Capital Budgeting Techniques Used by SMES and the Role of Cost Data in Project Selection

Okoroafor Ikechukwu Kingsley
Department of Accounting
Faculty of Economics and Management Sciences
Abia State University, Uturu, Nigeria
Mentor4kingsley84@gmail.com

Aruomah Obinwanne Kenechukwu (Ph.D)
Department of Accounting
Faculty of Economics and Management Sciences
Abia State University,
Uturu, Nigeria
obinwanne.aruomah@abiastateuniversity.edu.ng

John Okey Onoh (PhD)
Department of Banking and Finance
Faculty of Economics and Management Sciences
Abia State University, Uturu.
Nigeria. johnonoh@gmail.com

https://doi.org/10.56201/jafm.vol.12.no10.2026.p474.498

Abstract
Small and Medium Enterprises contribute significantly to employment and GDP in Nigeria, yet many fails within their first five years due to poor investment decision making. This study examined capital budgeting techniques used by SMEs and the role of cost data in project selection in South-South and South-East Nigeria. Specifically, the study assessed the level of adoption of capital budgeting techniques, examined the moderating role of cost data quality on the relationship between capital budgeting techniques and project success, and determined the influence of management support, training and financial expertise on the adoption of capital budgeting techniques. The study was anchored on Resource-Based View Theory, Bounded Rationality Theory, and Contingency Theory. A cross-sectional survey research design was adopted. Primary data were collected using a structured questionnaire administered to 450 owners, managers, and finance officers of registered SMEs in the manufacturing, trading, services, and agro-processing sectors. 398 questionnaires were retrieved, representing an 88.4 percent response rate. Data were analyzed using descriptive statistics, correlation, multiple regression, and hierarchical moderated regression with SPSS Version 27 and SmartPLS 4. Hypotheses were tested at 5 percent level of significance. The findings revealed that capital budgeting techniques have a positive and significant effect on project success with Beta = 0.478, $p < 0.05$. Cost data quality significantly moderates the relationship between capital budgeting techniques and project success with Beta = 0.265, $p < 0.05$ and R2 change = 0.07. Management support, training, and financial expertise

also have significant positive effects on the adoption of capital budgeting techniques with Beta = 0.356, 0.221, and 0.198 respectively, p < 0.05. Descriptive results showed moderate adoption of capital budgeting techniques and low mean score for cost data quality, indicating challenges in accuracy and timeliness. The study concludes that while the adoption of capital budgeting techniques improves project outcomes in SMEs, the effectiveness of these techniques is contingent on the quality of cost data and the competence of management. Therefore, to reduce project failure and improve performance, Nigerian SMEs must combine formal appraisal methods with investments in cost data systems and managerial capacity. The study recommends that SMEs should institutionalize formal capital budgeting practices, improve cost data record keeping, and that government agencies such as SMEDAN and financial institutions should provide targeted training and require basic project appraisal as a condition for funding support.

Keywords: *Capital Budgeting Techniques, Cost Data Quality, Project Success, SMEs, Nigeria, Management Support, Financial Expertise*

1.1 Introduction

Small and Medium Enterprises SMEs are widely recognized as the engine of economic growth in both developed and developing economies. In Nigeria, SMEs contribute approximately 48 percent of national Gross Domestic Product and account for over 84 percent of employment (National Bureau of Statistics, 2022). Despite this contribution, a significant number of SMEs fail within their first five years of operation. One of the major reasons for this failure is poor investment decision making, particularly in the selection and execution of capital projects.

Capital budgeting refers to the process of planning, evaluating, and selecting long-term investment projects whose returns are expected to extend beyond one year (Gitman & Zutter, 2019). For SMEs, capital projects may include purchase of machinery, expansion of facilities, acquisition of technology, or entry into new markets. The techniques commonly used in capital budgeting include Payback Period, Net Present Value NPV, Internal Rate of Return IRR, Accounting Rate of Return ARR, and Profitability Index PI (Brigham & Ehrhardt, 2020). The choice of technique influences the quality of decisions and ultimately the survival and growth of the business.

However, the application of these techniques among SMEs in Nigeria remains limited. Studies show that many SME owners rely on intuition, payback period, and personal experience rather than discounted cash flow methods (Abor & Quartey, 2010). This is often attributed to lack of financial literacy, inadequate record keeping, and perceived complexity of the techniques.

A critical input into any capital budgeting decision is cost data. Cost data provides the foundation for estimating cash outflows, forecasting profitability, and determining feasibility of projects (Drury, 2021). Without accurate cost information on initial investment, operating expenses, maintenance, and opportunity cost, project appraisal becomes unreliable. The Resource-Based View Theory by Barney (1991) posits that firms gain competitive advantage from valuable, rare, and inimitable resources. In the context of SMEs, accurate cost data is such a resource because it enables better allocation of scarce capital.

The Agency Theory by Jensen and Meckling (1976) further explains that separation of ownership and control creates the need for formal decision tools to align managerial actions with firm objectives. In SMEs where the owner is often also the manager, agency problems may be minimal, but bounded rationality still exists. Herbert Simon's Bounded Rationality Theory (1957) argues that decision makers are limited by information, cognitive capacity, and time. As a result, SME

owners may avoid complex capital budgeting techniques and settle for simplified methods, even when better alternatives exist.

In Nigeria, government policies and programs such as the MSME Development Fund by the Central Bank of Nigeria were designed to improve access to finance for SMEs. However, access to finance alone is insufficient if funds are channeled into poorly appraised projects. According to Ojeka, Iyoha, and Obigbemi (2014), poor capital budgeting practices contribute to project failure and capital misallocation in Nigerian SMEs.

Cost data plays a dual role. First, it serves as input for capital budgeting models. Second, it provides a basis for post-implementation review and control. Horngren, Datar, and Rajan (2018) emphasize that cost accounting systems must generate relevant and timely information for decision making. For SMEs that operate with thin margins, errors in cost estimation can lead to liquidity problems and eventual closure.

Technology is also changing how SMEs approach capital budgeting. The use of spreadsheets, accounting software, and mobile applications has lowered the cost of performing NPV and IRR analysis (Berk & DeMarzo, 2020). Yet adoption remains low due to knowledge gaps and infrastructure challenges.

Given the importance of SMEs to economic development and the high rate of project failure, it becomes necessary to examine how SMEs in Nigeria currently use capital budgeting techniques and the extent to which cost data influences project selection. This study is therefore motivated by the need to bridge the gap between capital budgeting theory and SME practice, and to provide evidence that can inform policy and training interventions.

The questionnaire provided earlier is designed to capture data on awareness, usage, challenges, and future outlook of capital budgeting techniques among SMEs, with particular emphasis on the role of cost data.

1.2 Statement of Research Problem

Despite the strategic importance of capital budgeting to firm survival, many SMEs in Nigeria continue to experience project failure and financial distress. Empirical evidence suggests that a large proportion of SMEs do not apply formal capital budgeting techniques and instead depend on rules of thumb (Ariyo, 2008). In addition, cost data in many SMEs is fragmented, inaccurate, or not used systematically in project appraisal.

This creates two problems. First, without proper evaluation, SMEs may invest in projects with negative net present value, thereby wasting scarce resources. Second, the absence of reliable cost data undermines the credibility of any appraisal method used. Previous studies on capital budgeting in Nigeria have focused largely on large corporations and quoted firms, leaving a gap in SME-specific research (Uwalomwa, 2011).

Furthermore, while government and financial institutions continue to provide funding support to SMEs, there is little evidence on whether recipients have the capacity to evaluate projects effectively. This study therefore seeks to address the problem: To what extent do SMEs use capital budgeting techniques, and what role does cost data play in their project selection process?

1.3 Research Objectives

The general objective of this study is to examine capital budgeting techniques used by SMEs and the role of cost data in project selection. The specific objectives are to:

1. Assess the level of awareness and use of capital budgeting techniques among SMEs.
2. Examine the role of cost data in project selection decisions of SMEs.

3. Identify the challenges and factors influencing the use of capital budgeting techniques in SMEs.
4. Determine the relationship between quality of cost data and project success in SMEs.
5. Evaluate the future outlook for capital budgeting practices among SMEs.

1.4 Research Questions

Based on the objectives, this study seeks to answer the following questions:
1. To what extent are SMEs aware of and do they use capital budgeting techniques?
2. What role does cost data play in the project selection process of SMEs?
3. What are the major challenges influencing the use of capital budgeting techniques in SMEs?
4. Is there a significant relationship between the quality of cost data and project success in SMEs?
5. What is the future outlook for capital budgeting practices among SMEs?

1.5 Research Hypotheses

The following hypotheses will be tested in this study:
H01: There is no significant relationship between the use of capital budgeting techniques and project success in SMEs.
H02: Cost data does not significantly influence project selection decisions in SMEs.
H03: There is no significant relationship between management support and the use of capital budgeting techniques in SMEs.
H04: Training and financial expertise do not significantly affect the adoption of capital budgeting techniques in SMEs.

1.6 Scope of Research

This study covers SMEs operating in Nigeria across manufacturing, trading, services, and agriculture sectors. The scope is limited to an examination of capital budgeting techniques and the use of cost data in project selection. The study will use primary data collected through the questionnaire presented above. The target respondents are owners, managers, and finance officers of SMEs. The study period is 2026 and findings will be generalized within the context of Nigerian SMEs.

1.7 Significance of Research

This study is significant to several stakeholders. To SME owners and managers, the findings will provide insight into how formal capital budgeting and good cost data can improve decision making and reduce project failure. To government agencies such as SMEDAN and the Central Bank of Nigeria, the study will highlight capacity gaps and inform the design of training and funding programs. To financial institutions, the results will help in assessing the viability of loan applications from SMEs. To academics, the study contributes to literature on capital budgeting in emerging economies and extends the application of Resource-Based View and Bounded Rationality theories to the SME context. Finally, to policymakers, the study provides evidence for interventions aimed at improving SME survival and contribution to economic growth.

1.8 Operational Definition of Terms

Capital Budgeting: The process of evaluating and selecting long-term investment projects by analyzing expected cash flows and returns (Gitman & Zutter, 2019).
Small and Medium Enterprises SMEs: Business enterprises with employees ranging from 1 to

200 and annual turnover not exceeding 250 million naira as defined by SMEDAN (2021).
Cost Data: Quantitative information relating to expenses incurred in the acquisition, operation, and maintenance of assets used for decision making (Drury, 2021).
Project Selection: The decision process of choosing among competing investment alternatives based on predetermined criteria (Brigham & Ehrhardt, 2020).
Net Present Value NPV: A capital budgeting technique that discounts future cash flows to present value and subtracts initial investment (Berk & DeMarzo, 2020).
Internal Rate of Return IRR: The discount rate at which the net present value of a project equals zero (Gitman & Zutter, 2019).
Payback Period: The length of time required to recover the initial investment from project cash inflows (Brigham & Ehrhardt, 2020).

2.0 Introduction

This chapter reviews existing literature relevant to capital budgeting techniques used by SMEs and the role of cost data in project selection. It is presented in three parts: Conceptual Literature Review, Theoretical Literature Review, and Empirical Literature Review. The review draws from finance, accounting, management, and development economics to situate the study within current scholarly debate.

2.1 Conceptual Literature Review

Capital budgeting and cost data are central to investment decision making. This section clarifies key concepts and how they relate in the SME context.

Concept of Capital Budgeting

Capital budgeting is the process of evaluating and committing resources to long-term projects that are expected to generate benefits beyond the current accounting period. Ross, Westerfield, and Jordan (2022) define it as the planning of expenditures whose returns extend beyond one year. For SMEs, such expenditures include acquisition of equipment, expansion of production lines, digitalization, and market entry. The objective is to allocate scarce capital to projects that maximize firm value. Unlike large corporations, SMEs face capital rationing. Pandey (2021) notes that because SMEs have limited access to external finance, every capital decision carries higher risk. Therefore, the technique chosen determines whether the firm survives or collapses. The common techniques are non-discounted and discounted. Non-discounted methods include payback period and accounting rate of return. Discounted methods include net present value, internal rate of return, and profitability index.

Concept of Cost Data

Cost data refers to all quantitative information relating to resources consumed in the course of business operations. Atkinson, Kaplan, Matsumura, and Young (2023) describe cost data as the backbone of managerial decision making. It includes direct costs, indirect costs, fixed costs, variable costs, sunk costs, and opportunity costs. In project selection, cost data provides estimates of cash outflows and informs cash inflow projections.
For SMEs, cost data is often informal and kept in notebooks or basic spreadsheets. Collier (2022) argues that poor cost data leads to underpricing, cost overruns, and project failure. Accurate cost data allows SMEs to calculate break-even, estimate working capital needs, and determine project viability.

Types of Capital Budgeting Techniques and SME Relevance

1. Payback Period: Measures time to recover investment. Garrison, Noreen, and Brewer (2021) state that SMEs prefer it because it is simple and addresses liquidity concerns. However, it ignores time value of money.

2. Net Present Value: Discounts future cash flows. Damodaran (2020) emphasizes NPV as the most theoretically sound method because it directly measures value addition. Its complexity makes it less popular among SMEs.

3. Internal Rate of Return: The rate that makes NPV zero. Brealey, Myers, and Allen (2023) note that IRR is intuitive for managers but can give multiple solutions for non-conventional cash flows.

4. Profitability Index: Ratio of present value of inflows to outflows. It is useful for capital rationing common in SMEs.

5. Accounting Rate of Return: Uses accounting profit. It is easy to compute but ignores cash flows.

Role of Cost Data in Project Selection

Project selection depends on reliable cost estimates. Anthony and Govindarajan (2020) explain that without accurate cost data, NPV and IRR calculations are meaningless. Cost data influences three stages:

1. Pre-investment: Estimating initial outlay and operating costs.

2. Investment: Monitoring actual cost against budget.

3. Post-investment: Evaluating performance and learning.

For SMEs, cost data also affects financing. Banks and microfinance institutions require cost schedules before approving loans. Luscombe (2021) found that SMEs with structured cost records have 40 percent higher loan approval rates in developing economies.

Challenges to Capital Budgeting in SMEs

SMEs face unique constraints. Scarborough (2022) identifies lack of financial expertise, poor record keeping, and owner-manager dominance as key barriers. In addition, volatility in input prices in Nigeria makes cost forecasting difficult. The informal nature of many SMEs means transactions are not documented, which undermines cost data quality.

Technology and Capital Budgeting

Digital tools are lowering entry barriers. Weygandt, Kimmel, and Kieso (2023) show that cloud accounting and Excel templates now allow SMEs to perform DCF analysis without expensive software. Mobile money and POS data also improve cost tracking. However, adoption requires digital literacy.

Cost Data Quality Dimensions

According to Hilton and Platt (2022), cost data quality has four dimensions: accuracy, timeliness, relevance, and completeness. In SMEs, accuracy is often compromised by mixing personal and business expenses. Timeliness is affected by manual processes. This study focuses on how these dimensions affect project selection.

Link between Capital Budgeting, Cost Data and SME Performance

When capital budgeting is combined with good cost data, SMEs can avoid negative NPV projects, improve cash flow, and grow sustainably. Zhao and O'Connor (2021) argue that disciplined investment appraisal is one of the strongest predictors of SME survival in emerging markets. The conceptual framework for this study therefore positions cost data as a moderating variable between capital budgeting technique and project success.

This conceptual review establishes that while capital budgeting theory is well developed, its application in SMEs is constrained by cost data availability and managerial capacity.

2.2 Theoretical Literature Review

This section anchors the study in theories that explain investment decision making in SMEs.

1. Pecking Order Theory

Proposed by Myers and Majluf (1984), Pecking Order Theory states that firms prefer internal financing first, then debt, and equity as last resort due to information asymmetry. For SMEs, internal funds are limited, so project selection becomes critical. Myers (2001) explains that because external finance is expensive, SMEs must ensure each project has high returns. This theory supports the need for rigorous capital budgeting to avoid wasting internal capital.

2. Trade-Off Theory

Kraus and Litzenberger (1973) and later Graham and Leary (2018) argue that firms balance benefits of debt with costs of financial distress. SMEs in Nigeria often avoid debt because of high interest rates. Therefore, they rely on retained earnings and must use capital budgeting to ensure projects generate enough cash to cover costs. The theory implies that cost data is vital to estimate distress risk.

3. Real Options Theory

Trigeorgis (1996) and Dixit and Pindyck (1994) extend capital budgeting by treating investment as options. SMEs can delay, expand, or abandon projects. This is relevant in Nigeria's volatile environment. Real options require good cost data to value flexibility. Without accurate cost data, SMEs cannot exercise options optimally.

4. Behavioral Finance Theory

Kahneman and Tversky (1979) in Prospect Theory show that decision makers are loss averse and use heuristics. In SMEs, owners often reject NPV because it feels abstract and prefer payback because it feels safe. Thaler (2018) in Nudge theory adds that decision architecture matters. If cost data is presented simply, SME owners are more likely to use formal techniques.

5. Contingency Theory

Otley (2016) and Chenhall (2003) argue that management accounting systems must fit organizational context. For SMEs, a complex NPV model may not fit. A simplified spreadsheet-based model aligned with available cost data is more effective. This theory justifies why SMEs use simpler capital budgeting methods.

6. Stakeholder Theory

Freeman (2010) and Donaldson and Preston (1995) state that firms must consider interests of employees, suppliers, customers, and community. In SMEs, project selection affects jobs and livelihoods. Therefore, ethical use of cost data and transparent appraisal builds stakeholder trust.

7. Dynamic Capabilities Theory

Teece, Pisano, and Shuen (1997) argue that firms survive by sensing, seizing, and reconfiguring resources. For SMEs, sensing investment opportunities and seizing them with proper appraisal is a dynamic capability. Cost data is the information input that enables sensing.

Together, these theories explain why SMEs may not adopt sophisticated capital budgeting, why cost data matters, and how context shapes practice. They form the theoretical lens for interpreting results.

2.3 Empirical Literature Review

This section reviews studies on capital budgeting and cost data, with emphasis on SMEs in developing economies.

Capital Budgeting Practices in SMEs

A study by Mukherjee and Roy (2020) in India surveyed 250 SMEs and found that 68 percent use payback period, while only 22 percent use NPV. The reason cited was lack of training. In Kenya, Jagongo and Mutswenje (2019) found that SMEs that used at least two capital budgeting methods had 30 percent higher survival rates.

In South Africa, Fatoki (2021) examined 180 manufacturing SMEs and reported that limited financial skills and poor record keeping were the main barriers to using DCF techniques. The study recommended government-sponsored training.

Role of Cost Data in Project Selection

Hassan and Farouk (2022) in Ghana studied 120 SMEs and found a positive and significant relationship between quality of cost data and project success. Firms with computerized accounting systems made better investment decisions.

In Bangladesh, Rahman and Islam (2021) found that SMEs that tracked both direct and indirect costs were able to identify unprofitable projects early and avoid losses. The study concluded that cost data accuracy was more important than the sophistication of the appraisal method.

Challenges in Developing Countries

A cross-country study by Beck and Demirguc-Kunt (2018) on 10,000 SMEs in 15 African countries showed that 75 percent do not prepare formal project appraisals. The major constraints were lack of skilled personnel and unreliable financial records.

In Nigeria, Enyi (2020) studied SMEs in Lagos and found that most relied on intuition and past experience. He recommended integration of cost accounting training into SMEDAN programs.

Technology Adoption

Chen, Leung, and Qu (2023) in a study of SMEs in Southeast Asia found that adoption of cloud accounting increased the use of NPV and IRR by 45 percent within two years. The key driver was simplified templates and mobile access.

Relationship between Capital Budgeting and Performance

Al-Mamun and Fazal (2021) meta-analyzed 40 studies and concluded that formal capital budgeting has a moderate positive effect on SME profitability and growth. The effect was stronger when combined with good cost management.

Gaps in Literature

Most studies focus on large firms or on one country. Few studies in Nigeria link cost data quality directly to capital budgeting outcomes in SMEs across sectors. This study fills that gap by using primary data from Nigerian SMEs and testing the moderating role of cost data.

2.4 Operationalized Hypotheses

This study operationalizes the hypotheses stated in Chapter 1 by defining the constructs and the measurable indicators to be used during data analysis.

H01: There is no significant relationship between the use of capital budgeting techniques and project success in SMEs.

Operationalized: Use of Capital Budgeting Techniques will be measured as the frequency of use of Payback Period, Net Present Value, Internal Rate of Return, Profitability Index, and Accounting Rate of Return on a 5-point Likert scale. Project Success will be measured using indicators of on-time completion, budget adherence, profitability, and contribution to firm growth adapted from Pinto and Slevin (1988).

H02: Cost data does not significantly influence project selection decisions in SMEs.

Operationalized: Cost Data Quality will be measured using the four dimensions of accuracy, timeliness, relevance, and completeness proposed by Wang and Strong (1996). Project Selection Decisions will be measured by the extent to which cost estimates influence approval, rejection, or modification of projects.

H03: There is no significant relationship between management support and the use of capital budgeting techniques in SMEs.

Operationalized: Management Support will be measured by owner-manager commitment, allocation of resources for training, and approval of formal appraisal processes adapted from Igbaria, Zinatelli, Cragg, and Cavaye (1997). Use of Capital Budgeting Techniques is as defined in H01.

H04: Training and financial expertise do not significantly affect the adoption of capital budgeting techniques in SMEs.

Operationalized: Training will be measured by attendance at workshops, seminars, and in-house training on finance. Financial Expertise will be measured by educational qualification in accounting/finance and years of experience in financial management. Adoption of Capital Budgeting Techniques is as defined in H01.

2.5 Theoretical Framework

The theoretical framework provides the lens through which the study variables are understood. According to Grant and Osanloo (2014), the theoretical framework explains the theory that grounds the study and shows how it informs the research problem.

This study is anchored on three theories:

1. Resource-Based View Theory
Barney (1991) proposed that firms gain competitive advantage from resources that are valuable, rare, inimitable, and non-substitutable. In SMEs, accurate and timely cost data qualifies as such a resource because it enables efficient allocation of scarce capital. The theory supports the argument that SMEs with superior cost data will make better capital budgeting decisions and achieve higher project success.

2. Bounded Rationality Theory
Simon (1957) argued that decision makers are limited by information, cognitive capacity, and time, and therefore, satisfice rather than optimize. In the SME context, owner-managers often avoid complex discounted cash flow methods and prefer simple techniques like payback period because of limited financial expertise. This theory explains why adoption of capital budgeting techniques in SMEs is often partial and context-dependent.

3. Contingency Theory of Management Accounting
Otley (1980) stated that there is no universally appropriate accounting system. The effectiveness of a management accounting practice depends on contextual factors such as firm size, environment, and technology. Applied to this study, the theory suggests that the usefulness of a capital budgeting technique in SMEs depends on the quality of available cost data and the capability of management. Therefore, SMEs will adopt techniques that fit their information environment.
These three theories together explain why capital budgeting adoption varies among SMEs, why cost data matters, and why context determines practice.

2.6 Conceptual Framework
A conceptual framework illustrates the relationship between study variables and shows how they are expected to interact. According to Ravitch and Riggan (2017), the theoretical framework must precede the conceptual framework because theory provides the general explanation while the conceptual framework translates that theory into specific variables and relationships for the study at hand.

Based on the theories above, the conceptual framework for this study is presented as follows:
Independent Variable: Use of Capital Budgeting Techniques measured by Payback Period, NPV, IRR, PI, ARR
Moderating Variable: Cost Data Quality measured by Accuracy, Timeliness, Relevance, Completeness
Dependent Variable: Project Success measured by Profitability, Timely Completion, Budget Compliance, Firm Growth
Control Variables: Firm Size, Sector, Owner Education, Access to Finance
The framework posits that the use of formal capital budgeting techniques leads to higher project success. However, this relationship is strengthened or weakened by the quality of cost data available. In line with Contingency Theory, the effectiveness of the techniques depends on whether the SME has the information infrastructure to support them. This aligns with studies that show that capital budgeting without reliable cost inputs produces poor outcomes (Shields, 1997).

2.7 Gaps in Literature Reviewed

From the review in sections 2.1 to 2.3, several gaps emerge that justify this study.

1. Contextual Gap

Most empirical studies on capital budgeting in SMEs have been conducted in Asia and East Africa such as India (Mukherjee & Roy, 2020), Kenya (Jagongo & Mutswenje, 2019), and Bangladesh (Rahman & Islam, 2021). Few recent studies have focused on Nigerian SMEs across multiple sectors. Given Nigeria's unique macroeconomic volatility and financing environment, findings from other countries cannot be generalized.

2. Variable Gap

Prior studies have treated capital budgeting and cost data as separate issues. For example, Fatoki (2021) focused on barriers to DCF techniques, while Hassan and Farouk (2022) focused on cost data quality and performance. There is limited research that explicitly tests cost data quality as a moderating variable between capital budgeting techniques and project success in SMEs. This study addresses that gap.

3. Theoretical Gap

Many studies apply only one theory, often Pecking Order or Trade-Off Theory. This study integrates Resource-Based View, Bounded Rationality, and Contingency Theory to provide a broader explanation of why SMEs adopt or reject formal appraisal methods. This multi-theory approach is consistent with calls by Chenhall (2003) for pluralistic theoretical perspectives in management accounting research.

4. Methodological Gap

Existing Nigerian studies such as Enyi (2020) and Ojeka, Iyoha, and Obigbemi (2014) relied on small samples in one city and did not test moderating effects. This study will use a larger cross-sector sample and test interaction effects using regression analysis.

By addressing these gaps, this study will contribute new empirical evidence on how SMEs in Nigeria can improve investment decisions through better use of capital budgeting techniques supported by quality cost data.

3.0 Research Methodology

This chapter presents the blueprint for conducting the study. It covers the research design, population, sample and sampling technique, sources and method of data collection, research instruments, model specification, operationalization of variables, methods of data analysis, and validity and reliability tests. The chapter is structured to show how the research questions and hypotheses in Chapter 1 will be answered empirically.

3.1 Research Design

This study adopted a cross-sectional survey research design. A survey design is appropriate because the study seeks to collect primary data from SMEs at one point in time to examine the relationship between capital budgeting techniques, cost data quality, and project success (Creswell & Creswell, 2018). The design allows for generalization to a larger population of SMEs in Nigeria and is consistent with prior SME studies in developing economies (Beck & Demirguc-Kunt, 2018).

3.2 Population of the Study

The population consists of all registered Small and Medium Enterprises in Nigeria. According to the Small and Medium Enterprises Development Agency of Nigeria (2021), there are over 39 million MSMEs in Nigeria. For manageability, the study population was restricted to registered SMEs operating in the manufacturing, trading, services, and agro-processing sectors in South-South and South-East Nigeria. This restriction is justified because these regions have high SME density and have been underrepresented in capital budgeting literature.

3.3 Sample Size and Sampling Technique

The sample size was determined using the Taro Yamane (1967) formula for finite populations:
$n = \frac{N}{1+N(e)^2}$
Where N = population size, e = 0.05 margin of error. Based on SMEDAN (2021) data for the selected states, an estimated population of 12,000 registered SMEs was used. This gave a sample size of 387. To account for non-response, 450 questionnaires were administered.
A stratified random sampling technique was used. Stratification was by sector to ensure representation. Within each stratum, simple random sampling was used to select SMEs from the SMEDAN and Corporate Affairs Commission register. This technique reduces sampling bias and increases representativeness (Saunders, Lewis, & Thornhill, 2019).

3.4 Sources of Data

The study relied on primary data. Primary data was collected through a structured questionnaire administered to owners, managers, and finance officers of SMEs. Primary data is preferred because there is no existing database that captures SME-level information on capital budgeting practices and cost data quality in Nigeria. Secondary data from SMEDAN and CBN reports was used only to contextualize the study population and not for hypothesis testing.

3.5 Research Instrument

The questionnaire was divided into 5 sections:
Section A: Demographics of firm and respondent
Section B: Use of Capital Budgeting Techniques - 5-point Likert scale
Section C: Cost Data Quality - adapted from Wang and Strong (1996)
Section D: Management Support and Training - adapted from Igbaria et al. (1997)
Section E: Project Success - adapted from Pinto and Slevin (1988)
Content validity was ensured through expert review by 3 lecturers in accounting and finance. A pilot test was conducted on 30 SMEs in Port Harcourt. Cronbach's Alpha was used to test reliability. All constructs recorded alpha above 0.70, which is acceptable (Nunnally, 1978).

3.6 Model Specification

To test the hypotheses, three regression models were specified:

Model 1: To test H01

$PS = \beta_0 + \beta_1 CBT + \beta_2 FS + \beta_3 SEC + \beta_4 EDU + \epsilon$
Where:
PS = Project Success
CBT = Use of Capital Budgeting Techniques
FS = Firm Size, SEC = Sector, EDU = Owner Education are control variables

ϵ = Error term

Model 2: To test H02 with moderation

$PS = \beta_0 + \beta_1 CBT + \beta_2 CDQ + \beta_3 (CBT _ CDQ) + \beta_4 Controls + \epsilon$

Where:

CDQ = Cost Data Quality

$CBT _ CDQ$ = Interaction term to test moderation effect

Model 3: To test H03 and H04

$CBT = \beta_0 + \beta_1 MS + \beta_2 TRN + \beta_3 FEXP + \beta_4 Controls + \epsilon$

Where:

MS = Management Support

TRN = Training

FEXP = Financial Expertise

3.7 Justification for Model and Use of Proxies

Justification for Model

Multiple regression was chosen because the study seeks to examine the effect of more than one independent variable on a dependent variable and to test for moderation (Hair, Black, Babin, & Anderson, 2019). The interaction term in Model 2 follows Baron and Kenny (1986) approach to moderation. This is appropriate because theory suggests that cost data quality conditions the effectiveness of capital budgeting techniques.

Justification for Proxies

1. Dependent Variable: Project Success

Proxy: Composite index of profitability, timely completion, budget compliance, and contribution to growth.

Justification: Project success is multidimensional. Pinto and Slevin (1988) established that using multiple indicators capture both efficiency and effectiveness better than a single financial metric. This is critical for SMEs where success may not immediately reflect in profits.

2. Independent Variable 1: Use of Capital Budgeting Techniques

Proxy: Frequency of use of Payback, NPV, IRR, PI, ARR measured on Likert scale.

Justification: Direct observation of actual calculations is not possible in SMEs due to poor documentation. Self-reported frequency is a validated proxy used by Mukherjee and Roy (2020) and Fatoki (2021) in SME contexts.

3. Independent Variable 2: Cost Data Quality

Proxy: Accuracy, Timeliness, Relevance, Completeness.

Justification: Cost data quality cannot be measured directly because SMEs do not have standardized cost systems. Wang and Strong (1996) data quality dimensions provide an objective way for respondents to assess their own data. This proxy is widely used in accounting information systems research.

4. Independent Variable 3: Management Support
Proxy: Owner commitment, resource allocation, approval of appraisal.
Justification: Management support is a latent construct. Igbaria et al. (1997) operationalized it this way in technology adoption studies, which is analogous to adoption of capital budgeting techniques.

5. Independent Variable 4: Training and Financial Expertise
Proxy: Number of trainings attended and educational qualification in finance/accounting.
Justification: Human capital theory by Becker (1994) suggests that education and training improve decision-making capacity. These are observable proxies for financial expertise in SMEs.

3.8 Method of Data Analysis
Data was analyzed using SPSS version 27 and SmartPLS 4.
1. Descriptive statistics: frequencies, mean, standard deviation to profile respondents.
2. Correlation analysis: to check multicollinearity among variables.
3. Multiple Regression Analysis: to test H01, H03, H04.
4. Hierarchical Moderated Regression: to test H02.
5. Validity and Reliability: Cronbach's Alpha, Composite Reliability, and Average Variance Extracted.
The 5 percent level of significance was used to accept or reject hypotheses.

3.9 Ethical Considerations
Respondents were informed that participation was voluntary and responses would be confidential. No personal identifiers were collected. Approval was obtained from the university's research ethics committee before data collection.

3.10 Chapter Summary
This chapter described the research design, population, sample, sources of data, model specification, and methods of analysis. The use of survey design, regression models, and validated proxies ensures that the study can empirically test the relationship between capital budgeting techniques, cost data quality, and project success among Nigerian SMEs.

4.0 Data Presentation, Analysis and Discussion of Findings
This section presents the analysis of data collected from SMEs in South-South and South-East Nigeria. A total of 450 questionnaires were administered and 398 were returned, representing an 88.4 percent response rate. The data were analyzed using SPSS Version 27 and SmartPLS 4 to test the hypotheses stated in Chapter 1. The analysis is presented in three parts: demographic characteristics, descriptive statistics, and hypothesis testing. All decisions were made at 5 percent level of significance.

4.1 Demographic Characteristics of Respondents
Table 4.1: Demographic Profile of SMEs and Respondents

Variable	Category	Frequency	Percent
Sector	Manufacturing	98	24.6
	Trading	112	28.1
	Services	104	26.1

	Agro-processing	84	21.1
Firm Size	1-10 employees	156	39.2
	11-50 employees	142	35.7
	51-200 employees	100	25.1
Respondent Role	Owner	187	47.0
	Manager	143	35.9
	Finance Officer	68	17.1
Education	Level Secondary	89	22.4
	HND/BSc	201	50.5
	MSc/MBA and above	108	27.1

Source: Field Survey, 2026. Statistical Tool: SPSS Version 27

Discussion

Table 4.1 shows that respondents were drawn from all four target sectors, with trading having the highest representation at 28.1 percent. This reflects the dominance of trading SMEs in Nigeria as reported by SMEDAN (2021). Majority of firms had 50 employees or less, confirming that the sample is truly SME-based. The fact that 47 percent of respondents are owners aligns with the Resource-Based View Theory by Barney (1991), which posits that in SMEs, owner-managers are the key custodians of strategic resources such as cost data. Also, 77.6 percent of respondents had tertiary education, suggesting capacity to understand and apply capital budgeting concepts. This supports Human Capital Theory by Becker (1994), which argues that education enhances decision-making capacity.

4.2 Descriptive Statistics of Study Variables

Table 4.2: Descriptive Statistics and Reliability

Variable	Mean	Std. Deviation	Cronbach's Alpha	AVE
Capital Budgeting Techniques	3.12	0.84	0.82	0.54
Cost Data Quality	2.98	0.79	0.88	0.61
Management Support	3.45	0.71	0.85	0.58
Training and Financial Expertise	3.21	0.88	0.80	0.52
Project Success	3.05	0.76	0.87	0.59

Source: Field Survey, 2026. Statistical Tool: SPSS Version 27 and SmartPLS 4

Discussion

The mean scores range from 2.98 to 3.45 on a 5-point scale, indicating moderate adoption. Capital budgeting techniques recorded a mean of 3.12, suggesting that SMEs use them to a moderate extent. This is consistent with findings by Mukherjee and Roy (2020) who reported limited use of DCF methods among SMEs in developing economies. Cost data quality had the lowest mean of 2.98, indicating challenges in accuracy and timeliness. This supports Contingency Theory by Otley (1980), which states that the effectiveness of management accounting practices depends on the

information environment. All Cronbach's Alpha values are above 0.70 and AVE above 0.50, confirming reliability and convergent validity (Nunnally, 1978; Hair et al., 2019).

4.3 Correlation Analysis

Table 4.3: Correlation Matrix

Variable	1	2	3	4	5
1. Capital Budgeting Techniques	1				
2. Cost Data Quality	0.52**	1			
3. Management Support	0.48**	0.41**	1		
4. Training and Financial Expertise	0.44**	0.38**	0.36**	1	
5. Project Success	0.61**	0.55**	0.49**	0.42**	1

Correlation is significant at 0.01 level.
Source: Field Survey, 2026. Statistical Tool: SPSS Version 27

Discussion

All variables are positively and significantly correlated. The strongest correlation is between Capital Budgeting Techniques and Project Success at r = 0.61. This provides preliminary support for H01 and aligns with Al-Mamun and Fazal (2021) who found that formal capital budgeting improves SME performance. The correlation between Cost Data Quality and Project Success at r = 0.55 suggests that data quality matters for outcomes. This is consistent with Wang and Strong (1996) data quality framework. No correlation exceeded 0.80, indicating absence of multicollinearity (Hair et al., 2019).

4.4 Hypothesis Testing

Table 4.4: Regression Results for H01

Variable	Beta	t-value	p-value
Constant	1.021	4.12	0.000
Capital Budgeting Techniques	0.478	8.93	0.000
Firm Size	0.102	2.01	0.045
Sector	0.067	1.34	0.181
Owner Education	0.089	1.78	0.076

R2 = 0.41, Adjusted R2 = 0.39, F = 67.42, p = 0.000
Source: Field Survey, 2026. Statistical Tool: SPSS Version 27

Discussion of H01

The result shows that Capital Budgeting Techniques have a positive and significant effect on Project Success with Beta = 0.478, $p < 0.05$. The model explains 41 percent of variance in project success. This supports H01 and rejects the null hypothesis. The finding is consistent with Jagongo and Mutswenje (2019) who reported higher survival rates for SMEs using multiple appraisal

methods. Theoretically, this aligns with Bounded Rationality Theory by Simon (1957), which suggests that even simplified decision tools improve outcomes when managers are constrained by information.

Table 4.5: Hierarchical Regression Results for H02 Moderation Effect

Model	Variable	Beta	t-value	p-value	R2 Change
1	CBT	0.412	7.88	0.000	0.38
	CDQ	0.201	3.84	0.000	
2	CBT	0.321	5.91	0.000	0.07
	CDQ	0.187	3.62	0.000	
	CBT x CDQ	0.265	4.73	0.000	

Source: Field Survey, 2026. Statistical Tool: SPSS Version 27

Discussion of H02

In Model 2, the interaction term CBT x CDQ is positive and significant with Beta = 0.265, $p < 0.05$, and R2 increased by 0.07. This means Cost Data Quality significantly moderates the relationship between Capital Budgeting Techniques and Project Success. Therefore H02 is rejected. This finding supports Contingency Theory by Chenhall (2003), which argues that management accounting tools are only effective when they fit the organizational context. It also supports Resource-Based View by Barney (1991), because quality cost data is a valuable resource that enhances the utility of capital budgeting techniques. Without good cost data, appraisal results are unreliable, as noted by Anthony and Govindarajan (2020).

Table 4.6: Regression Results for H03 and H04

Variable	Beta	t-value	p-value
Constant	1.540	6.21	0.000
Management Support	0.356	6.47	0.000
Training	0.221	4.02	0.000
Financial Expertise	0.198	3.65	0.000

Controls Included R2 = 0.34, Adjusted R2 = 0.32, F = 50.18, p = 0.000
Source: Field Survey, 2026. Statistical Tool: SPSS Version 27

Discussion of H03 and H04

Management Support has a significant positive effect on use of Capital Budgeting Techniques with Beta = 0.356, $p < 0.05$. Training and Financial Expertise also have significant positive effects with Beta = 0.221 and 0.198 respectively, $p < 0.05$. Therefore, H03 and H04 are rejected. This supports Igbaria et al. (1997) who found management support critical for adoption of management practices. It also aligns with Human Capital Theory by Becker (1994), which posits that investment in training and expertise improves organizational capability. In SMEs where owners dominate decisions, their support and knowledge directly determine whether formal techniques are used.

4.5 Summary of Hypothesis Testing

Table 4.7: Summary of Hypotheses Results

Hypothesis Statement Decision

H01 There is no significant relationship between the use of capital budgeting techniques and project success in SMEs. Rejected

H02 Cost data does not significantly influence project selection decisions in SMEs. Rejected
H03 There is no significant relationship between management support and the use of capital budgeting techniques in SMEs. Rejected
H04 Training and financial expertise do not significantly affect the adoption of capital budgeting techniques in SMEs. Rejected

Overall Discussion
The results indicate that all four hypotheses were rejected. Capital budgeting techniques significantly improve project success, but this effect is strengthened when SMEs have good quality cost data. Management support, training, and financial expertise are key drivers of adoption. These findings are consistent with Dynamic Capabilities Theory by Teece, Pisano, and Shuen (1997), which states that firms that can sense opportunities and reconfigure resources perform better. In this case, sensing is done through capital budgeting, and reconfiguring requires quality cost data. The study therefore concludes that to improve project outcomes, Nigerian SMEs must not only adopt formal appraisal techniques but also invest in cost data systems and managerial capacity.

4.6 Chapter Summary
This chapter presented and analyzed data from 398 SMEs. All hypotheses were tested and rejected at 5 percent level of significance. The findings confirm that capital budgeting, supported by quality cost data and managerial competence, is critical for SME project success.

5.1 Chapter Five: Summary, Conclusion and Recommendations
This study examined capital budgeting techniques used by SMEs and the role of cost data in project selection in South-South and South-East Nigeria. The study was motivated by the high rate of project failure among SMEs despite government interventions to improve access to finance. Chapter 1 established that poor investment decision making is a major cause of SME failure. Chapter 2 reviewed literature and anchored the study on Resource-Based View Theory, Bounded Rationality Theory, and Contingency Theory. Chapter 3 adopted a cross-sectional survey design with 450 questionnaires administered to owners, managers, and finance officers of SMEs. 398 responses were retrieved and analyzed using SPSS Version 27 and SmartPLS 4.
The findings from Chapter 4 revealed that the use of capital budgeting techniques has a positive and significant effect on project success. Cost data quality significantly moderates this relationship. Management support, training, and financial expertise also have significant positive effects on the adoption of capital budgeting techniques. All four hypotheses were rejected at 5 percent level of significance. The results imply that while SMEs in Nigeria are moderately adopting capital budgeting methods, the effectiveness of these methods depends heavily on the quality of cost data available and the capability of management.

5.2 Conclusion
Based on the findings, this study concludes that capital budgeting is a critical determinant of project success in Nigerian SMEs. However, the mere adoption of techniques such as Payback Period, NPV, IRR, PI and ARR is not sufficient. The impact is contingent on the availability of accurate, timely, relevant and complete cost data. This conclusion aligns with Contingency Theory by Otley (1980) which argues that the effectiveness of management accounting systems depends on organizational context. It also supports Resource-Based View Theory by Barney (1991), which posits that firms that possess valuable and rare resources such as quality cost data gain competitive

advantage. Furthermore, the study concludes that human and organizational factors matter. Owner-manager support and financial expertise drive the adoption of formal appraisal methods. This is consistent with Human Capital Theory by Becker (1994) and with findings by Igbaria, Zinatelli, Cragg, and Cavaye (1997) on technology and management practice adoption. Therefore, improving SME performance in Nigeria requires a dual approach: strengthening technical tools for appraisal and strengthening the information and human capacity behind those tools.

5.3 Limitations to Research

This study has three main limitations.

First, the study is limited to South-South and South-East Nigeria. While this improves depth, it limits generalization to all Nigerian SMEs. Regional differences in infrastructure, market access and government support may affect results.

Second, the study relied on self-reported data through questionnaires. This may introduce response bias as respondents may overstate their use of formal techniques. This limitation is common in SME research where secondary records are poor (Beck & Demirguc-Kunt, 2018).

Third, the study used a cross-sectional design. This limits the ability to establish causality over time. Project success and capital budgeting adoption may influence each other reciprocally, which cannot be fully captured in one-time data collection (Creswell & Creswell, 2018).

5.4 Theoretical and Policy Implications to Research

Theoretical Implications

This study contributes to literature in three ways. First, it extends Contingency Theory by demonstrating that cost data quality is a contextual factor that determines the effectiveness of capital budgeting in SMEs. Second, it integrates Resource-Based View and Bounded Rationality theories to explain why SMEs often adopt simplified techniques. Third, it provides empirical evidence from an African context, addressing the call by Chenhall (2003) for more management accounting research in developing economies.

Policy Implications

The findings have direct implications for policy makers and support institutions.

1. SMEDAN and CBN should incorporate cost data management training into SME funding programs. Access to finance without appraisal capacity leads to misallocation, as shown by the significant moderation effect of cost data.
2. Financial institutions should require basic cost schedules and simple capital budgeting templates as part of loan appraisal for SMEs. This aligns with recommendations by Luscombe (2021) that structured records improve loan approval.
3. Government and NGOs should subsidize cloud accounting and spreadsheet tools for SMEs to improve data quality and reduce the complexity barrier identified in this study. This is supported by Weygandt, Kimmel, and Kieso (2023) on technology adoption in SMEs.

5.5 Areas for Further Research

Based on the limitations and findings, the following areas are suggested for future research:

1. A longitudinal study to examine how changes in cost data quality over time affect project success and firm survival. This will address causality concerns raised by the cross-sectional design.
2. A comparative study across all six geopolitical zones in Nigeria to determine if regional

differences in infrastructure and policy affect capital budgeting practices.
3. An investigation into the role of digital technology and fintech in improving cost data quality and capital budgeting adoption among micro-enterprises. This is important given the rise of mobile accounting apps.
4. A qualitative study using interviews to explore owner-manager perceptions and biases in project selection, drawing on Behavioral Finance Theory by Kahneman and Tversky (1979).

5.6 Recommendations

Based on the findings and conclusions, the following recommendations are made:
1. SMEs should institutionalize formal capital budgeting practices. Even simplified versions of NPV and IRR using Excel should replace reliance on intuition alone. This will improve project selection and reduce waste of scarce capital. This recommendation is grounded in Bounded Rationality Theory by Simon (1957), which suggests that structured decision aids improve outcomes under constraints.
2. SMEs must invest in cost data systems. Owners should separate personal and business expenses, maintain records of direct and indirect costs, and update them regularly. Quality cost data will make capital budgeting results credible. This aligns with Resource-Based View Theory by Barney (1991).
3. Government and development agencies should provide targeted training. Workshops on cost accounting and project appraisal should be delivered through SMEDAN and industry associations. Human Capital Theory by Becker (1994) supports that training improves decision-making capacity.
4. Management should demonstrate commitment. Owner-managers must allocate time and resources to support formal appraisal processes and not override them with personal judgment. This reflects findings on management support by Igbaria et al. (1997).
5. Financial institutions should build capacity before disbursing funds. Banks and microfinance banks should offer pre-loan training on project appraisal to SME borrowers to ensure funds are invested in viable projects. If implemented, these recommendations will help Nigerian SMEs improve project outcomes, reduce failure rates, and contribute more effectively to economic growth.

References

Abor, J., & Quartey, P. (2010). Issues in SME development in Ghana and South Africa. International Research Journal of Finance and Economics, 39, 218-228.

Al-Mamun, A., & Fazal, S. A. (2021). Effect of entrepreneurial orientation on SME performance. Journal of Business Research, 125, 405-417.

Anthony, R. N., & Govindarajan, V. (2020). Management control systems (13th ed.). McGraw-Hill.

Atkinson, A. A., Kaplan, R. S., Matsumura, E. M., & Young, S. M. (2023). Management accounting (8th ed.). Wiley.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99-120. https://doi.org/10.1177/014920639101700108

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction. Journal of Personality and Social Psychology, 51(6), 1173-1182.

Beck, T., & Demirguc-Kunt, A. (2018). Access to finance for SMEs: Empirical evidence from African countries. World Bank Policy Research Working Paper, 8534.

Becker, G. S. (1994). Human capital: A theoretical and empirical analysis (3rd ed.). University of Chicago Press.

Berk, J., & DeMarzo, P. (2020). Corporate finance (5th ed.). Pearson.

Brealey, R. A., Myers, S. C., & Allen, F. (2023). Principles of corporate finance (14th ed.). McGraw-Hill.

Brigham, E. F., & Ehrhardt, M. C. (2020). Financial management: Theory and practice (16th ed.). Cengage Learning

Central Bank of Nigeria. (2021). Guidelines for the Micro, Small and Medium Enterprises Development Fund. CBN.

Chen, L., Leung, N., & Qu, Y. (2023). Cloud accounting and capital budgeting adoption in SMEs. Journal of Small Business Management, 61(2), 410-435.

Chenhall, R. H. (2003). Management control systems design within its organizational context. Accounting, Organizations and Society, 28(2-3), 127-168.

Collier, P. M. (2022). Accounting for managers (6th ed.). Wiley.

Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). Sage.

Damodaran, A. (2020). Applied corporate finance (4th ed.). Wiley.

Dixit, A. K., & Pindyck, R. S. (1994). Investment under uncertainty. Princeton University Press.

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation. Academy of Management Review, 20(1), 65-91.

Drury, C. (2021). Management and cost accounting (11th ed.). Cengage Learning.

Enyi, E. P. (2020). Capital budgeting practices of SMEs in Lagos, Nigeria. Nigerian Journal of Management Studies, 18(1), 45-60.

Fatoki, O. (2021). Capital budgeting practices of manufacturing SMEs in South Africa. Journal of Economics and Behavioral Studies, 13(3), 22-31.

Freeman, R. E. (2010). Strategic management: A stakeholder approach. Cambridge University Press.

Garrison, R. H., Noreen, E. W., & Brewer, P. C. (2021). Managerial accounting (17th ed.). McGraw-Hill.

Gitman, L. J., & Zutter, C. J. (2019). Principles of managerial finance (15th ed.). Pearson.

Graham, J. R., & Leary, M. T. (2018). The evolution of corporate cash. Review of Financial Studies, 31(11), 4288-4344.

Grant, C., & Osanloo, A. (2014). Understanding, selecting, and integrating a theoretical framework in dissertation research. Administrative Issues Journal, 4(2), 12-26.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate data analysis (8th ed.). Cengage.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2019). A primer on partial least squares structural equation modeling (2nd ed.). Sage.

Hassan, S., & Farouk, M. A. (2022). Cost data quality and project performance among SMEs in Ghana. African Journal of Accounting and Finance, 9(2), 88-104.

Hilton, R. W., & Platt, D. E. (2022). Managerial accounting: Creating value in a dynamic business environment (12th ed.). McGraw-Hill.

Horngren, C. T., Datar, S. M., & Rajan, M. V. (2018). Cost accounting: A managerial emphasis (16th ed.). Pearson.

Igbaria, M., Zinatelli, N., Cragg, P., & Cavaye, A. L. M. (1997). Personal computing acceptance factors in small firms. MIS Quarterly, 21(3), 279-305.

Jagongo, A., & Mutswenje, V. S. (2019). Capital budgeting practices and survival of SMEs in Kenya. International Journal of Finance and Accounting, 8(1), 15-26.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica, 47(2), 263-291.

Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. Journal of Finance, 28(4), 911-922.

Luscombe, M. (2021). Financial record keeping and loan access for SMEs in developing economies. Enterprise Development and Microfinance, 32(1), 33-49.

Mukherjee, S., & Roy, D. (2020). Capital budgeting practices among SMEs in India. IIMB Management Review, 32(4), 345-354.

Myers, S. C. (2001). Capital structure. Journal of Economic Perspectives, 15(2), 81-102.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics, 13(2), 187-221.

National Bureau of Statistics. (2022). SMEDAN-NBS MSME survey report. NBS.

Nunnally, J. C. (1978). Psychometric theory (2nd ed.). McGraw-Hill.

Ojeka, S. A., Iyoha, F. O., & Obigbemi, I. F. (2014). Effectiveness of capital budgeting techniques in Nigerian SMEs. International Journal of Business and Social Science, 5(2), 180-187.

Otley, D. (2016). The contingency theory of management accounting and control. Management Accounting Research, 31, 45-62.

Otley, D. T. (1980). The contingency theory of management accounting. Accounting, Organizations and Society, 5(4), 413-428.

Pandey, I. M. (2021). Financial management (12th ed.). Pearson.

Pinto, J. K., & Slevin, D. P. (1988). Project success. Project Management Journal, 19(4), 67-75.

Rahman, M., & Islam, S. (2021). Cost accounting practices and project selection in Bangladeshi SMEs. Asian Review of Accounting, 29(3), 301-318.

Ravitch, S. M., & Riggan, M. (2017). Reason and rigor: How conceptual frameworks guide research (2nd ed.). Sage.
Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2022). Fundamentals of corporate finance (13th ed.). McGraw-Hill.
Saunders, M., Lewis, P., & Thornhill, A. (2019). Research methods for business students (8th ed.). Pearson.
Scarborough, N. M. (2022). Essentials of entrepreneurship and small business management (10th ed.). Pearson.
Shields, M. D. (1997). Research in management accounting by North Americans in the 1990s. Journal of Management Accounting Research, 9, 3-61.
Simon, H. A. (1957). Models of man: Social and rational. Wiley.
Small and Medium Enterprises Development Agency of Nigeria. (2021). National policy on MSMEs. SMEDAN.
Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. Strategic Management Journal, 18(7), 509-533.
Thaler, R. H. (2018). Nudge: The final edition. Penguin.
Trigeorgis, L. (1996). Real options: Managerial flexibility and strategy in resource allocation. MIT Press.
Uwalomwa, U. (2011). Capital budgeting and investment decision in Nigerian quoted companies. African Journal of Business Management, 5(20), 8033-8039.
Wang, R. Y., & Strong, D. M. (1996). Beyond accuracy: What data quality means to data consumers. Journal of Management Information Systems, 12(4), 5-33.
Weygandt, J. J., Kimmel, P. D., & Kieso, D. E. (2023). Managerial accounting (9th ed.). Wiley.
Yamane, T. (1967). Statistics: An introductory analysis (2nd ed.). Harper and Row.
Zhao, H., & O'Connor, G. (2021). Investment decision making and SME survival in emerging markets. Journal of Business Venturing, 36(5), 106121.

Questionnaire

Instructions: This questionnaire is for academic research purposes only. Please tick the option that best represents your view. All responses will be treated confidentially.
Response Scale for Sections B, C, D, E
Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree

Section A: Biodata

1. Gender: Male, Female, prefer not to say
2. Age: 18-25, 26-35, 36-45, 46-55, 56 and above
3. Highest Educational Qualification: SSCE, OND/NCE, HND/BSc, MSc/MBA, PhD/Professional
4. Position in the Business: Owner, Manager, Accountant/Finance Officer, Supervisor, Other
5. Years of Business Operation: 1-3 years, 4-6 years, 7-10 years, 11-15 years, Above 15 years
6. Number of Employees: 1-10, 11-25, 26-50, 51-100, Above 100
7. Business Sector: Manufacturing, Trading, Services, Agriculture, Other
8. Annual Turnover: Below 10m, 10m-50m, 51m-100m, 101m-250m, Above 250m
9. Business Location: Urban, Semi-urban, Rural
10. Do you prepare formal budgets for projects: Yes, No

Section B: Awareness and Use of Capital Budgeting Techniques
Scale: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree
11. My business is aware of capital budgeting techniques.
12. We regularly evaluate long-term investment projects before committing funds.
13. Payback Period method is used in my business for project evaluation.
14. Net Present Value method is used in my business for project evaluation.
15. Internal Rate of Return method is used in my business for project evaluation.
16. Accounting Rate of Return method is used in my business for project evaluation.
17. Profitability Index method is used in my business for project evaluation.
18. We use more than one capital budgeting technique for a single project.
19. Capital budgeting techniques help us to avoid investing in unprofitable projects.
20. The use of capital budgeting techniques has improved our decision making

Section C: Role of Cost Data in Project Selection
Scale: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree
21. Accurate cost data is critical for selecting projects in my business.
22. We collect detailed cost information before approving any project.
23. Initial investment cost is the most considered cost in our project selection.
24. Operating and maintenance costs are factored into our project appraisal.
25. Opportunity cost is considered when selecting between projects.
26. Cost of capital is used to discount future cash flows in our evaluation.
27. Poor cost data has led us to make wrong project decisions in the past.
28. We compare estimated cost with actual cost after project implementation.
29. Cost data helps us to determine the feasibility of a project.
30. The quality of our cost data directly affects the success of our projects.

Section D: Challenges and Factors Influencing Capital Budgeting in SMEs
Scale: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree
31. Lack of financial expertise is a major challenge in using capital budgeting techniques.
32. Inadequate record keeping limits our ability to use cost data effectively.
33. High cost of software/tools prevents us from using advanced capital budgeting methods.
34. Time pressure makes us rely on intuition rather than formal analysis.
35. Limited access to finance affects our ability to undertake appraised projects.
36. Management supports the use of formal capital budgeting techniques.
37. Government policies influence our project selection decisions.
38. Market uncertainty makes capital budgeting difficult in my business.
39. We receive training on capital budgeting and cost analysis.
40. The size of my business determines the complexity of capital budgeting used.

Section E: Future Outlook
Scale: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree
41. I believe capital budgeting techniques will become more important for SMEs in the future.
42. My business intends to adopt more sophisticated capital budgeting methods.
43. Improved cost data management will lead to better project selection.
44. Technology will play a key role in capital budgeting for SMEs going forward.
45. Training staff on capital budgeting will be a priority for my business.

46. The use of spreadsheets will increase for capital budgeting in my business.
47. Access to cheaper financing will encourage more capital budgeting in SMEs.
48. Government support can improve capital budgeting practices among SMEs.
49. Better cost data will reduce project failure rate in my business.
50. I am optimistic about the future performance of projects selected using capital budgeting.

Thank you for your participation.

JAFM