contextual viewpoint acknowledges that financial performance cannot be evaluated in isolation but must be considered relative to external influences that may impact SMEs' operations and outcomes.

Additionally, scholars like Ittner and Larcker (1998) introduce the concept of value-based performance metrics, which concentrate on creating shareholder value through efficient capital allocation and strategic decision-making. They argue that conventional financial measures might not fully capture the value generated by SMEs, especially in dynamic and competitive markets where intangible assets and strategic capabilities play pivotal roles in driving performance (Kim, Chang & Kim, 2023).

Financial performance for SMEs is a multidimensional construct shaped by profitability, operational efficiency, strategic alignment, and contextual influences, necessitating a comprehensive approach that integrates both financial and non-financial metrics to provide a thorough evaluation of SMEs' overall health and performance in today's dynamic business environment.in today's dynamic business landscape (Nason & Wiklund, 2018).

2.3 Access to finance

Access to finance is a critical determinant of Small and Medium Enterprises' (SMEs) ability to thrive in the modern economic landscape. Defined by various scholars, this concept encompasses more than just the availability of funds. It encapsulates the entire ecosystem surrounding financial

services for SMEs. The World Bank (2023) characterizes it as the ease with which firms and individuals can obtain financial services and products, including credit, deposits, payment services, and insurance. This definition emphasizes the importance of a broad range of financial tools in supporting SMEs. De Haas, Naaborg, (2020) extend this perspective, emphasizing not only the availability but also the actual utilization of financial services. They highlight the role of institutional environments, such as legal frameworks and regulatory mechanisms, in shaping access to finance for SMEs. This broader view recognizes that access to finance is not solely about the existence of financial products but also about the supportive infrastructure that facilitates their use. Furthermore, Appio et al. (2020) emphasize the affordability and suitability of financial services, suggesting that mere availability is insufficient if SMEs cannot access them on favorable terms or if the services do not meet their specific needs. These scholars collectively argue that access to finance for SMEs is a multifaceted concept, influenced by a combination of financial product availability, institutional frameworks, and the suitability and affordability of services.

The significance of access to finance for SMEs cannot be exaggerated. Limited access hampers their ability to invest in growth opportunities, innovate, and create jobs, thereby stifling economic development. SMEs often face challenges in accessing traditional sources of finance due to factors such as limited collateral, information asymmetry, and risk perceptions (Bauer, Chytilova, & Morduch, 2018). Additionally, they may encounter barriers related to regulatory complexity and inadequate financial infrastructure. Addressing these barriers requires a comprehensive approach that combines policy interventions, financial innovation, and institutional development. Governments and financial institutions can play a pivotal role in enhancing access to finance for SMEs by implementing supportive policies, improving financial literacy, developing alternative financing mechanisms, and fostering an enabling regulatory environment (Field & Pande, 2020).

By enhancing access to finance, stakeholders can unlock the full potential of SMEs as engines of economic growth and job creation, fostering inclusive and sustainable development

2.4 Technological cost

Technology cost is a critical consideration for Small and Medium Enterprises (SMEs) as they navigate the complexities of modern business environments, with various scholars offering diverse perspectives on its definition and implications. According to Crawford et al (2019), technology cost refers to the expenses incurred by SMEs in adopting, implementing, and maintaining technological solutions to support their operations and enhance competitiveness. The concept encompasses not only the initial investment in hardware, software, and infrastructure but also ongoing expenses such as maintenance, upgrades, and training. For instance, Dubarry, Qin & Brooker (2018) define technology cost as the total expenditure associated with acquiring and using technology, including both direct and indirect costs. They emphasize the importance of considering not just the upfront expenses but also the long-term implications of technology adoption for SMEs. In contrast, Luo et al. (2018) highlight the opportunity cost of technology, emphasizing that while investments in technology can yield significant benefits in terms of efficiency gains, productivity enhancements, and market competitiveness, SMEs must carefully weigh these potential benefits against the associated costs and risks. Additionally, John and Weitz (2021) introduced a broader perspective by considering not only financial costs but also non-financial costs, such as organizational changes, resistance to technology adoption, and cultural shifts within SMEs. They argue that technology cost encompasses a wide range of factors beyond monetary expenses, highlighting the need for SMEs to carefully assess the holistic impact of technology adoption on their operations, workforce, and strategic objectives (Anuphappharadorn, 2018). Overall, technology cost for SMEs is a multifaceted concept influenced by financial,

opportunity, and non-financial factors, emphasizing the importance of strategic decision-making and resource allocation in leveraging technology for sustainable growth and competitiveness in today's digital economy.

2.5 Access to Finance and Financial Performance of SMEs

Access to finance plays a crucial role in determining the financial performance, growth, and competitive positioning of small and medium-sized enterprises (SMEs). Scholars like Raza Jawaid and Adnan (2018) and Poutziouris et al. (2020) have extensively explored this relationship, showing how financial access positively impacts SMEs. Beck et al. (2015) argue that expanded access to finance enables SMEs to invest in assets, research, and market expansion, which in turn stimulates revenue growth, enhances profitability, and improves overall financial well-being. This highlights the critical role of external funding sources in driving SME growth and financial performance.

Moreover, access to finance alleviates financial constraints that can hinder SME operations and growth, negatively affecting their financial performance. Demirgüç Kunt and Maksimovic (2022) note that SMEs facing liquidity challenges often struggle with funding daily operations, technology upgrades, and market initiatives. However, improved financial access allows SMEs to manage working capital more efficiently, maintain stable cash flows, and optimize production processes, reducing business risks and enhancing financial sustainability. This improved operational efficiency directly contributes to better financial performance.

Additionally, financial access fosters innovation and enhances the competitiveness of SMEs in the market. Ayyagari et al. (2019) suggest that SMEs with greater financial resources are more likely to invest in research and development, adopt innovative technologies, and introduce new products

or services, which differentiates them from competitors and opens up new market opportunities. Access to finance also empowers SMEs to implement marketing strategies, expand distribution channels, and strengthen branding efforts, all of which bolster market presence and drive financial performance. Furthermore, Beck et al. (2018) highlight that financial buffers like credit lines or cash reserves enable SMEs to withstand economic downturns and unforeseen crises, ensuring long-term financial performance and resilience in a dynamic market landscape.

2.6 Technological Costs and Financial Performance in SMEs

The relationship between technological costs and financial performance in small and medium-sized enterprises (SMEs) has been a focal point of scholarly exploration. Almazari (2012) and Büyükarıkan (2020) have highlighted the range of expenses involved in acquiring, implementing, and maintaining technological solutions, including hardware, software, training, and IT infrastructure. This complex relationship has sparked debate among researchers and practitioners, as reflected in the work of Doorasamy (2016), who noted the intricacies in evaluating the financial outcomes of technological investments. The critical question centers on whether these costs ultimately enhance or hinder SME financial performance.

Some scholars, such as Sheela and Karthikeyan (2019), argue that strategic investments in technology can confer competitive advantages, thereby positively impacting financial performance. They contend that although technological costs require substantial initial investments, the long-term benefits, including increased efficiency, productivity, and innovation, can enhance profitability and competitiveness. Soriano and Morganin (2021) further emphasize the importance of complementary investments, such as training and organizational restructuring, to maximize the positive financial impact of technology. Without these complementary efforts,

technological costs may not result in significant financial gains, highlighting the need for a holistic approach to technology integration in SMEs.

However, the relationship between technological costs and financial performance is nuanced and influenced by contextual factors. Mason and Harrison (2024) stress the importance of considering industry context, market dynamism, and a firm's absorptive capacity when evaluating this relationship. In fast-paced industries, higher technological costs may be essential for maintaining competitiveness and driving financial success. Şahin (2020) also underscores the role of technology in improving operational efficiency and reducing costs in SMEs, illustrating how investments in systems like enterprise resource planning (ERP) can lead to cost savings over time. Despite these potential benefits, Turner et al. (2015) note that the initial financial burden of technological costs can challenge SMEs, though long-term productivity gains and innovation can ultimately improve financial performance. This complex relationship necessitates strategic management and alignment of technological investments with broader business goals to maximize financial returns for SMEs.

2.7 Combined Influence of Access to Finance and Technological Cost of SMEs

Research examining the combined impact of access to finance and technological costs on the financial performance of SMEs is limited, though crucial. Scholars like Bauman (2022) and Akyüz, Yeşil, and Kara (2019) have highlighted how these factors interact to shape the financial outcomes of SMEs. The interplay between technological costs and access to finance significantly affects SMEs' profitability, growth, and competitive positioning. Ayyagari et al. (2017) and Brynjolfsson and Hitt (2022) emphasize that access to finance facilitates investments in innovation, while technological advancements allow SMEs to adopt sophisticated tools and

processes. This synergistic relationship fosters a culture of innovation that strengthens competitiveness and enhances financial performance.

Balancing technological investments with prudent financial management is critical, as noted by Botika (2022). While access to finance enables SMEs to pursue technological advancements, these investments come with substantial upfront costs and ongoing maintenance expenses, as highlighted by Burja and Mărginean (2014). Successful SMEs navigate these challenges by efficiently managing their financial resources, optimizing capital allocation, and aligning technology investments with long-term business objectives. This strategic alignment ensures that technological investments yield tangible returns, supporting growth and financial objectives.

The interaction between technological costs and access to finance also influences SMEs' risk mitigation strategies and resilience. Dedrick and Kraemer (2018) and Ravichandran, Liu, Han, and Hasan (2019) discuss how technological investments can enhance operational efficiency, streamline processes, and reduce business risks. Access to finance complements these efforts by providing financial buffers and insurance coverage, enabling SMEs to withstand unforeseen challenges and market fluctuations. By effectively managing risks and building financial resilience, SMEs can safeguard their financial performance and sustain operations even in dynamic market environments, ensuring long-term growth and stability.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter delves into numerous facets of the research procedure, including the research design, study population and data sources, research instruments, the reliability and validity of these instruments, measurement of research variables, data processing and analysis, and ethical considerations.

3.2 Research Design

For this study, a cross-sectional-quantitative survey design approach was employed. This method allowed researchers to gather information at a single point in time, avoiding the need for data collection over multiple periods. Cross-sectional surveys were widely utilized in the social sciences for collecting data from sample populations. Additionally, a quantitative approach was utilized to gather data for correlation and regression analyses, aiming to capture, behaviors, opinions, attitudes, and other variables related to the study, and generalize findings across a larger sample population.

3.3 Study Population

The study focused on a population of 120 SMEs registered SMEs in Arua (Local Council Business Directorate, 2023).

3.4 Sample Size and Sampling Method

The sample size of 92 SMEs was determined based on the Krejcie and Morgan (1970) table of sample size determination. The unit of analysis was the SME and simple random sampling method was employed to select SMEs for inclusion in the sample. This method ensured that all elements

within the population had an equal chance of being selected, without bias, as members of the sample were randomly chosen until the desired sample size was achieved.

The unit of inquiry was either the manager or the owner of the SME that were purposively selected given the knowledge and responsibility in the SME operation.

3.5 Sources of Data

Primary data was collected from any individual directly involved in managing the finances of the SMEs. This data was obtained directly from targeted respondents through the use of questionnaires. Questionnaires provided respondents with adequate time to answer questions and facilitated the collection of data from a larger number of individuals simultaneously.

3.6 Data Collection Instrument

The questionnaire comprised of question on the demographic of the respondents and the those of the SMEs in section A. Section B comprised of the closed-ended questions on the study variables and were anchored on a five-point Likert scale, ranging from "1. Strongly Disagree" to "5. Strongly Agree," prompting respondents to carefully consider their response and indicate their choice, thereby facilitating nuanced reflections.

3.7 Measures of variables

Variable	Measurement	Authors
Access to finance	• Availability • Collateral requirement • Affordability	**Momin (2020)**
Technological costs	• Organization capability • Change management • Maintenance cost	**Ahmed and Salkols (2020)**
Financial performance	• Profitability • Growth • Return on investment	**Rolls (2019)**

3.8 Validity and Reliability of the Measurement Instrument

Validity pertains to whether a measure or test accurately assesses what it intends to measure. Content validity index is employed to assess validity, determining if the data collected using a particular instrument adequately represent a specific domain. A content validity index of 0.7 or higher is typically sought (Nunnally et al., 2019). Results are in table 1 below:

Reliability, on the other hand, concerns the consistency and dependability of an instrument. It evaluates whether the researcher consistently obtains the same results from their measurements. Validity ensures that the researcher is measuring the correct phenomenon, while reliability ensures consistent results from these measurements. Cronbach's alpha is utilized to assess the reliability and internal consistency of the instrument (Cronbach & Cronbach, 2016; Cronbach, 1951). A Cronbach's alpha score of 0.7 or greater indicates the reliability of the data collection instrument and serves as a standard benchmark. Results are in table 2 below:

Table 1 : Validity and reliability results

Variable	No of Items	CVI	Cronbach Alpha
Access to Finance	17	0.737	.890
Technological Cost	15	0.811	.926
Financial Performance	15	0.798	.909

***Source**: primary data*

As seen in the Table 1 above, the results for CVI were above 0.5 which indicates validity of items in the questionnaire.

The reliability results shown in Table 2 indicate that the questionnaire items for all three variables display robust internal consistency. This implies that the measurements obtained from the questionnaire are reliable and accurately represent the intended constructs.

3.9 Ethical Considerations

Anonymity of participants was safeguarded throughout the study. Questionnaires did not include participant names or organizational affiliations, ensuring respondent confidentiality. Additionally, no option was provided for respondents to disclose their names or institutional details to maintain anonymity. An introductory letter from Makerere University Business School was obtained to facilitate data collection, reinforcing the study's legitimacy and purpose.

3.10 Data Processing Analysis and Presentation

Quantitative data was collected and subsequently processed by the researcher, involving editing, coding, cleaning, and entry into computer software for analysis. Statistical Package for Social Scientists (SPSS) version 25 was employed for data analysis, facilitating the generalization of quantitative data. Descriptive statistics were utilized to address the study objectives, with data presented in tables, percentages, standard deviations, and means.

Limitations of the Study

Despite the rigorous approach taken in this research, several limitations should be acknowledged. First, the study was constrained by a small sample size, which limited the generalizability of the findings. If the sample does not adequately represent the broader population, the conclusions drawn may not fully capture the diversity of perspectives or experiences relevant to the research topic. Additionally, potential biases in data collection could have raised from respondents' subjective perceptions, recall errors, or social desirability effects, which may influence the accuracy and reliability of the responses. The use of specific data collection tools, such as a questionnaire, may also have introduced constraints, as this method rely on participants' willingness and ability to provide honest and detailed information.

Moreover, external factors beyond the researcher's control could have also affected the study's outcomes. For instance, economic, political, or environmental changes during the research period might impact the variables under investigation, thereby influencing the results in ways not accounted for in the study design. Similarly, logistical challenges, such as limited access to key respondents or incomplete data from secondary sources, affected the comprehensiveness of the analysis. While efforts have been made to minimize these limitations through careful methodological choices, transparency in acknowledging them allows for a more balanced interpretation of the findings and provides direction for future research.

CHAPTER FOUR

PRESENTATION, INTERPRETATION AND ANALYSIS OF FINDINGS

4.1 Introduction

This chapter presents, interprets, and analyzes the research findings, including statistics on frequency distribution, as well as correlation and regression results. The inferential results are evaluated and discussed in relation to the study's objectives.

Out of a target of 92 SME respondents, data was successfully collected from 81 individuals, resulting in a response rate of 88%. This high response rate indicates a strong level of participation in the study. According to Mugenda and Mugenda (2003), a response rate below 50% is considered insufficient for analysis, 60% is deemed adequate, and 70% or above is considered excellent. Given the 88% response rate, the data was considered excellent for analysis, allowing for a thorough examination of the findings.

4.2 Background information

The background information comprises of the respondents (gender, education, age, marital status, number of years worked in the SME. The results are presented in the table 4.1 while the demographics for the SMEs included number of employees, capital employed, annual turnover, nature of business, number of years in existence, location in Arua city as shown in table 4.2

Table 4.1: ***Characteristics of the Respondents***

		Freq	**%**
Gender	Male	44	54.3
	Female	37	45.7
	Total	81	100.0
Age	18-25	9	11.1
	26-30	34	42.0
	31-35	21	25.9
	36-40	8	9.9
	41-45	4	4.9
	46 and above	5	6.2
	Total	81	100.0
Marital Status	Single	36	44.4
	Married	43	53.1
	Widower	2	2.5
	Total	81	100.0
Number of years worked	Less than a year	1	1.2
	1-2 years	32	39.5
	3-5 years	33	40.7
	6-10 years	12	14.8
	11 years and above	3	3.7
	Total	81	100.0
Education Level	Certificate	2	2.5
	Diploma	10	12.3
	Bachelor's degree	51	63.0
	Postgraduate diploma	6	7.4
	Master’s degree	12	14.8
	Total	81	100.0

Source*: primary data*

The gender distribution among the respondents is relatively balanced, with a slight majority of males. Specifically, 44 respondents (54.3%) were male, while 37 respondents (45.7%) were female. This near parity in gender representation suggests that insights gained from the study will reflect a diverse range of perspectives. In the context of SMEs in Arua City, this balance could provide a comprehensive understanding of how both male and female business owners and managers perceive and experience access to finance and technological costs. Gender-based

differences in financial management and technology adoption might emerge, enriching the study's findings (Eagly & Carli, 2007).

The age distribution shows a concentration of respondents in the 26-35 age range. Specifically, 34 respondents (42.0%) were aged 26-30, and 21 respondents (25.9%) were aged 31-35. Smaller proportions were observed in other age groups: 9 respondents (11.1%) were aged 18-25, 8 respondents (9.9%) were aged 36-40, 4 respondents (4.9%) were aged 41-45, and 5 respondents (6.2%) were aged 46 and above. This distribution suggests that the majority of respondents are in their early to mid-career stages, which could imply a strong familiarity with contemporary financial practices and technological advancements. Their insights could be particularly relevant in understanding the current challenges and opportunities faced by SMEs (Wiersema & Bantel, 1992).

The majority of respondents are married, with 43 respondents (53.1%) reporting this status, followed by 36 respondents (44.4%) who are single, and 2 respondents (2.5%) who are widowers. This demographic detail may influence the study’s findings, as marital status can affect financial decisions and risk tolerance. Married individuals might prioritize stability and long-term investments, whereas single respondents might be more open to taking risks, which could impact their access to finance and investment in technology (Becker, 1973).

Respondents' work experience varies, with the majority having worked between 1-5 years. Specifically, 32 respondents (39.5%) reported 1-2 years of experience, and 33 respondents (40.7%) reported 3-5 years. Smaller numbers have less than a year of experience (1 respondent, 1.2%), 6-10 years of experience (12 respondents, 14.8%), and over 11 years of experience (3 respondents, 3.7%). This indicates that most respondents have a moderate level of experience in their current

roles, which could provide balanced insights into the practical challenges and benefits associated with access to finance and technological costs for SMEs.

The educational background of the respondents is predominantly at the bachelor's degree level, with 51 respondents (63.0%) holding this qualification. Other educational levels include certificates (2 respondents, 2.5%), diplomas (10 respondents, 12.3%), postgraduate diplomas (6 respondents, 7.4%), and master's degrees (12 respondents, 14.8%). This high level of education among respondents suggests they are likely to have a good understanding of financial management and technology adoption, which is beneficial for the study. Educated respondents are likely to provide informed insights into how access to finance and technological costs impact the financial performance of SMEs (Mincer, 1974).

Table 4.2 Demographics of the SMEs

		Freq	**%**
Respondents	Owner	50	62
	Manager	31	38
	Total	**81**	**100**
Number of employees	Less than 10	42	52
	10-20	20	25
	Above 20	19	23
	Total	81	100.0
Capital employed (in millions)	1-20	33	41
	20-30	21	26
	30-40	10	12
	40-50	8	10
	Above 50	8	11
	Total	81	100.0
Annual turnover (million)	Less than 50	56	69
	50-100	23	28
	Above 100	3	3
	Total	81	100.0
Number of years in existence	Less than a year	2	2
	1-2 years	21	26
	3-5 years	33	41
	6-10 years	20	25
	11 years and aboves	5	6

	Total	81	100.0
Nature of business	Hotel	2	2
	Wholesale	31	38
	Schools	21	26
	Medical facilities	14	17
	Welding and metal fabrication	12	15
	Total	81	100.0

***Source**: primary data*

4.3 Correlation analysis

The research aimed to determine the relationships between the key variables being investigated. To accomplish this, the Pearson (r) correlation coefficient was calculated due to the interval nature of the data and the necessity to assess both the direction and strength of these relationships. The Pearson correlation coefficient, ranging from -1 to 1, quantifies the degree of linear association between two variables. This statistical measure is applicable in both causal and associative research hypotheses (Amin, 2005). The results of the correlation analysis are presented in Table 4.3 below:

Table 4.3

Correlation Analysis Results

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Availability	1											
2. Collateral	.264*	1										
3. Affordability	.606**	.446**	1									
4. Access To Finance	.837**	.679**	.849**	1								
5. Organizational Capacity	.693**	.147	.534**	.608**	1							
6. Change Management	.700**	.276*	.484**	.642**	.559**	1						
7. Maintenance Cost	.535**	.429**	.426**	.595**	.457**	.359**	1					
8. Technological Cost	.800**	.325**	.604**	.756**	.895**	.761**	.727**	1				
9. Profitability	.327**	.333**	.329**	.415**	.298**	.476**	.273*	.416**	1			
10. Growth	.421**	.075	.297**	.354**	.600**	.328**	.156	.492**	.028	1		
11. Return On Investment	.534**	-.022	.351**	.395**	.619**	.429**	.416**	.629**	.195	.413**	1	
12. Financial Performance	.623**	.120	.454**	.533**	.744**	.563**	.420**	.743**	.448**	.694**	.881**	1

*. Correlation is significant at the 0.05 level (2-tailed).

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

***Source**: primary data*

4.3.1 Access to Finance and Financial Performance of SMEs

The first objective of this study was to investigate the relationship between access to finance and the financial performance of SMEs in Uganda. The correlation analysis shows a positive and significant relationship between access to finance and financial performance ($r = 0.533^{**}$, $p < 0.01$). This finding indicates that SMEs with better access to financial resources generally experience improved financial performance. Among the components of access to finance, availability ($r = 0.623^{**}$), collateral ($r = 0.120$), and affordability ($r = 0.454^{**}$) each demonstrate varying levels of positive correlation with financial performance. The strongest correlations are seen with availability and affordability, suggesting that SMEs that can more easily secure financial services and manage their costs tend to perform better financially. Improved access to finance likely provides SMEs with the capital needed to invest in their operations, expand their market presence, and implement strategic initiatives, thereby enhancing profitability and growth.

4.3.2 Technological Cost and Financial Performance of SMEs

The second objective was to explore how technological cost impacts the financial performance of SMEs. The correlation results reveal a strong and positive relationship between technological cost and financial performance ($r = 0.743^{**}$, $p < 0.01$). This significant correlation indicates that investing in technology is crucial for the financial success of SMEs. Specific components of technological cost, such as organizational capacity ($r = 0.744^{**}$), change management ($r = 0.563^{**}$), and maintenance cost ($r = 0.420^{**}$), also exhibit significant positive correlations with financial performance. The strongest correlation is with organizational capacity, suggesting that SMEs that enhance their ability to manage and utilize technology effectively tend to achieve better financial outcomes. Effective change management and maintenance are also important, as they support the seamless integration and ongoing sustainability of technological improvements. These

results underscore the vital role of technological investments in boosting profitability, growth, and overall financial health of SMEs.

4.4 Regression Results

In order to ascertain the combined effect of access to finance and technological cost on the financial performance of SMEs in Uganda, a multiple regression was done with SPSS version 26. The results are shown in Table 4.4 below.

Table 4.4: Regression Results (N=81)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.744[a]	.553	.542	.42231

a. Predictors: (Constant), Technological Cost, Access To Finance

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.485	.368		4.040	.000
	Access To Finance	.485	.147	.467	2.581	.000
	Technological Cost	.764	.111	.793	6.858	.000

a. Dependent Variable: Financial Performance

Source: *primary data*

The regression analysis was conducted to assess how access to finance and technological costs affect the financial performance of SMEs. The model summary shows a correlation coefficient (R) of 0.744, indicating a strong positive relationship between the predictors—access to finance and technological costs—and the financial performance of SMEs. The R Square value of 0.553 reveals that about 55.3% of the variability in financial performance can be attributed to the combined influence of these two factors. The Adjusted R Square value of 0.542 further validates that the

model fits the data well, considering the number of predictors used. The standard error of the estimate, 0.42231, represents the average deviation of the observed values from the regression line.

The constant term is 1.485, representing the baseline level of financial performance when both access to finance and technological costs are zero. This value is statistically significant, indicating a strong baseline financial performance. For access to finance, the unstandardized coefficient is 0.485, which means that for each unit increase in access to finance, the financial performance of SMEs improves by 0.485 units, with technological cost held constant. The standardized coefficient (Beta) of 0.467 reflects the relative importance of access to finance as a predictor of financial performance, supported by a t-value of 2.581 and a significance level of 0.000, which confirms its statistical significance.

In contrast, technological cost has an unstandardized coefficient of 0.764, meaning that for each unit increase in technological cost, the financial performance of SMEs improves by 0.764 units, while keeping access to finance constant. The standardized coefficient (Beta) of 0.793 indicates that technological cost is a highly significant predictor of financial performance, with a greater effect than access to finance. The t-value of 6.858 and a significance level of 0.000 further confirm the strong statistical significance of technological cost as a predictor.

The regression analysis shows that both access to finance and technological costs are important predictors of SME financial performance. However, technological cost exerts a more significant influence on financial performance than access to finance. These results emphasize the vital role of technological investment in enhancing the financial outcomes for SMEs. SMEs that not only improve their access to financial resources but also strategically invest in technology are likely to experience notable improvements in their financial performance. This highlights the importance

of developing policies and strategies that assist SMEs in securing financing and adopting cost-effective technological solutions to foster business growth and sustainability.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is divided into five sections: the first outlines the findings, the second presents the conclusions, and the third provides recommendations. The fourth section addresses the limitations of the study, while the fifth highlights potential areas for future research.

5.2 Discussion of Findings

5.2.1 Access to Finance and Financial Performance of SMEs

The primary goal of this study was to determine how access to finance affects the financial performance of SMEs in Uganda. The correlation analysis indicates a positive and significant link between access to finance and financial performance. This means that SMEs with better access to financial resources generally show improved financial outcomes. Specifically, aspects of access to finance, such as availability, collateral, and affordability, each have varying degrees of positive correlation with financial performance. The strongest correlations are with availability and affordability, suggesting that easier access to financial services and better management of affordability lead to improved financial results. Greater access to finance likely provides SMEs with the capital needed for operational investments, market expansion, and strategic initiatives, thereby enhancing profitability and growth. Additionally, regression analysis shows that access to finance has a notable predictive value for financial performance, highlighting its crucial role in improving the financial health of SMEs.

When comparing the findings with existing scholarly research, it is clear that the positive link between access to finance and the financial performance of SMEs is consistent with the conclusions of various researchers. Raza, Jawaid, and Adnan (2018) highlight that increased

financial access enables SMEs to invest in growth opportunities and expansion efforts, thereby driving revenue growth and boosting profitability. Similarly, Poutziouris et al. (2020) and Beck et al. (2015) argue that broader financial access allows SMEs to invest in assets, research, and market expansion, which enhances their overall financial health. These studies collectively underscore the crucial role of external funding in supporting SME growth and financial performance. Additionally, Demirgüç-Kunt and Maksimovic (2022) reinforce this perspective by noting that better financial access aids SMEs in managing working capital effectively, maintaining stable cash flows, and optimizing production processes, all of which contribute to improved financial performance and sustainability.

Conversely, some scholars present a more nuanced view. For example, Ayyagari et al. (2019) argue that while access to finance is essential, it must be accompanied by other elements such as managerial skills and innovative capabilities to significantly improve financial performance. They contend that financial resources alone may be insufficient if SMEs lack the expertise and knowledge needed to effectively use them. Furthermore, Beck et al. (2018) highlight that SMEs with financial reserves are better equipped to weather economic downturns and unexpected crises. This suggests that simply having access to finance does not ensure success; rather, the effective management and strategic use of these resources are crucial for achieving positive outcomes.

The findings can also be viewed through the lens of resource-based theory, which asserts that a company's competitive advantage and performance are derived from its unique resources and capabilities. For SMEs, access to finance is a critical resource that allows them to invest in technology and other strategic initiatives, thereby boosting their competitiveness and overall performance. Newbert (2017) explains that adequate financial resources enable SMEs to acquire vital technology, invest in research and development, and innovate their products and services.

Additionally, Zahra, Neubaum, and Hayton (2020) suggest that access to finance grants SMEs the flexibility to capitalize on market opportunities and tackle challenges related to expanding their operations and entering new markets.

While access to finance has positive effects, the theory also underscores the difficulties related to acquiring and implementing technology, especially for SMEs with limited financial resources. Radjou and Prabhu (2015) point out that the high costs associated with technology can discourage SMEs from investing in innovative solutions, which may hinder their competitive edge. Additionally, the complexity and rapid evolution of technology can increase cost pressures for SMEs, as they attempt to stay current with advancements while working within tight budgets (Ramaswamy & Gouillart, 2020).

From the researcher's viewpoint, the findings highlight the essential role that access to finance plays in improving the financial performance of SMEs. Nonetheless, it is clear that merely having financial access is not enough. SMEs need to strategically utilize their financial resources to invest in technology and other capabilities that enhance competitiveness and profitability. The resource-based theory offers a useful framework for understanding how financial access interacts with other organizational assets to affect financial performance. By effectively combining financial and technological resources with other assets like human capital and customer relationships, SMEs can generate synergies that strengthen their competitive advantage and overall financial success.

5.2.2 Technological Cost and Financial Performance of SMEs

The second objective of this study was to explore how technological cost impacts the financial performance of SMEs. The correlation analysis reveals a strong positive link between technological cost and financial performance, indicating that investing in technology is crucial for SMEs' financial success. The individual components of technological cost—such as organizational

capacity, change management, and maintenance costs—also show significant positive relationships with financial performance. The strongest correlation is with organizational capacity, suggesting that SMEs that focus on enhancing their ability to manage and utilize technology tend to achieve better financial results. Effective change management and maintenance practices further support this positive outcome by facilitating the smooth integration and ongoing effectiveness of technological advancements. Regression analysis also underscores the predictive value of technological cost on financial performance, highlighting its significant role in boosting SME profitability, growth, and overall financial health.

Examining these findings in the context of existing literature shows strong support from various scholars. Sheela and Karthikeyan (2019) argue that strategic investments in technology can provide competitive advantages that positively affect financial performance. They suggest that while technological costs might involve a substantial initial outlay, the long-term gains—such as improved efficiency, productivity, and innovation—can significantly boost profitability and competitiveness. Similarly, Soriano and Morganin (2021) highlight the necessity of complementary investments in technology, such as training and organizational restructuring, to fully realize the financial benefits. They argue that without these additional investments, the technological costs alone may not deliver substantial financial improvements.

The relationship between technological costs and financial performance is complex and influenced by various contextual factors. Mason and Harrison (2024) emphasize the need to consider factors such as industry context, market dynamism, and the firm's capacity to absorb new technologies. In rapidly changing industries, higher technological investments might be essential to maintain competitiveness and boost financial performance. Şahin (2020) highlights how technology can enhance operational efficiency and lower costs for SMEs, noting that investments in systems like

enterprise resource planning (ERP) can lead to long-term cost savings and improved financial outcomes. Despite these advantages, technological costs can also present challenges for SMEs, particularly concerning initial investment and ongoing maintenance, which can affect their financial performance. Turner, Broom, Elliott, and Lee (2015) point out that while technological costs might initially strain SMEs, they can ultimately lead to productivity improvements and innovation, enhancing financial performance over time.

From the perspective of resource-based theory, a company's competitive advantage and performance are derived from its unique resources and capabilities, which should be valuable, rare, hard to imitate, and non-substitutable (Bradley, 2015). For SMEs, access to technological resources is a critical component of their resource base. Newbert (2017) asserts that having adequate financial resources enables SMEs to acquire essential technology, invest in research and development, and innovate their products and services. Additionally, Zahra, Neubaum, and Hayton (2020) argue that financial access gives SMEs the flexibility to capitalize on market opportunities and address challenges related to expanding their operations and entering new markets.

However, the costs involved in acquiring and implementing technology can pose significant challenges for SMEs, particularly those with limited financial resources and capabilities (Radjou & Prabhu, 2015). High technology expenses may discourage SMEs from investing in new innovations or upgrading existing systems, which could hinder their competitive edge. Additionally, the complexity and swift obsolescence of technology can increase financial pressures for SMEs as they attempt to stay current with technological advancements while managing limited budgets and expertise (Ramaswamy & Gouillart, 2020).

Despite these obstacles, resource-based theory suggests that SMEs can strategically use their access to finance and technology resources to achieve better financial performance (Shieber,

2021). By wisely directing financial resources towards technology investments that align with their strategic goals and core competencies, SMEs can improve operational efficiency, productivity, and quality, which can lead to revenue growth and cost savings. Furthermore, SMEs that develop internal capabilities to effectively utilize technology—such as offering digital skills training to employees or forming partnerships with technology providers—can create a sustainable competitive advantage that supports long-term financial success (Ramaswamy & Gouillart, 2020).

Hsu et al. (2017) argue that resource-based theory highlights the significance of complementarity and integration among a firm's various resources and capabilities. SMEs that effectively combine access to finance with technology resources and other organizational assets such as human capital, customer relationships, and brand reputation—can create synergies that enhance their financial performance (Gupta, Nadkarni, & Mariam, 2019). For example, investing in technology-driven customer relationship management systems can improve customer satisfaction and retention, which can ultimately boost sales and profitability.

From the researcher's viewpoint, the findings highlight the essential role that technological investments play in improving the financial performance of SMEs. However, it is clear that these benefits are maximized when paired with effective change management and maintenance practices. The resource-based theory offers a useful framework for understanding how technological costs interact with other organizational resources to impact financial performance. By successfully integrating financial and technological resources with additional capabilities, such as human capital and customer relationships, SMEs can create synergies that enhance their competitive advantage and overall financial success. This comprehensive approach is crucial for SMEs to manage the complexities of technological investments and achieve long-term financial sustainability.

5.2.3 Combined Effect of Access to Finance and Technological Costs on the Financial Performance of SMEs

The third objective of this study was to investigate how access to finance and technological costs jointly affect the financial performance of SMEs. The regression analysis reveals a strong positive relationship between these factors and financial performance. According to the model summary, 55.3% of the variation in financial performance can be attributed to the combined impact of access to finance and technological costs. This indicates that both elements are essential in shaping SMEs' financial outcomes. The regression coefficients show that each unit increase in access to finance significantly boosts financial performance, with technological costs also contributing to notable improvements. Notably, technological costs have a slightly greater impact on financial performance compared to access to finance. These results underscore the significant role of both financial resources and technological investments in achieving financial success for SMEs.

Assessing these findings in light of existing academic literature shows strong support for the combined effects of access to finance and technological costs on SME performance. Scholars such as Ayyagari et al. (2017) and Brynjolfsson and Hitt (2022) emphasize that access to finance enables SMEs to invest in innovation, while technological advancements allow them to utilize advanced tools and processes. This synergy promotes a culture of innovation, enhancing both competitiveness and financial performance. Ayyagari et al. (2017) note that SMEs with better access to finance are more likely to invest in technology, which improves operational efficiency and profitability. Likewise, Brynjolfsson and Hitt (2022) argue that technological investments, when supported by sufficient financial resources, drive growth and innovation, ultimately leading to improved financial outcomes.

On the other hand, some scholars offer a more cautious perspective. Botika (2022) argues that effectively managing the interplay between technological costs and access to finance requires a careful balance between investing in technology and maintaining prudent financial management. This viewpoint is echoed by Burja and Mărginean (2014), who highlight that while technological advancements can create growth opportunities, they also involve substantial initial costs and ongoing maintenance. They suggest that successful SMEs navigate these challenges by managing their financial resources efficiently, optimizing capital allocation, and ensuring that technological investments are aligned with long-term growth strategies and financial goals. Additionally, Dedrick and Kraemer (2018) and Ravichandran et al. (2019) point out that while technological investments can boost operational efficiency and reduce business risks, these benefits are most effectively realized when supported by strong financial management practices.

From a theoretical standpoint, the findings are consistent with the resource-based theory, which asserts that a firm's competitive advantage and performance arise from its unique set of resources and capabilities. For SMEs, access to finance and technological resources are vital components of their resource base. According to this theory, these resources must be valuable, rare, difficult to imitate, and non-substitutable to provide a competitive edge. Newbert (2017) and Zahra et al. (2020) argue that access to financial resources allows SMEs to acquire crucial technology, invest in research and development, and innovate their products and services. This theoretical perspective suggests that integrating financial and technological resources can significantly boost SME performance by helping firms seize market opportunities and effectively address challenges.

Despite the potential advantages, the costs of acquiring and implementing technology pose significant challenges for SMEs, particularly those with limited financial resources and capabilities. Radjou and Prabhu (2015) observe that high technology costs may discourage SMEs

from investing in new technologies or upgrading existing systems, which could hinder their competitive ability. Ramaswamy and Gouillart (2020) further explain that the complexity and rapid obsolescence of technology solutions exacerbate cost pressures for SMEs as they attempt to keep up with technological advancements while managing tight budgets. However, resource-based theory suggests that SMEs can strategically utilize their access to finance and technological resources to achieve improved financial performance. By carefully directing financial resources towards technology investments that align with their strategic goals, SMEs can boost operational efficiency, productivity, and quality, leading to increased revenue and cost savings.

From the researcher's viewpoint, the findings emphasize the crucial role of both financial and technological resources in improving SME financial performance. The results indicate that the advantages of investing in technology are fully realized when accompanied by strong financial management practices. This comprehensive approach enables SMEs to manage the complexities of technological investments and achieve sustainable financial outcomes. By effectively combining financial and technological resources with other organizational assets, such as human capital and customer relationships, SMEs can generate synergies that enhance their competitive edge and overall financial success. This strategic integration is vital for SMEs to excel in dynamic market conditions and maintain long-term growth.

5.3 Conclusions

The study demonstrates that both access to finance and technological costs significantly and positively influence the financial performance of SMEs in Uganda. The regression analysis shows that these factors together explain a considerable portion of the variation in financial performance, with technological costs having a marginally greater impact than access to finance. This highlights

the crucial role of both financial resources and technological investments in improving SME profitability and fostering growth.

The findings support the resource-based theory, which highlights the importance of valuable, rare, and hard-to-imitate resources for gaining a competitive edge. To enhance financial performance, SMEs need both adequate and affordable access to finance and strategic investments in technology. Thus, SMEs should aim to balance their financial and technological resources effectively to optimize their success and achieve sustainable long-term growth.

5.4 Recommendations

Policymakers should introduce regulations that lower collateral requirements for SME loans; Reducing the collateral burden will enable more SMEs to access the necessary funds for growth and technological investments. This measure will particularly benefit small and emerging businesses with limited assets, improving their financial prospects and facilitating investments in operational expansion and technology.

Financial institutions should create customized financial products with flexible terms for SMEs; By offering lower interest rates, longer repayment periods, and grace periods that match SME cash flow cycles, financial institutions can enhance accessibility and affordability. Such tailored financial products will assist SMEs in managing their finances more effectively, resulting in better financial performance and long-term sustainability.

SMEs should allocate specific funds for technology investments; setting aside dedicated funds for technology within their financial planning will allow SMEs to consistently update their technological infrastructure. This approach helps SMEs stay current with technological

advancements, improve operational efficiency, and maintain a competitive edge, while also systematically planning for necessary upgrades and innovations.

5.5 Limitations of the Study

This study used a cross-sectional research design, which examines the variables at a single point in time. This method does not account for changes over time, limiting the understanding of long-term effects and trends. Therefore, the evolving impact of access to finance and technological costs on SME financial performance is not captured.

The study concentrated solely on access to finance and technological costs as the primary independent variables affecting SME financial performance. This narrow focus excludes other potentially influential factors such as government policies, market dynamics, and managerial competencies, which may also significantly impact financial outcomes. As a result, the findings are less comprehensive.

The research was limited to SMEs in Arua city, Uganda, which affects the generalizability of the results to other regions within Uganda or to different countries. SMEs in urban areas or across various economic sectors might experience different effects on their financial performance.

Additionally, the study did not distinguish between different sectors in which SMEs operate. Different industries may encounter unique challenges and opportunities related to access to finance and technological costs, which could significantly influence their financial performance. The lack of sector-specific analysis restricts the applicability of the results to particular industries.

5.6 Areas for Further Study

Given that this study used a cross-sectional research design, which captures the behavior of variables at a single point in time, future research should adopt a longitudinal approach. This would

track the variables over a longer period, offering deeper insights into how access to finance and technological costs affect the financial performance of SMEs in Uganda through different stages of their growth and development.

Future studies should also explore additional independent variables not covered in this research that might influence SME financial performance. While this study focused on access to finance and technological costs, factors such as government policies, market dynamics, and managerial competencies could also be significant. Investigating these aspects could provide a more comprehensive understanding of the factors impacting SME performance.

Moreover, it would be beneficial for future research to include different contexts, such as urban SMEs, larger enterprises, or various sectors like manufacturing, agriculture, or services. This would help assess whether the relationships observed in SMEs in Arua city apply to other settings. Comparative studies across different contexts could improve the generalizability of the findings and offer tailored strategies for diverse business environments.

Furthermore, future research should delve into the specific components of access to finance and technological costs that have the greatest impact. For instance, examining which aspects of financial access such as credit availability, collateral requirements, or interest rates—are most influential on SME financial performance. Similarly, a detailed analysis of different technological costs such as initial investment, maintenance, or training expenses—could identify the most critical factors affecting SMEs.

Finally, research could focus on SMEs adopting specific technological solutions or financial strategies. For example, investigating SMEs implementing digital financial services or integrating

advanced technologies like AI or IoT could provide insights into how these innovations and strategies affect performance, offering valuable guidance for future business development efforts.

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QUESTIONNAIRE ON FINANCIAL PERFORMANCE

Introduction.

Dear respondent,

I am **Kissah Verous**, a student at Makerere University Business School. I am pursuing a Master's Degree of Business Administration in Accounting and Finance. I am carrying out research about "**ACCESS TO FINANCE, TECHNOLOGY COST AND FINANCIAL PERFORMANCE OF SMEs IN UGNANDA. A CASE OF SELECTED SMEs IN ARUA CITY.**" You have been recognized as an important and valuable participant in this research due to your extensive and relevant experience and knowledge. This study is solely for academic purposes. Your responses will be kept completely confidential and will only be used for this research. Therefore, I kindly request you to take some of your valuable time to answer the following questions.

Part I

SECTION A: PROFILE OF RESPONDENTS

1. What is your position in this organisation?

   …….

2. What is your gender?

   MALE ☐ FEMALE ☐

3. How old are you?

   a). 18-25 ☐ b). 26-30 ☐ c).31-35 ☐ d). 36-40 ☐

   e). 41-45 ☐ f). 46-50 ☐ g). 51 and above ☐

4. What is your marital status?

   a). Single ☐ b). Married ☐

5. How long have you worked in this organisation?

   a). Less than a year ☐ b). 1-2 years ☐ c). 3-5 years ☐

   d). 6-10 ☐ e). Over 11 years ☐

6. Qualifications.

Certificate	Diploma	Bachelor's degree	Post graduate diploma	Master's Degree	Any other (please specify)

SECTION B: ACCESS TO FINACE

In the list provided below, kindly indicate by ticking the extent to which you agree to the below statements as follows; (1) strongly disagree, (2) agree, (3) not sure (4) agree, (5) strongly agree.

	Availability	1	2	3	4	5
ATFA 001	With our organization, obtaining financial services is simple and convenient.					
ATFA 002	The banks in our network offer a range of financial services and products to cater to the various needs of their clientele.					
ATFA 003	Banks in this area provide financial services to people and companies of various sizes and backgrounds.					
ATFA 004	Credit applications and loan approval procedures are clear-cut and easy to understand.					
	Collateral					
ATFC 001	I think that my chances of getting good terms on loans or credit are increased when I have substantial assets to put up as collateral.					
ATFC 002	Without any collateral, we are unable to obtain bank loans.					
ATFC 003	The collateral securities we possess are sufficient to obtain a bank loan.					
ATFC 004	The company maintains a fixed asset register					
ATFC 005	The requirements for collateral limits our access to finance.					
ATFC 006	I believe that in today's financial environment, collateral is an antiquated idea and shouldn't be a deciding factor when applying for loans.					

	Affordability					
ATFA 001	My organisation can afford any bank loan.					
ATFA 002	I believe it is difficult for SMEs with irregular income streams to acquire funding since the affordability assessment criteria employed by lenders frequently ignore specific financial circumstances.					
ATFA 003	We generate enough cash flow to meet our loan payments.					
ATFA 004	My organization find it difficult to afford a loan because it is expensive					
ATFA 005	The only factors that should determine someone's capacity to obtain financing are creditworthiness and collateral, not affordability.					
ATFA 006	In order to ensure that the repayments are affordable, I think financial institutions should take into account the income and expenses of SMEs when determining whether or not to grant loans or credit to them.					
ATFA 007	Our capacity to obtain financing is greatly influenced by our ability to pay.					

SECTION C; TECHNOLOGICAL COST

In the list provided below, kindly indicate by ticking the extent to which you agree to the below statements as follows; (1) strongly disagree, (2) agree, (3) not sure (4) agree, (5) strongly agree.

	Organizational capacity	1	2	3	4	5
TCO 001	I believe that because of the speed at which technology is developing and the expenditures that go along with it, technological costs are always going to be high, regardless of the size of the firm.					
TCO 002	I'm not sure how organizational capacity and technology expenditures are related.					
TCO 003	Our organizational ability to accept and apply new technology is improved, in my opinion, by spending money on personnel training and development.					

TCO 004	Our ability to efficiently control technology expenses is greatly influenced by organizational capability, which includes things like a competent workforce and efficient processes.					
TCO 005	This organization is able to pay for all potential technology-related expenses associated with technology adoption.					
	Change management					
TCC 001	Change management programs cost extra money without having a big effect on our organization's technology expenditures.					
TCC 002	I am certain about the extent to which change management influences technological costs.					
TCC 003	In my opinion, spending money on change management techniques eventually results in cost savings because it speeds up user adoption and lowers resistance to technology advancements.					
TCC 004	Good change management techniques minimize disruptions and facilitate seamless transitions throughout installation, which considerably lowers the total cost of technology.					
TCC 005	I believe that other factors, not the efficacy of change management approaches, are what ultimately decide technical costs.					
	Maintenance cost					
TCM 001	Because maintenance expenses are subject to sudden fluctuations and may not fully reflect the overall worth or performance of the technology, they are an unreliable indicator of technological spending.					
TCM 002	I believe that maintenance costs are typically disregarded during budgeting processes since they are so small in comparison to other technology-related costs like first acquisition or licensing fees.					
TCM 003	I'm not sure if certain technologies automatically require higher maintenance costs, or how maintenance prices vary across different types of technologies.					
TCM 004	Proactive maintenance techniques, like routine upgrades and preventive servicing, are crucial in my opinion for keeping long-term technology					

	expenditures under control and preventing unplanned malfunctions or breakdowns.					
TCM 005	Because maintenance costs frequently account for a sizable amount of my organization's overall spending, they are an important consideration when evaluating the entire technological expenditure.					

SECTION D: FINANCIAL PERFORMANCE

In the list provided below, kindly indicate by ticking the extent to which you agree to the below statements as follows; (1) strongly disagree, (2) agree, (3) not sure (4) agree, (5) strongly agree.

Code	**Profitability**	1	2	3	4	5
FPP 001	Our effectiveness in generating revenue and controlling costs is evident in our current profitability					
FPP 002	Our company's profitability has increased as a result of the financial decisions taken by our management team.					
FPP 003	Regarding the near future, I have faith in our company's capacity to maintain and grow its profits.					
FPP 004	I feel confident that our profitability aligns with industry standards and benchmarks.					
FPP 005	I believe our company's profitability has consistently improved over time.					
	Growth					
FPG 001	Over the last year, our company's sales growth has been satisfactory.					
FPG 002	I think the growth trajectory of our business is in line with expectations and standards set by the industry.					
FPG 003	Our management's strategies have been a significant factor in our financial progress.					
FPG 004	I am confident that our current financial growth will be sustainable in the long term.					
FPG 005	Our company's growth performance reflects positively on its overall financial health and stability.					

	Return on investment					
FPR 001	I believe our company's return on investment (ROI) accurately reflects how well we allocate our capital.					
FPR 002	The return on investment produced by the programs and efforts of our organization either matches or beyond our expectations.					
FPR 003	To optimize return on investment, our organization efficiently assesses and ranks investments.					
FPR 004	In light of industry comparisons, I am certain that our present ROI is competitive.					
FPR 005	Our company's ROI is a solid gauge of its financial health and room for expansion.					

END OF THE QUESTIONNAIRE