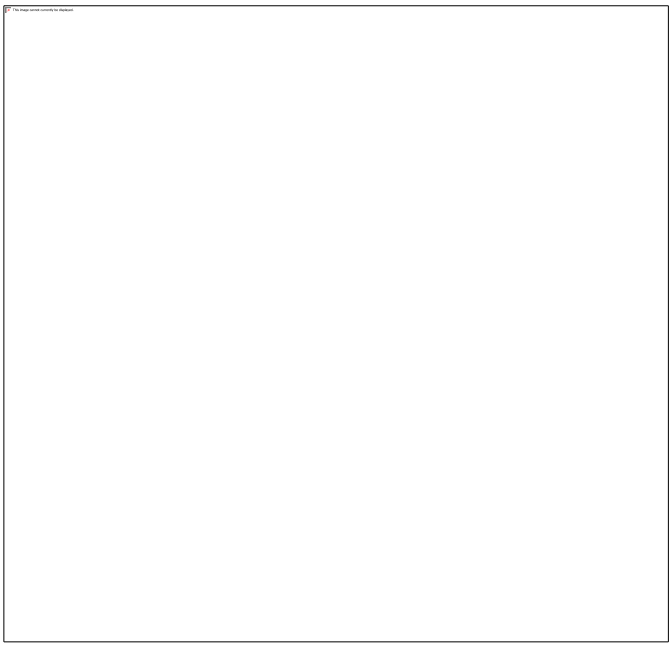
BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

DEPARTMENT OF ACCOUNTANCY



EMPLOYEES PERCEPTIONS OF THE EFFECTIVENESS OF VARIANCE ANALYSIS AS A COST CONTROL TOOL IN THE CONSTRUCTION INDUSTRY: A CASE OF KW BLASTING COMPANY IN BINDURA

BY

ANNAH CHAKANETSA

B223258B

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR A BACHELOR OF ACCOUNTANCY HONOURS DEGREE.

BINDURA ZIMBABWE

JUNE 2026

RELEASE FORM

NAME OF AUTHOR : ANNAH CHAKANETSA

PROJECT TITLE : EMPLOYEES PERCEPTIONS FOR THE EFFECTIVENESS OF VARIANCE ANALYSIS AS A COST CONTROL TOOL IN THE CONSTRUCTION INDUSTRY. A CASE STUDY OF KW BLASTING IN BINDURA.

YEAR OF COMPLETION : 2026

Hereby, the author grants Bindura University of Science and Education permission to reproduce single copies of this project for private, scholarly research purposes only. The author does not reserve any other rights of publication for the project or for lengthy extracts from it in printed or other media, without the express written consent of the author.

Permanent Address 3710 Kuwadzana 4

APPROVAL FORM

This dissertation is entitled:

"EMPLOYEES PERCEPTIONS FOR THE EFFECTIVENESS OF VARIANCE ANALYSIS AS A COST CONTROL TOOL IN THE CONSTRUCTION INDUSTRY: A CASE STUDY OF KW BLASTING IN BINDURA"

Submitted by ANNAH CHAKANETSA in partial fulfilment of the requirements for the Bachelor of Accountancy Honours Degree of Bindura University of Science Education has been examined and approved for submission.

STUDENT"S DECLARATION

I declare that this dissertation was prepared and completed in accordance with the regulations and academic standards prescribed by the Faculty of Commerce.

Signature…

Date…21…/.08…/…2026

SUPERVISOR'S RECOMMENDATION

I confirm that I supervised this dissertation and I am satisfied that it meets the required academic standards for submission to the Faculty of Commerce.

Supervisor's Signature……

Date.21…/.08…/…2026…

DEPARTMENTAL APPROVAL

I certify that this dissertation conforms to departmental requirements and is approved for acceptance by the department.

Chairperson's Signature…

Date…22…/.08…/……2026.

DEDICATION

I dedicate this dissertation to my beloved parents and family whose endless support encouragement and sacrifices, made this academic journey possible. Their constant belief in me, guidance and motivation gave me the determination to overcome every challenge throughout my studies.

I also dedicate this work to the almighty God for His grace, wisdom, strength and guidance throughout the entire period of my academic pursuit.

ABSTRACT

Variance analysis as a cost control tool in construction industry in a case study KW Blasting Bindura was the study area to test the effectiveness of variance analysis as a cost control tool in the construction industry. The study's objective was to identify the implementation of variance analysis and its role in cost control, evaluate various challenges that affect the implementation, as well as proposed ways to improve its implementation. The method and technique employed was the case study research design which used the quantitative approach. The data for this was gathered by questionnaires from workers in the finance area, procurement, operations and project management. The respondents responsible for the information on variance analysis and cost control practices in the company were selected using purposive sampling technique. The Statistical Package for Social Sciences (SPSS) version 26 was used in analyzing the data. Data were presented as descriptive statistics including frequencies, percentages, tables and the relationships between variables were analyzed by the Analysis of Variance (ANOVA). Finally, the study found that the effective implementation of variance analysis enhanced the cost control and operational efficiency in construction companies. The study had some recommendations for the enhancement of cost control practices. KW Blasting should improve and strengthen its budgeting systems, increase continuous cost monitoring and implement modern accounting systems.

ACKNOWLEDGEMENTS

I would like to send my gratefulness to my supervisor for his useful guidance, encouragement and constructive criticism throughout this research. His dedication, patience and academic support greatly contributed to the successful completion of this dissertation.

Furthermore, I would like to express my gratefulness to the management and staff of KW Blasting for their cooperation and help in collecting the data. This study benefited from their willingness to provide the information needed.

I am most thankful above all to the Almighty God who has endowed me with wisdom, strength, good health and guidance in my academic life and during this completion of my dissertation.

Table of Contents

RELEASE FORM....ii
APPROVAL FORM....iii
DEDICATION....iv
ABSTRACT....v
ACKNOWLEDGEMENTS....vi
LIST OF TABLES....ix
CHAPTER I....1
INTRODUCTION....1
1.0 Introduction....1
1.1 Background of study....1
1.2 Statement of the Problem....2
1.3 Research Objectives....2
1.4 Research Questions....2
1.5 Significance of the study....3
1.5.1 To the researcher....3
1.5.2 To KW Blasting industry....3
1.5.4 Assumptions of the study....3
1.5.6 Limitations of study....4
1.5.7 Delimitations of the study....4
1.5.8 Definition of key Terms....4
1.6 Chapter Summary....5
CHAPTER II....6
LITERATURE REVIEW....6
2.1 Conceptual Review....6
2.6 Theoretical Review....7
2.6.1 Scientific Management Theory....7
2.6.2 Budgetary Control Theory....7
2.6.3 Kaizen Costing Theory....8
2.7 Empirical Literature Review....9

2.7.1 Adusei and Owusu (2024): Variance Analysis and Cost Management Performance in Construction Firms in Ghana 9
2.7.2 Ndlovu and Mhlanga (2023): Cost Control Practices in Zimbabwean Construction Companies 9
2.7.3 Okoye et al. (2022): Variance Analysis and Organisational Performance in Nigeria 9
2.9 Summary 10
CHAPTER III 11
METHODOLOGY 11
3.0 Introduction 11
3.1 Research Approach 11
3.2 Research Design 11
3.6 Data Collection Methods/Research Instruments 12
3.7 Sources of Data 13
3.8 Questionnaires 13
3.9.1 Validity 14
3.9.2 Reliability 14
3.10 Data Analysis Techniques 15
3.11 Ethical Considerations 15
3.12 Chapter Summary 15
CHAPTER IV 16
DATA PRESENTATION, DISCUSSIONS AND ANALYSIS 16
4.0 Introduction 16
4.1 Response Rate 16
4.2 Reliability Test 17
4.3 Demographic Information 17
4.5 Age of respondents 18
4.7 Objective two: Assess the effectiveness of variance analysis in reducing material, labor and overhead cost deviations. 22
4.8 Objective Three: Identify the issues and problems with operating and organizational practices that prevent effective variance analysis in the company 25
4.9 Summary 29
5.1.1 Objective One: Identify the level of usage of variance analysis in the cost control system at KW Blasting. 30
APPENDIX 2: QUESTIONNAIRE 39

LIST OF TABLES

Table	Description	Page
4.1.1	Questionnaire response rate	33
4.4.1	Gender	34
4.5.1	Age of respondents	35
4.6.2	Work Experience of Respondents	36
4.7.2	Level of Qualification	37
4.8	Determination of how variance analysis is applied within the cost systems	38-40
4.9	Evaluation of variance analysis effectiveness	42-44
4.10	Assessment of the relationship between variance analysis and cost control	45-47
4.11	Identification of operational and organizational challenges affecting the	50-52

	implementation of variance analysis	

CHAPTER I

INTRODUCTION

1.0 Introduction

The background of the study, problem statement, aims and underlying presumptions about the subject of inquiry are the main topics of this chapter. The chapter also emphasizes the importance, constraints and boundaries related to the field of study.

1.1 Background of study

The construction industry is one of the most cost-intensive sectors because it is characterised by high capital investment, fluctuating material prices, labor-intensive operations and significant overhead costs. These characteristics make effective cost control essential for ensuring project success and organisational profitability. According to Moyo and Chigara (2022), construction firms frequently experience cost overruns arising from fluctuations in material prices, labour productivity and equipment utilisation. Menéndez et al. (2025) further argue that inadequate monitoring of project expenditure contributes to budget overruns and reduced organisational performance. Variance analysis has been widely recognised as an important management accounting technique for cost control because it compares actual costs with predetermined standards or budgets and identifies deviations requiring corrective action. Bragg (2025) states that variance analysis enables management to monitor material, labour and overhead cost variances, identify inefficiencies and improve managerial decision-making. Similarly, Hansen, Mowen and Heitger (2022) found that organisations that regularly perform variance analysis achieve stronger budgetary control and better financial performance than those that do not. These studies demonstrate the importance of variance analysis in promoting accountability and improving resource utilisation.

Studies conducted in other African countries also support the positive relationship between variance analysis and organisational performance. Adusei and Owusu (2024) found that regular monitoring of material, labour and overhead variances significantly improved cost management and managerial decision-making among construction firms in Ghana. Similarly,

Okoye et al. (2022) reported that Nigerian firms with strong variance monitoring systems achieved better operational efficiency and profitability.

Therefore, a clear research gap exists regarding the effectiveness of variance analysis as a cost control tool in specialised construction firms operating under Zimbabwe's prevailing economic conditions. This study seeks to fill that gap by evaluating the effectiveness of variance analysis at KW Blasting Company in Bindura. The findings are expected to contribute to management accounting literature and provide practical recommendations for improving cost control practices within the construction industry.

1.2 Statement of the Problem

Although the variance analysis is a widely used cost control tool, there are still issues such as inflationary pressures, pricing of inputs and inadequate cost monitoring systems facing construction companies (Ndlovu & Mhlanga, 2023; Nyoni & Dube, 2024). While there are some other studies that have investigated effectiveness of variance analysis, little has been done to include workers' perception on variance analysis's effectiveness especially in specialised building firms in Zimbabwe. Therefore, there is limited understanding about the effectiveness of variance analysis in assisting cost control amongst KW Blasting workforces. Hence, the purpose of this study is to fill the above gap and to find out the perception of the employees about the effectiveness of variance analysis as a cost control tool of KW Blasting Company, Bindura.

1.3 Research Objectives

i. Identify the level of usage of variance analysis in the cost control system in KW Blasting.

ii. Assess the effectiveness of variance analysis in controlling the deviation of material, labor and overheads costs

iii To determine operational and organizational challenges towards the effective implementation of variance analysis

1.4 Research Questions

i In what way was variance analysis used as a cost control tool at KW Blasting?

ii What part of the cost control operation did variance analysis play for KW Blasting?

iii What are the operational and organizational challenges that would impact the implementation of variance analysis in the company?

1.5 Significance of the study

1.5.1 To the researcher

The researcher found that the study was valuable for reflecting the facts and extracting an evidence-based evaluation of the implications of the variance analysis to cost control performance at KW Blasting. The results helped the researcher to detect the gap in the company's variance handling and also helped in knowing the efficiency of any corrective cost control activity in the company. The study also contributed to the researcher's knowledge into material, labour and overhead cost management in the construction industry.

1.5.2 To KW Blasting industry

The study adds a contribution to the entire construction industry in Zimbabwe by giving empirical evidence of the effectiveness of variance analysis on the firm's level as a management control technique. The findings provide valuable insights for other building and engineering companies that can help them improve how they monitor costs in an environment where costs fluctuate and there is uncertainty about the operations. The findings from the study can also help to create industry-wide more structured and systematic cost control practices.

1.5.3 To Bindura University of Science and Education

Academically, the study adds to the knowledge based on management control systems, by offering empirical evidence from the Zimbabwean construction industry. Although cost overruns and budgeting problems have been studied, there are precious few studies that have focused on the effectiveness of variance analysis at the firm level in developing countries and have created useful groundwork for future research investigating variance analysis's effectiveness with cost control in developing countries with similar volatile environments.

1.5.4 Assumptions of the study

- It was assumed that participants at KW Blasting provided accurate and honest responses regarding the company’s cost control practices and use of variance analysis.
- It was assumed that the principles and techniques of variance analysis are applicable within construction and blasting operations and can meaningfully influence cost control outcomes.

- It was assumed that some form of Budgeting or Standard Costing was introduced at management level and actual costs could be compared to a budgeted cost.
- The study therefore narrowed down to investigating the effectivity of variance analysis as a cost control tool at KW Blasting, Bindura. Employees from projects and projects related departments, as well as employees from finance and procurement were included in the research. The study was conducted to analyze variance only in terms of material, labour and overhead costs and not in detail other cost control techniques. This study covered the period from 2024 to 2025.

1.5.6 Limitations of study

- The study used part self-reported data by filling their questionnaire. The data obtained can have response bias because the participants might be reluctant to disclose more personal details or might have given a socially desirable answer.
- The study was conducted in a single company, and this limits the generalizability of the findings to other construction companies.
- The study was hindered by inadequate funding throughout data gathering, especially for transportation expenses and Internet connection, which were essential to obtain data information. The researcher however, was able to deal with the limitations carefully.

1.5.7 Delimitations of the study

This study was limited to evaluating the effectiveness of variance analysis as a cost control tool at KW Blasting Company. The research focused on employees from the finance, accounting and operational departments involved in cost control activities. Geographically, the study was confined to KW Blasting operations in Bindura and covered the period from 2024 to 2025.

1.5.8 Definition of key Terms

Variance Analysis

Comparing actual material, labor and overhead costs with budgeted or standard costs to determine and analyse differences (deviations) for corrective action a management accounting technique.

Cost control

A series of activities that track, verify and control project spending so that total spending stays within authorized budgets.

Budgets

A written financial statement showing the anticipated income or expenses over a certain period or project which is used as a target for measuring performance.

Unfavorable Variance

Cost deviation is the difference between the actual and the budgeted or standard cost, which may be due to cost overrun or inefficiency.

Cost Overrun

Any cost that occurred that was more than the budgeted or estimated cost was cost overrun.

1.6 Chapter Summary

The introduction of the study is given in this chapter where background information is provided with respect to the tool of cost control in construction. The chapter outlined the statement of the problem, research objectives and research questions which guided the study. The importance of the research was also discussed with the assumption, delimitations, limitations and definition of key terms. A review of literature relating to variance analysis and cost control of the theoretical and empirical nature is presented in the following chapter.

CHAPTER II

LITERATURE REVIEW

2.0 Introduction

A detailed review of literature is given in this chapter in relation to variance analysis and its use in cost control within the construction industry. The aim of chapter is to set the foundation of a theoretical and empirical ground of the study.

2.1 Conceptual Review

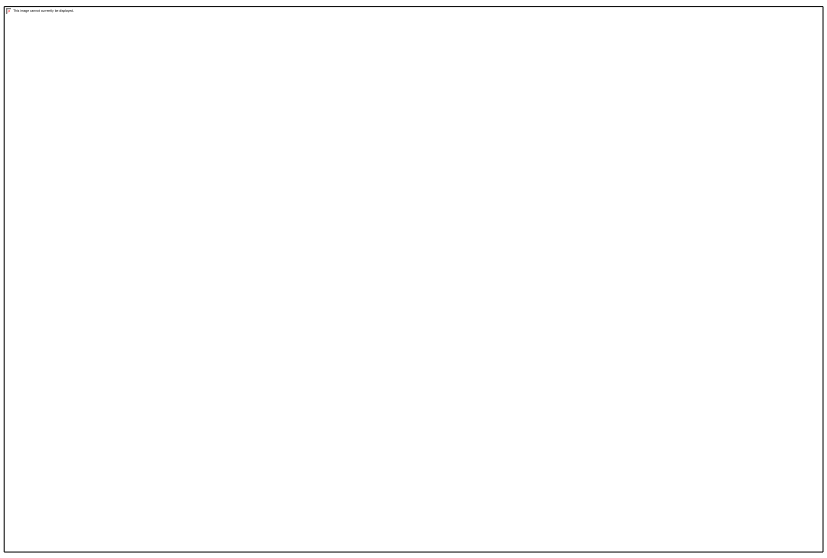


Fig 2.1 Conceptual framework

Source: Bragg, 2025

Explanation

The conceptual framework illustrates the hypothesised relationship between employees' perceptions of variance analysis and employees' perceptions of cost control effectiveness at KW Blasting Company. It proposes that positive perceptions of variance analysis are associated with improved perceptions of budgeting accuracy, cost reduction, efficient resource utilisation and control of cost variances. The framework also recognises that this relationship may be influenced by contextual factors such as economic conditions, organisational factors, employee characteristics, system and process factors. This framework guided the study in identifying the variables to be measured and analysed.

2.6 Theoretical Review

Scientific Management Theory, Budgetary Control Theory and Kaizen costing theory were theories used to give guidance to the study. All this led to an understanding of the role variance analyses could have in helping construction companies control costs and enhance operating efficiency.

2.6.1 Scientific Management Theory

The Scientific Management Theory was propounded by Frederick Winslow Taylor in 1911. The theory focuses on efficiency, standardization and organization performance measurement in operation. To achieve this, Taylor claimed that the productivity of an organization could be enhanced and costs could be reduced by organizing, supervising and monitoring the activities done at work in order.

Effective cost control systems rely on the ongoing monitoring of operations and of performance. (Don Hansen, Maryanne Mowen and Liming Guan, 2022) The scholars mentioned that variance analysis also plays a role in identifying the reasons for inefficiencies and provide essential information for the decision on a cost management plan. Also, Variance analysis is considered a key managerial tool to assess the efficiency of an organization and enhance the control mechanisms in operations, according to Ray Garrison, Eric Noreen and Peter Brewer (2021). Furthermore, Bhimani et al. (2021) endorsed Scientific Management by through the performance measurement feature, operational activities budget-planning and activities monitoring mechanisms which boost the operational efficiency of an organization. The researchers pointed out that monitoring systems are helpful in any organization to reach financial goals and to save superfluous expenses.

2.6.2 Budgetary Control Theory

In 1922 while analyzing an increasing disparity between revenue and expenditure in public budgets, a number of analysts including James O. McKinsey introduced the Budgetary Control Theory. Theory is about budget preparation, coordination and control of organizational activities. The theory suggests that the key to making money better in an organization is to compare actual spending on such plans with the expenditure budget and take corrective action in case deviations are found.

Horngren et al. (2021) indicated that correctly distributing and tracking financial resources to enhance organizational efficiency are responsible for budgetary control systems. The theory is

significant because the construction companies have a budget, which they use to control the costs of the project in order to manage the activities they take part in while they are working. Alnoor Bhimani et al. (2021) outlined that budgetary control systems are key management instruments which help organizations to monitor the financial performance and operational costs of their operations. Scholars said that if organizations have variance reports on a regular basis, they can increase their efficiency, reduce squander and make it more accountable within departments.

Organizational financial control is seen as improving the performance of the organization by maintaining financial discipline and allocation of resources, as cited by Eddie McLaney and David Atrill (2022). The scholars also said that budgets offer targets for performance and variance analysis helps managers to determine if activities are implemented as planned. The scholars also discussed how frequent monitoring of the differences can enhance the decision-making process and boost internal financial controls. Ray Garrison, Eric Noreen and Peter Brewer (2021) noted that budgetary control systems help to enhance the performance of an organization and organizational efficiency.

2.6.3 Kaizen Costing Theory

In 2001, Mr. Yasuhiro Monden came up with the Kaizen Costing Theory. The theory is based on continuous improvement and a step-by-step decrease of operation costs, accomplished by regular monitoring and organization process evaluation. Continuous monitoring of costs to organizations can help them be efficient and profitable in the long run as described by Monden (2001). Some recent scholars are still supporting using Kaizen Costing Theory in organization's cost management and operational efficiency. To effectively realize the continuous improvement methods and employee participation for eliminating waste as the core of Kaizen costing, Masaaki Imai (2021) described how it helps an organization to improve its efficiency. The scholar adds that a continued review process for the organizing activities can help them determine the level of inefficiency of production processes, labour and material allocation. Suárez-Barraza et al. (2020) noted that Kaizen costing brings improvement to the performance of organisations by getting employees involved and keeping a constant eye on operational activities. They said that employees are pivotal to spotting an inefficiency in operations and recommending ways to save money.

Further, Modarress, Ansari and Lockwood (2021) highlighted that the Kaizen costing helps in controlling cost effectively by regularly decreasing operational inefficiencies and development

of organizational processes. Kaizen costing will also assist the sustainability of the organization in the long run as it will lead to the efficient use of resources and continuous operational improvement.

The theory was therefore applicable for this study as it provided framework in the effective use of variance analysis as a cost control tool in KW Blasting when there is an intent to continuously improve and monitor operational activities. The theory supports the belief that continuous identification and correction of inefficiencies is a factor in the improved material, labour, overheads control performance.

2.7 Empirical Literature Review

2.7.1 Adusei and Owusu (2024): Variance Analysis and Cost Management Performance in Construction Firms in Ghana

Adusei and Owusu studied the effectiveness of variance analysis in enhancing the cost control performance of the construction organisations in Ghana. The study used quantitative research design while the respondents were finance managers, project supervisors and accountants of selected construction companies. SPSS software was used for data analysis and regression analysis was used.

2.7.2 Ndlovu and Mhlanga (2023): Cost Control Practices in Zimbabwean Construction Companies

Ndlovu and Mhlanga researched cost control practices in construction companies in Zimbabwe. The aim of the study was to assess the performance of management accounting techniques for the control project cost and enhance operational efficiency in the construction industry. Research design used for the study was descriptive survey and questionnaire was used to gather data from the project managers, accountants and the procurement officers and site supervisors from the selected construction firms. The researchers suggested that construction companies' accounting systems should be computerized, the communication system within the companies needs to be better developed and that the budget needs to be consistently reviewed to enhance the effectiveness of cost control systems (Sanakal, 2021).

2.7.3 Okoye et al. (2022): Variance Analysis and Organisational Performance in Nigeria

Okoye et al. examined the impact of variance analysis on the performance of organizations in manufacturing companies in Nigeria. This study aimed to establish if variance analysis aids in

good cost control and increased profitability in an organization. The current study involved correlational research which used structured questionnaires and company financial documents as methods to gather quantitative data from finance managers, accountants and departmental supervisors.

The study adopted the method of analysis of data by using SPSS and regression analysis and ANOVA to determine the relationship between variance analysis and organisational performance.

2.7.4 Kariuki (2022): Challenges Affecting Cost Control Systems in Construction Projects

Kariuki analysed challenges that limit the implementation of variance analysis in the construction projects within East Africa. The study targeted material, labour and overhead costs which are significant parts of project cost in the application of cost control systems by construction companies while executing projects. The descriptive research design was used and structured questionnaires were used to collect the data from project managers, accountants and the site supervisors

2.8 Research Gap

The reviewed empirical studies established that variance analysis contributes significantly to cost control, operational efficiency and profitability across different industries. However, most studies focused on manufacturing firms and large corporations outside Zimbabwe, with limited attention given to construction companies operating under Zimbabwe's economic environment. In addition, few studies specifically examined the effectiveness of variance analysis in controlling material, labour and overhead cost deviations within construction firms in Bindura. Therefore, this study seeks to fill this gap by evaluating the effectiveness of variance analysis as a cost control tool using KW Blasting as a case study.

2.9 Summary

This chapter provides conceptual frameworks and theories that can be used for cost control and performance measurement. The gap analysis which finishes the chapter illustrates how this study varies from previous research. The research methodologies will be discussed in the following chapter.

CHAPTER III

METHODOLOGY

3.0 Introduction

In this research, the researcher used a quantitative approach for collecting and analyzing quantitative data to obtain the relationship between the variance analysis and the performance of cost control.

3.1 Research Approach

The research method used in the research is quantitative research. In quantitative research, numbers and statistics relating variables with research questions are used. Chukwuma-Eke et al (2022) stated that according to quantitative research, the researcher can objectively measure variables and analyse them with a systematic approach. Hair et al (2024) also suggest that quantitative methods can be used when a regression or correlation analysis is used or an analysis of variance is involved.

The researcher was able to use structured questionnaires to collect measurable data from the respondents using this approach. Another improvement in objectivity was the quantitative approach which involved all the respondents being asked the same questions in a structured Likert scale. According to Bell et al. (2024), quantitative research can be used to ensure consistency and eliminate researcher bias in data collection and analysis activities.

3.2 Research Design

The study adopted a quantitative approach because it allowed for obtaining numerical data regarding the employees' views on the effectiveness of variance analysis as a cost control tool. A descriptive research design which is a non-experimental type of research was adopted to describe the employees' perception on the effectiveness of variance analysis and cost control in KW Blasting Company. The second method of design was also an explanatory research design which was used to explore the hypothesized relationship between employees' perceptions of variance analysis and employees' perceptions of cost control effectiveness. The required research designs for the present study were appropriate since they made the study of the objectives possible in the form of describing employees' perceptions and examining the relationship between the study variables using statistical analysis.

3.3 Population

A population is the full set of people or things in a particular study. According to Ali et al., (2023), population "is defined as the totality of individuals in a particular group or units that have certain characteristics within the research problem under study. Selected employees consisted of accountants, finance officers, project managers and site supervisors and they were 30 employees working in the different areas of direct involvement in budgeting, costing, financial reporting, procurement, project management and operational activities were the target population. These employees were selected since their work responsibilities involve them in or relate with the variance analysis and cost control process, thus enabling them to express value judgements regarding variance analysis effectiveness as an aid to cost containment.

3.4 Samples and Sampling Technique

The population included 30 employees from KW Blasting Company who had direct involvement in cost control, budget, project management and financial decisions. All 30 individuals of the target population were selected for the study because the population was relatively small and manageable. It was deemed to be a suitable approach to use a census as it would enable data to be collected from every member of the population and sampling error would be eliminated, which would mean the results would signify the views of all the relevant employees in the organisation. A census also made the results of the study more reliable as all the target population had a chance to participate in the study.

3.6 Data Collection Methods/Research Instruments

The researcher obtained information from his desired community through the primary data obtained according to Sukmawati (2023) the research used instruments as the way to get the information to be obtained by the researcher from his target community. The researcher collected information about the research problem using questionnaires. The overall data collection tool employed in this study was structured questionnaires. The questions in the questionnaire were closed-ended and used the Likert scale of strongly disagree to strongly agree. The format was conducive to quantify and analyse responses statistically. The questionnaire was segmented into parts which included application of variance analysis, effectiveness of variance analysis, cost control aspects and challenges in implementation of variance analysis. Creswell and Creswell (2022) state that quantitative research structured

questionnaires are applicable since they are consistent and reliable in the process of gathering data.

3.7 Sources of Data

Primary sources as well as secondary data sources were used in the sources

3.7.1 Primary Data

Primary data are the direct data from the respondents gathered specifically by the researcher for a defined research problem Saunders et al,2023. The employees engaged in financial management, project management and cost control activities were selected as the study respondents and structured questionnaire was used to gather their primary data. The data helped in meeting the research objective because it helped in giving quantitative answers regarding the use of variance analysis and its contribution to cost control. Data collected was analysed in SPSS to present statistical results.

3.7.2 Secondary Data

Secondary Data are the data which are collected from the books, articles, reports, electronic data base etc. existing in library. Bell et al., 2024, for theoretical background to help in the literature review and to compare the study findings with research that has been done, secondary data from academic publications based on variance analysis and cost control were used in this study

3.8 Questionnaires

Structured questionnaires were used for the primary data collection tool in the study. A questionnaire is a research tool consisting of a series of questions which are carefully prepared to enable data to be collected from respondents. Taherdoost (2021) states that questionnaires allow researchers to collect the same type of information from individuals in a consistent way. Likewise, Bhat (2019) says that questionnaire is a tool which is used to get quantitative data and offers responses from the respondents that is based on the set fixed answers.

This study was conducted using questionnaires that were self-administered with the respondents filling out the questionnaires without assistance. The use of self-administered questionnaires brings advantages in that they maximize the confidentiality of data collection and minimize interviewer bias according to Bryman and Bell (2022). Simple and clear

language were used in design of the questionnaire, to enhance understanding of the questions by the respondents. The instrument was closed-ended questions with 'Likert' score ranging from 5 points. It was suitable to use the Likert scale as it allowed respondents to comment on the variance analysis and cost control practices undertaken by KW Blasting Company. The questionnaire was deemed suitable in this study since it facilitated research in gathering quantitative data which could be analyzed statistically using SPSS program and ANOVA Test. Structured questionnaires work for quantitative research as it provides uniformity and consistency of responses as noted by Creswell and Creswell (2022).

3.9 Data validity and reliability

3.9.1 Validity

Validity according to Creswell and Creswell (2022), is a statement that clearly indicates that the data gathered is valid and sufficient to meet the needs of the objectives and research questions of a study. A similar explanation is provided by Taherdoost (2025) who said that the provision of validity refers to the ability of research instruments to gather useful data that is accurate, relevant and appropriate. The data obtained in this research were validated by designing questionnaire items that were directly related to the research purposes regarding variance analysis and cost control performance at KW Blasting Company. The questionnaire was designed to have simple and clear questions to reduce ambiguity and enhance participants' understanding of the questions.

.

3.9.2 Reliability

Reliability is a consistency or stability of a research instrument in providing stable or reliable results. Saunders et al. (2023) define reliability as the consistency the instrument would achieve if it were repeated and used under similar conditions. Likewise, Sanakal (2021) introduces that the reliability is relating to consistency, accuracy and dependability in collected data. The reliability of this study was improved by having structured questionnaires that contained numeric questions with the same multiple choice options. The same questions were asked of all respondents in the order of the research objectives, to make it consistent in the answers given.

3.10 Data Analysis Techniques

In this study, quantitative data obtained from questionnaires were analysed by using Statistical Package for Social Sciences (SPSS) – 2026. The application of SPSS for statistical processing, coding and interpretation was proper because it helped process, code and interpret the numerical data for variance analysis and cost control performance of KW Blasting Company.

Data obtained from the participants were analyzed descriptively using frequencies, percentages, tables and graphs to summarize and present the data. The analysis of variance (ANOVA) and regression analysis were used for inferential statistical techniques, which examined the relationship between variance analysis practices and cost control performance. For quantitative research studies, regression analysis and ANOVA are suitable statistical methods to analyze the relationships between variables (Hair et al., 2024). The collected data were analysed and presented using tables interpretation to gain understanding and clarity of the study results.

3.11 Ethical Considerations

Ethical considerations are guidelines or ideals that help researchers in their research to do it with responsibility, honesty and professionalism. According to Creswell and Creswell (2022), research ethics serve as a safeguard to protect from harm and to promote credibility of research. Likewise, Saunders et al (2023) argues ethical research practices encourage fairness, respect and accountability in the research process. Ethical consideration of standards were noted during the process of the study

3.12 Chapter Summary

The method of this research is explained in this chapter in an effort to discover the effectiveness of variance analysis as a cost control method in KW Blasting Company. The chapter touched on research design, research approach, target population, number of respondents and sampling technique that were employed in the study. It also explained the data collection instruments and procedures which were used to gather relevant information from the respondents. Data collected using structured questionnaires, quantitative research design, were analyzed using statistical techniques. All efforts were made to ensure reliability, validity and ethical standards. The Analysis and Discussion of Results is given in the next chapter.

CHAPTER IV

DATA PRESENTATION, DISCUSSIONS AND ANALYSIS

4.0 Introduction

This chapter summarizes, analyzes and evaluates data received from KW Blasting respondents on the effectiveness of variance analysis as a cost control tool. The analysis is guided by the research aims and hypotheses presented in previous chapters.

4.1 Response Rate

The researcher distributed a total of 30 questionnaires to selected employees at KW Blasting Company. The number of the questionnaire is displayed below:

Table 4.1.1: Questionnaire Response Rate Table

Category	Frequency	Percentage%
Distributed Questionnaires	30	100
Returned Questionnaires	25	83.33
Missing Questionnaires	5	16.67

Source Primary Data (2026)

Interpretation

The table above shows that 30 questionnaires were distributed and 25 were returned. This is very important for the quality of research. The response rate of 83.33% indicates that the data collected is complete, reliable and representative of the selected sample. It eliminates the risk of non-response bias, which occurs when some people do not respond and distort the results. The full participation rate shows a high degree of cooperation and involvement by the employees at KW Blasting. This may be because the research topic is relevant to their work or the researcher has effective data collection procedures.

4.2 Reliability Test

A reliability test was conducted to determine the consistency and dependability of the questionnaire used in the study. The researcher distributed 30 questionnaires to employees at KW Blasting company and 25 questionnaires were successfully returned, representing a response rate of 83.33%, while 5 questionnaires were not returned representing 16.67%. According to Babbie (2020), a response rate above 70% is considered adequate for reliable quantitative research because it improves the credibility and representativeness of the findings. The Statistical Package for Social Sciences (SPSS) was used to test the reliability of the questionnaire through Cronbach's Alpha coefficients. Field (2024) explains that Cronbach's Alpha measures the internal consistency of questionnaire items, while Hair et al. (2024) states that a coefficient of 0.70 and above indicates acceptable reliability. The questionnaire relating to variance analysis practices, cost control performance and implementation challenges produced Cronbach's Alpha values ranging between 0.70 and 0.85. These results confirmed that the research instrument was reliable and capable of producing consistent and dependable results suitable for statistical analysis and interpretation.

4.3 Demographic Information

A researcher must assess demographic data provided by respondents since it can validate and support the information participants provide about the study's objectives. The researcher was interested in the participants' age, gender, education level, employment experience and other demographic information.

4.4 Gender of Respondents

Table 4.4.1 Gender

Gender	Frequency	Percentage%	Valid %	Cumulative %
Male	20	80	80	80
Female	5	20	20	100
Total	25	100	100	

Source Primary Data (2026)

Interpretation

The table above shows the gender distribution of respondents who participated in the study. Out of the 25 questionnaires that were successfully returned, 20 respondents were male representing 80%, while 5 respondents were female representing 20% of the total responses.

The findings indicate that the majority of respondents were male. This is consistent with the nature of operations at KW Blasting Company where male employees dominate most operational and technical departments. However, female respondents were also represented in the study, ensuring inclusion of different gender perspectives in the research findings.

4.5 Age of respondents

Table 4.5.1 Age

Age Group	Frequency	Percentage%	Valid %	Cumulative %
25-30 years	4	16.0	16.0	16.0
31-35 years	3	12.0	12.0	28
36-40 years	4	16.0	16.0	44.0
41-45 years	6	24.0	24.0	68.0
Above 45 years	8	32.0	32.0	100.0
Total	25	100.0	100.0	

Source: Primary data (2026)

Interpretation

The table above shows the age distribution of respondents who participated in the study at KW Blasting Company. The findings indicate that the majority of respondents were above 45 years, representing 32%, that is 8 respondents out of the total returned questionnaires. This suggests that most participants were experienced employees with considerable knowledge of variance analysis and cost control practices within the company. Respondents aged 41–45 years constituted 24% that is 6 respondents. Combined with those above 45 years, these groups accounted for 56% of the respondents, indicating that the study largely captured information from mature and experienced employees involved in budgeting, financial management and operational decision-making. The age groups 25–30 years and 36–40 years each represented 16% that is 4 respondents, while respondents aged 31–35 years accounted for 12% that is 3 respondents. Overall, the distribution reflects representation from different age groups, although the study was dominated by older employees whose experience enhanced the reliability and credibility of the research findings.

4.6 Objective one: Determine the extent to which variance analysis is applied within the cost control system at KW Blasting.

4.6.1 Table: Regression Analysis to show the extent to which variance analysis is applied within the cost control systems at KW Blasting

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
pl1	.978[a]	.956	.939	.10793
a. Predictors: (Constant), Variance analysis is applied to overhead costs. The company prepares budgets or standard costs for projects. Variance analysis is applied to material costs. Variance analysis is regularly conducted in the company. Actual costs are compared with budgeted costs frequently. Management reviews variance reports regularly. Variance analysis is applied to labor costs. Variance reports are prepared on time				

Source Primary Data (2026)

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.323	8	.665	57.128	<.001[b]
	Residual	.245	21	.012		
	Total	5.568	29			
a. Dependent Variable: Cost control						
b. Predictors: (Constant) Variance analysis is applied to overhead costs. The company prepares budgets or standard costs for projects. Variance analysis is applied to material costs, Variance analysis is regularly conducted in the company. Actual costs are compared with budgeted costs frequently. Management reviews variance reports regularly. Variance analysis is applied to labor costs, Variance reports are prepared on time						

Source Primary Data 2026

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.274	.317		4.013	<.001
	Variance analysis is regularly conducted in the company	-.333	.128	-.487	-2.614	.016

	The company prepares budgets/standard costs for projects	-.115	.089	-.133	-1.289	.211
	Actual costs are compared with budgeted costs frequently	.077	.077	.150	1.006	.326
	Variance reports are prepared on time	.333	.199	.517	1.676	.109
	Management reviews variance reports regularly	.041	.123	.065	.336	.740
	Variance analysis is applied to material costs	.074	.056	.129	1.319	.201
	Variance analysis is applied to labor costs	.481	.122	.729	3.952	<.001
	Variance analysis is applied to overhead costs	-.005	.075	-.012	-.073	.943
a. Dependent Variable: Cost control						

Source: Primary Data (2026)

Interpretation

- **a.** Dependent Variable: Cost control
- **b.** Predictors (Constant) Variance analysis is applied to overhead costs.

Examining individual predictors:

The findings of the model summary, ANOVA and coefficients show how variance analysis procedures influence cost control at KW Blasting. According to the model summary there is a very significant association between variance analysis practices and cost control as evidenced by the correlation coefficient. The R Square value of 0.956 indicates that the model's independent variables account for about 95.6% of the variation in cost control. Employees indicates that methods such as budgeting, cost comparison and variation analysis are extremely important in establishing cost management effectiveness. The adjusted R-squared (0.939) validates the model's trustworthiness while the low standard error implies great prediction accuracy.

These results are congruent with the findings of Akinlabi et al. (2025), who discovered that cost variance analysis considerably enhances project performance by improving cost monitoring and management. Similarly, Widyarso, Witjaksana and Purnama (2024) claim that the systematic use of variance analysis improves financial discipline in construction projects. The ANOVA results provide more evidence for the model's soundness. The regression model is statistically significant with an F-statistic of 57.128 and a p-value less than 0.001, showing that the independent variables have a substantial combined effect on cost control. This demonstrates that variance analysis procedures, when taken collectively and play an important role in increasing organizational performance. This is consistent with Liu and Hao (2025), who state that integrated cost management systems supported by data-driven analysis considerably improve efficiency in construction projects. The findings further corroborate Teoh and Shanmugam's (2023) contention that variance analysis is still an important technique in current management accounting for controlling operational expenses.
The coefficient results provide further information on each variable's individual influence. Variance analysis of labor expenses significantly improves cost control ($B = 0.481$, $p < 0.001$).

Employees perceived that effective monitoring and control of labor expenses is critical to improving cost control performance. This finding is reinforced by Heydari et al. (2024), who discovered that labor cost efficiency is a significant predictor of overall project cost performance.
However, consistent variance analysis in the company reveals a strong negative association with cost control ($B = -0.333$, $p = 0.016$). Employees noted that this unexpected finding could imply inefficiencies in variance analysis implementation such as delays in remedial action or ineffective follow-up. This finding is consistent with Sanakal, (2021) who suggest that the success of cost control tools is determined not only by their implementation, but also by how the generated information is used for decision-making. Other variables such as budgeting, comparing actual and budgeted costs, preparing variance reports on time, management reviewing reports and analyzing material and overhead costs, were shown to be statistically insignificant at the individual level ($p > 0.05$). However, their aggregate importance in the ANOVA results indicate that they continue to contribute to cost control when paired with other factors.

The findings show that variance analysis procedures have a considerable and favorable impact on cost control especially when applied effectively to labor expenses. While most practices are

implemented within the organization, their effectiveness varies according to how they are carried out and integrated into decision-making processes.
The findings complement previous literature that emphasizes variance analysis as an important tool for cost reduction in building projects. However, the study emphasizes that the success of variance analysis is dependent on proper implementation, timely reporting and management action.

4.7 Objective two: Assess the effectiveness of variance analysis in reducing material, labor and overhead cost deviations.

4.7.1 Table showing evaluation on the effectiveness of variance analysis in reducing material, labor and overhead cost deviations

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.965[a]	.931	.909	.13199
a. Predictors: (Constant), Variance analysis improves resource utilization, Variance analysis improves labor cost control, Variance analysis helps reduce material cost overruns, Variance analysis improves project profitability, Variance analysis improves control of overhead costs, Variance analysis helps detect inefficiencies early, Corrective actions are taken based on variance reports				

Source Primary Data (2026)

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.185	7	.741	42.519	<.001[b]
	Residual	.383	22	.017		
	Total	5.568	29			
a. Dependent Variable: Cost control						

b. Predictors: (Constant), Variance analysis improves resource utilization, Variance analysis improves labor cost control, Variance analysis helps reduce material cost overruns, Variance analysis improves project profitability, Variance analysis improves control of overhead costs, Variance analysis helps detect inefficiencies early, Corrective actions are taken based on variance reports

Source Primary Data (2026)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.178	.149		7.907	<.001
	Variance analysis helps reduce material cost overruns	.232	.077	.357	3.029	.006
	Variance analysis improves labour cost control	-.114	.149	-.152	-.765	.452
	Variance analysis improves control of overhead costs	2.151E-16	.132	.000	.000	1.000
	Variance analysis helps detect inefficiencies early	.150	.108	.232	1.382	.181
	Corrective actions are taken based on variance reports	.201	.181	.255	1.107	.280
	Variance analysis improves project profitability	-.064	.131	-.055	-.486	.632
	Variance analysis improves resource utilization	.250	.083	.394	3.015	.006

a. Dependent Variable: Cost control

Source: Primary data (2026)

a. Dependent Variable: Cost control

b. Predictors: (Constant), Variance analysis improves resource utilization

Interpretation of individual predictors:

The model description, ANOVA and coefficient results provide full evidence of variance analysis' efficiency in increasing cost management at KW Blasting. According to the model summary, there is a substantial positive link between variance analysis effectiveness and cost control (R = 0.965). This shows that advances in variance analysis procedures are strongly linked to improved cost management performance. The R Square value of 0.931 indicates that the independent variables which comprises of resource utilization, labor cost control, inefficiency detection and remedial actions account for roughly 93.1% of the variation in cost control. The Adjusted R Square (0.909) demonstrates that the model is still highly dependable even after accounting for the number of predictors. The estimate's relatively low standard error (0.13199) suggests that the model is reasonably accurate at predicting cost management results. These findings are congruent with those of Akinlabi et al. (2025), who discovered that effective variance analysis considerably enhances project performance by increasing cost efficiency and minimizing waste. Similarly, Teoh Choon Hung and Jaya Kumar Shanmugam, (2023) argue that data-driven cost control methods help to increase organizational performance.

The results from the ANOVA (analysis of variance) testing are that the regression is statistically significant with an F-statistic of 42.519 with a p-value of less than 0.001. Rising to this, we can conclude that there are factors which can influence cost control if combined independently. The regression total of the squares (5.185) is far greater than the residual sum of squares (0.383) and so the model accounts for a substantial proportion of the variation in cost control. This illustrates how effective variance analysis procedures have a great influence on the cost control results. The results are consistent with that of Teoh and Shanmugam's (2023) assertion that adding variance analysis into the decision-making procedures enhances the performance of organizations. Moreover, Kim and Lee (2021) confirm that variance-based monitoring systems can significantly increase cost management efficiency. Coefficients Table shows the respective effect of each effectiveness factor on cost control. Statistically significant constant (B = 1.178) indicates the value at which the intensity of controlling costs is minimal. The positive and significant effect of variance analysis is having a reduction in material cost overruns (B = 0.232, p = 0.006). Employees suggests that good monitoring of material costs considerably improves cost control. This finding is corroborated by Akinlabi et al. (2025) who show that controlling

material cost is a key factor in project success. The effect of variance analysis on the magnitude of resource utilization is also positive and significant (B = 0.250, p = 0.006), meaning that successful resource utilization is leading to good cost control performance. This aligns with Liu and Hao (2025), who stress the importance of optimizing resources for cost-effective operations. The following variables were not found to be statistically significant (p>0.05) and are not included.

- Labor cost control (p = 0.452).
- Overhead Cost Control (p = 1.000)
- Detecting inefficiencies (p = 0.181).

Further action in response to reports p = 0.280).

- Project profitability (p = 0.632).

The study results indicate that variance analysis is useful for good cost control gains other cost control techniques must be implemented well to ensure the most successful control. Employees perceived that the need for better implementation of other control techniques is highlighted as it appears that the envelope in terms of specific aspects such as material cost control and resource utilization is not forthcoming.

4.8 Objective Three: Identify the issues and problems with operating and organizational practices that prevent effective variance analysis in the company

4.8.1Table Identification of operational and organizational challenges affecting the effective implementation of variance analysis within the company

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.968[a]	.938	.925	.14109
a. Predictors: (Constant), Variance analysis supports decision-making. Variance analysis contributes to overall cost control. Projects are completed within budget. Better variance analysis leads to improved financial performance. There is strong cost control in the company				

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.220	5	1.444	72.541	<.001[b]
	Residual	.478	24	.020		
	Total	7.698	29			

a. Dependent Variable: Effectiveness

b. Predictors: (Constant), Variance analysis supports decision-making. Variance analysis contributes to overall cost control. Projects are completed within budget. Better variance analysis leads to improved financial performance. There is strong cost control in the company

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.205	.395		.520	.608
	There is strong cost control in the company	.378	.201	.487	1.874	.073
	Projects are completed within budget	.393	.082	.593	4.798	<.001
	Variance analysis contributes to	.091	.145	.120	.627	.537

	overall cost control					
	Better variance analysis leads to improved financial performance	-.068	.138	-.107	-.489	.629
	Variance analysis supports decision-making	.045	.059	.075	.774	.447
a. Dependent Variable: Effectiveness						

Source: Primary Data (2026)

- **a.** Dependent Variable: Effectiveness
- **b.** Predictors: (Constant), Variance analysis supports decision-making.

Interpretation of Individual Predictors

The model summary reveals a robust association (R = 0.968) and a high R Square (0.938), implying that variance analysis-related factors account for a significant percentage of organizational success. A high R^2 may indicate that the system is overly reliant on a few key factors leading to ineffective performance of other components. The Adjusted R Square (0.925) confirms model reliability but does not guarantee that all variance analysis components are equally effective. Employees reported that while variance analysis is used at KW Blasting, its application may not be balanced across all areas. This is consistent with Abushanab et al. (2025), who suggest that high statistical connections do not necessarily imply effective implementation particularly when organizational processes are unequal.

The ANOVA findings demonstrate a statistically significant model ($F = 72.541$, $p < 0.001$), indicating that the variables jointly influence effectiveness. However, statistical significance does not equal practical efficiency. The substantial difference between regression (7.220) and

residual (0.478) shows strong explanatory power, but it could also indicate that essential factors dominate while others contribute insignificantly. This confirms Saunders et al. (2023), who argue that statistically significant models may nevertheless conceal underlying inefficiencies in individual variables.

The coefficients provide vital insight into where the issues are. Project completion under budget remains robust and significant (B = 0.393, $p < 0.001$). Variance analysis supports decision-making (B = 0.045, p = 0.447, not significant). Employees show that variance reports are not used efficiently in managerial decisions. Variance analysis does not significantly affect total cost control (p = 0.537). This suggests a divergence between analysis and control actions. Improved variance analysis does not result in improved financial performance (negative coefficient, p = 0.629), indicating a lack of impact. The company has strong cost control (p = 0.073 marginal). However, cost control may not be based on variance analysis. This finding is strongly consistent with Abushanab et al. (2025), who claim that the success of cost control tools is determined by how well managers use the information rather than whether the tools exist. Similarly, Teoh and Shanmugam (2023) point out that classical variance analysis frequently fails when used as a reporting tool rather than a decision-making tool.

Liu and Hao (2025) emphasize the importance of integrating current cost control systems with real-time decision-making processes in order to increase performance. The findings also confirm Widyarso, Witjaksana and Purnama's (2024) finding that variance analysis improves outcomes only when remedial actions are taken on time. The findings show that while variance analysis is used at KW Blasting, its usefulness is restricted due to poor integration into decision-making and financial performance procedures. Cost control appears to be accomplished mostly by budget discipline rather than a fully functional variance analysis system.

The study suggests that the primary difficulty is not a lack of variance analysis but rather an inadequate use of variance information emphasizing the need to strengthen its role in decision-making, financial performance improvement and strategic cost management.

4.9 Summary

This chapter provides a full review of the research findings, including summary data, interpretation and analysis based on the study's objectives. The findings were examined and summarized using regression analysis. The findings were also reported in the chapter through tables. The following chapter will focus on summarizing the results, drawing conclusions and giving recommendations considering the study's findings.

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter summarizes the key findings of the study, conclusions based on the research results, recommendations for KW Blasting Company and suggestions for future research. The study aimed to examine the effectiveness of the variance analysis as a cost control measure in KW Blasting Company. The results are reported based on the purposes of the research.

5.1 Summary of Findings

The purpose of the research at KW Blasting Company was to determine the efficiency of Variance Analysis as a cost control instrument. The employees who were involved in the budgeting and financial management and cost control were asked for the data. The important conclusions are included on the parts of the research that are addressed to each research objective.

5.1.1 Objective One: Identify the level of usage of variance analysis in the cost control system at KW Blasting.

The results indicated that variance analysis is quite used in company's cost control system. The regression results indicated that the variance analysis practices had a good relationship with the cost control performance. The model accounted for 95.6% of the cost control performance variance ($R^2 = 0.956$) which shows variance analysis practices are an important role in project cost management. The study found that there is regular preparation of budget and standard cost, actual cost is compared to budgeted cost, there is giving of variance reports and variance analysis on material, labour and overhead. Labour cost variance analysis was identified as the factor that had the most positive impact on cost control performance. The results indicate that variance analysis is one of important aspects of the financial planning and project cost management in the KW Blasting Company.

5.1.2 Objective Two: Evaluate variance analysis's role in minimizing cost deviation for material, labour and overhead.

The results showed that, variance analysis is a good tool to minimize the cost deviations inside the organization. The regression explained 93.1% of variance in the effectiveness of cost control in the regression model ($R^2 = 0.931$) therefore, the relationship between variance

analysis effectiveness and cost management is found to be reliable. The material cost variance analysis was seen to be a significant reduction of material cost overruns and that utilization of resources also had some positive effect in controlling costs. The results showed that variance analysis is a useful tool for management to recognize the inefficiency, to track project spending and take corrective actions before the money is spent if budgets are exceeded.

5.1.3 Objective Three: Identify the issues and problems with operating and organizational practices that prevent effective variance analysis application in the company

While variance analysis is used within the company there are some challenges found as a result of this analysis. The study identified that sometimes information on variance is not available throughout the entire management decision-making process. Use of some variance reports is not conducted effectively in the application of corrective actions.

The results also revealed that delays in variance information response, lack of technology usage and lack of an integrated environment between the variance analysis and strategic decision-making pose challenges to organizations. This reduces the overall effectiveness of the cost control system. The barriers hinder the organization from benefiting from variance analysis as much as possible.

5.2 Conclusions

5.2.1 Objective One

The study concludes that the variance analysis is extensively used as a cost control mechanism in KW Blasting Company. The organization routinely uses variance analysis to track project costs and to assess finance performance and inform financial planning. The results have shown that the variance analysis is very important in achieving the purpose of cost management.

5.2.2 Objective Two

The overall study finds that variance analysis can be used effectively in curbing the deviations in cost in this particular case for material cost and utilization of resources. Applying variance analysis can help management figure out ways to cut down on costs and take actions to correct the cost discrepancy, resulting in better cost performance of the project.

5.2.3 Objective Three

The study finds that variance analysis, although advantageous has various operational and organisational problems that restrict its effectiveness. There is a major problem with the lack

of utilization of the variance information in decision making as a manager. Consequently, there are also sometimes insufficient opportunities to optimize cost control.

5.3 Recommendations

The results of the study and its conclusions suggest the following recommendations:

5.3.1 To enhance Variance Analysis Technique. To improve Variance analysis process.

Variance analysis processes should be improved by using more up-to-date processes and ensuring that corrective action is undertaken immediately if there are large variances.

5.3.2 Strengthen monitoring of labour costs

Management should increase the attention it pays to labour cost variance analysis, as the results of this analysis indicated that the labour cost monitoring has a significant impact on cost control performance.

5.3.3 Develop the ability to improve the costs of materials.

The company should put up a better regulation on the use of material and keep its material variance under constant monitoring to reduce material wastage, theft and over run.

5.3.4 Enhance timeliness of Variance Reports

Variance Reports need to be prepared and reviewed promptly so that management receives accurate information to enable them to make decisions and take corrective action in a timely manner.

5.3.5 Invest in Modern Cost Management Systems

The organization should ensure that it has the latest accounting software and project management cost software, which will be capable of monitoring and reporting on variance in real time.

5.3.6 Improve Management use of variance data

Management should incorporate the variance analysis results to the strategic planning process and operation decision making to make the variance analysis cost control system more effective.

5.3.7 Continuous Employee Training

Training of employees in the responsibility of budgeting/costing and financial management to ensure that they know and understand how to use variance analysis techniques should be ongoing within the company.

5.4 For the researcher, there are several suggestions for further research:

Future study may be done in other construction, mining and contracting firms to compare with the findings of this study and industry to industry. Other cost control methods that can be studied are the standard costing, activity based costing and target costing. Technological innovation, organisational culture and economic conditions can also be explored as impact on variance analysis and cost control systems applications effectiveness as an additional research tool.

5.5 Chapter Summary

This chapter gave the summary of the findings of the study, its conclusions and recommendations. The results showed that variance analysis is important tool for cost control which adds positive contribution in cost control performance in KW Blasting Company. The study also found that variance analysis has positive effects to make the budgeting, monitoring of cost and the project better. Strengthening variance analysis systems, better use of variance information in management and better training of the employees were suggested to obtain good results in cost control.

REFERENCES

Abushanab, M., Al-Haddad, S. and Al-Zoubi, M. (2025) Management accounting tools and organisational performance. Journal of Accounting and Management Studies, 18(2), pp. 45–62.

Adusei, K. and Owusu, P. (2024) 'Variance analysis and cost management performance in construction firms in Ghana', African Journal of Accounting and Finance, 12(1), pp. 44–59.

Akinlabi, O., Adeyemi, T. and Yusuf, M. (2025) 'Cost control practices and project performance in construction organisations', International Journal of Construction Management, 25(3), pp. 201–215.

Akinwale, A. and Bello, M. (2021) 'Effectiveness of standard costing and variance analysis in manufacturing firms', International Journal of Accounting Research, 9(2), pp. 33–48.

Ali, A., Ahmed, S., Khan, M. and Hussain, R. (2023) 'Application of smart techniques, Internet of Things and data mining for resource use efficient and sustainable crop production', Agriculture (Switzerland), 13(2), pp. 1–18.

Atrill, P. and McLaney, E. (2022). Management Accounting for Decision Makers.

Babbie, E. (2020) The Practice of Social Research. 15th edn. Boston: Cengage Learning.

Bell, E., Bryman, A. and Harley, B. (2024) Business Research Methods. 6th edn. Oxford: Oxford University Press.

Bhimani, A., Datar, S., Horngren, C.T. and Rajan, M. (2021). Management and Cost Accounting.

Brewer, P.C. and Garrison, R.H. (2021). Introduction to Managerial Accounting.

Horngren, C.T., Datar, S.M. and Rajan, M.V. (2021). Cost Accounting: A Managerial Emphasis.

Bragg, S.M. (2025) Cost Accounting: A Comprehensive Guide. 4th edn. Centennial: AccountingTools Publishing.

Chukwuma-Eke, E.C., Ogunsola, O.Y. and Isibor, N.J. (2022) ‘Developing an integrated framework for SAP-based cost control and financial reporting in energy companies’, International Journal of Multidisciplinary Research and Growth Evaluation, 3(1), pp. 805–818.

Creswell, J.W. and Creswell, J.D. (2022) Research Design: Qualitative, Quantitative and Mixed Methods Approaches. 6th edn. Thousand Oaks: Sage Publications.

Drury, C. (2021). Management and Cost Accounting.

Hansen, D.R., Mowen, M.M. and Guan, L. (2022). Cost Management: Accounting and Control.

Chigara, B. and Zhou, S. (2024). Publications on construction cost management and project performance.

Chikozho, L. and Mupambireyi, F. (2023). Publications on accounting practices and financial management in Zimbabwe.

Etikan, I. (2023). Publications on research methodology and sampling techniques.

Hilton, R.W. and Platt, D.E. (2020). Managerial Accounting: Creating Value in a Dynamic Business Environment.

Garrison, R.H., Noreen, E.W. and Brewer, P.C. (2021). Managerial Accounting.

Field, A. (2024) Discovering Statistics Using IBM SPSS Statistics. 6th edn. London: Sage Publications.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2024) Multivariate Data Analysis. 9th edn. Harlow: Pearson Education.

Holtom, B.C., Mitchell, T.R. and Lee, T.W. (2022) ‘Increasing response rates in organisational research’, Human Resource Management Review, 32(1), pp. 1–15.

Kariuki, P. (2022) ‘Challenges affecting cost control systems in construction projects’, International Journal of Construction Economics, 14(2), pp. 87–101.

Kim, M.S. and Lee, S.S. (2021) ‘The efficiency of large hole boring (MSP) method in the reduction of blast-induced vibration’, Applied Sciences (Switzerland), 11(4), pp. 1–16.

Liu, Y. and Hao, J. (2025) ‘Integrated cost management systems and organisational performance’, Journal of Financial Management and Analysis, 21(3), pp. 55–72.

Ma, C., Zhang, H., Liu, X. and Wang, Y. (2025) ‘Radar monitoring and numerical simulation reveal the impact of underground blasting disturbance on slope stability’, Remote Sensing, 17(15), pp. 1–22.

Menéndez, A., Rodríguez, P. and García, J. (2025) ‘Construction cost management and project performance’, International Journal of Project Management, 43(2), pp. 120–135.

Moyo, T. and Chigara, B. (2022) ‘Cost management challenges in Zimbabwean construction projects’, Zimbabwe Journal of Engineering and Construction, 10(2), pp. 44–58.

Moyo, T. and Dube, S. (2021) ‘Cost control mechanisms and project performance in Zimbabwe’, Journal of African Business Studies, 8(3), pp. 90–104.

Mwangi, J. and Muturi, W. (2023) ‘Variance analysis and its effect on the performance of manufacturing firms in Kenya’, International Journal of Finance and Accounting, 11(2), pp. 78–92.

Maher, M.W., Stickney, C.P. and Weil, R.L. (2021). Managerial Accounting: An Introduction to Concepts, Methods and Uses.

Moyo, T. and Ncube, M. (2024). Publications on financial management and accounting practices in Zimbabwe.

Muchengeti, T. and Sibanda, P. (2023). Publications on accounting practices and organisational performance.

Monden, Y. (2001). Toyota Production System: An Integrated Approach to Just-In-Time.

Modarress, B., Ansari, A. and Lockwood, D. (2021). Publications on cost management and control systems.

Rajasekar, J., et al. (2021). Publications on management accounting systems and cost control practices.

Ndlovu, P. and Moyo, T. (2025). Publications on accounting practices and business performance.

Needles, B.E. and Powers, M. (2021). Principles of Accounting.

Ndlovu, M. and Mhlanga, T. (2023) ‘Cost control practices in Zimbabwean construction companies’, Zimbabwe Journal of Commerce and Management, 15(1), pp. 33–49.

Nwani, S., Chukwu, E. and Okafor, C. (2023) ‘Real-time financial variance analysis models for procurement and material cost monitoring’, Gyanshauryam International Scientific Refereed Research Journal, 6(5), pp. 45–58.

Okoye, E., Nwankwo, C. and Udeh, F. (2022) ‘Variance analysis and organisational performance in Nigeria’, Nigerian Journal of Management Sciences, 18(2), pp. 110–124.

Ozyurt, M.C. and Sertabipoglu, Z. (2025) ‘A fragmentation-centric framework for impact hammer selection in immediate-collapse-prone tunnelling: Integrating mucking efficiency into cycle-time optimization’, Applied Sciences (Switzerland), 15(20), pp. 1–20.

Princewill, A., Johnson, M. and Peters, K. (2025) ‘Standard costing and variance analysis as tools for cost control’, International Journal of Accounting and Finance, 14(1), pp. 23–39.

Sanakal, A.P. (2021) The Future of Management Accounting: AI-Enhanced Cost Control and Performance Management. New York: Routledge.

Saunders, M., Lewis, P. and Thornhill, A. (2023) Research Methods for Business Students. 9th edn. Harlow: Pearson Education.

Seal, W., Garrison, R.H. and Noreen, E.W. (2021). Management Accounting.

Otley, D. and Emmanuel, C. (2020). Accounting for Management Control.

Suárez-Barraza, M.F., Smith, T. and Dahlgaard-Park, S.M. (2020). Publications on process improvement, cost management and continuous improvement.

Taherdoost, H. (2025) ‘Validity and reliability of research instruments in social science studies’, International Journal of Academic Research in Management, 14(1), pp. 1–12.

Teoh Choon Hung and Jaya Kumar Shanmugam (2023) ‘The relevance of standard costing and variance analysis in global industries today’, East Asian Journal of Multidisciplinary Research, 2(2), pp. 525–542.

Widyarso, A., Witjaksana, B. and Purnama, R. (2024) ‘Cost variance analysis and project performance in construction management’, Journal of Project Control and Engineering, 16(2), pp. 67–81.

Appendix 1: Letter of Approval



APPENDIX 2: QUESTIONNAIRE

Title:

Effectiveness of Variance Analysis as a Cost Control Tool in the Construction Industry: A Case of KW Blasting Company

Kindly respond to all questions honestly by placing a tick (✓) in the option that best reflects your answer.

All information provided will be kept strictly confidential and will only be used for academic purposes. Respondents are not required to disclose their names.

SECTION A: GENERAL INFORMATION

(Tick where appropriate)

1. Gender

   ☐ Male ☐ Female

2. AgeGroup

   ☐ 20–29 ☐ 30–39 ☐ 40–49 ☐ 50+

3. Position in the Company

   ☐ Finance Manager

   ☐ Accountant

   ☐ Project Manager

   ☐ Site Supervisor

   ☐ Other (Specify): _____

4. Years of Experience

   ☐ Less than 2 years

   ☐ 2–5 years

   ☐ 6–10 years

   ☐ Above 10 years

SECTION B: APPLICATION OF VARIANCE ANALYSIS

(Objective 1)

Scale:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Statement	**1**	**2**	**3**	**4**	**5**
Variance analysis is regularly conducted in the company	☐	☐	☐	☐	☐
The company prepares budgets/standard costs for projects	☐	☐	☐	☐	☐
Actual costs are compared with budgeted costs frequently	☐	☐	☐	☐	☐
Variance reports are prepared on time	☐	☐	☐	☐	☐
Management reviews variance reports regularly	☐	☐	☐	☐	☐
Variance analysis is applied to material costs	☐	☐	☐	☐	☐
Variance analysis is applied to labour costs	☐	☐	☐	☐	☐
Variance analysis is applied to overhead costs	☐	☐	☐	☐	☐

SECTION C: EFFECTIVENESS OF VARIANCE ANALYSIS

(Objective 2)

Statement	**1**	**2**	**3**	**4**	**5**
Variance analysis helps reduce material cost overruns	☐	☐	☐	☐	☐
Variance analysis improves labour cost control	☐	☐	☐	☐	☐
Variance analysis improves control of overhead costs	☐	☐	☐	☐	☐

Statement	1	2	3	4	5
Variance analysis helps detect inefficiencies early	☐	☐	☐	☐	☐
Corrective actions are taken based on variance reports	☐	☐	☐	☐	☐
Variance analysis improves project profitability	☐	☐	☐	☐	☐
Variance analysis improves resource utilization	☐	☐	☐	☐	☐

SECTION D: VARIANCE ANALYSIS & COST CONTROL PERFORMANCE

(Objective 3)

Statement	1	2	3	4	5
There is strong cost control in the company	☐	☐	☐	☐	☐
Projects are completed within budget	☐	☐	☐	☐	☐
Variance analysis contributes to overall cost control	☐	☐	☐	☐	☐
Better variance analysis leads to improved financial performance	☐	☐	☐	☐	☐
Variance analysis supports decision-making	☐	☐	☐	☐	☐

SECTION E: CHALLENGES IN IMPLEMENTATION

(Objective 4)

Statement	1	2	3	4	5
Lack of accurate data affects variance analysis	☐	☐	☐	☐	☐
Variance reports are not prepared on time	☐	☐	☐	☐	☐
There is lack of skilled personnel	☐	☐	☐	☐	☐

Statement	1	2	3	4	5
Economic instability affects cost control	☐	☐	☐	☐	☐
Management does not act on variances quickly	☐	☐	☐	☐	☐
Budgeting systems are weak or unreliable	☐	☐	☐	☐	☐
There is resistance to using variance analysis	☐	☐	☐	☐	☐

SECTION F: GENERAL COMMENTS (OPTIONAL)

1. What improvements can be made to enhance variance analysis in the company?

---

2. What are the major causes of cost overruns in your projects?

---

3. Any additional comments: