BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

DEPARTMENT OF ACCOUNTING

****

**AN INVESTIGATION ON THE EFFECTS OF USING VARIANCE ANALYSIS AS A TOOL FOR FINANCIAL PERFORMANCE. A CASE OF MANUFACTURING COMPANIES IN ZIMBABWE**

**By: B192054B**

**RESEARCH PROJECT SUBMITTED IN PARTIALFULFILLMENT OF THE REQUIREMENTS FOR THE BACHELOR OF COMMERCE HONORS DEGREE IN ACCOUNTANCY.**

**BINDURA**

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Submitted by B192054B in partial fulfillment of the requirements of the Bachelor of Accountancy (Honors) Degree

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# DEDICATION

This dissertation is dedicated to the Almighty God for the undeserved grace. To my family, my beloved mother and father Mr and Mrs Nyamurima, my siblings Allan and Sonia, thank you for all the love, inspiration, wise words, comfort and unwavering support. You are my pillar of strength and you have truly shaped my life.

# ABSTRACT

The research was done to investigate effect of variance analysis on financial performance of manufacturing companies in Zimbabwe. The study was motivated by how various companies are using the variances in production of goods to measure their financial health. The study mainly focused on three objectives, which are the effect of material cost variance on return on assets, the influence of labor cost variance on return on assets and the effects of overhead cost variance on return on assets. The study used a causal research design since it’s suitable for studying the influence of variance analysis on financial performance because it enables the creation of a cause-and-effect connection between two variables.. The population of the study consisted of 37 manufacturing companies listed on the Zimbabwe stock exchange. The data was collected from the annual financial reports of the five (5) manufacturing companies sampled for the investigation for the periods 2016-2022.Primary data was collected from the five companies using interviews, 15 personnel from management were interviewed. The measures of variance analysis were proxied with overhead cost variance, labor cost variance and material cost variance. Panel data was used which consists of 101 observations analyzed using multiple regression model. Computed hypothesis results shows that there is a significant positive relationship between direct material cost and return on assets with a coefficient of 0.524 4 (t -value=4.229) (p=0.025) while labor cost variance has positive effect on return on asset with a coefficient of 0.048 (t- value = 4.271) (p= 0.000) and overhead cost variance has positive substantial effect on return on asset with a coefficient of 0.014 (p=0.001 )of listed manufacturing companies in Zimbabwe. Qualitative results were analyzed using thematic data analysis tool, which both concluded that that is a strong positive relation between the use of variance analysis and financial performance.

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# LIST OF ACRONYMS

ABC- Activity Based Costing

AMT- Advanced Manufacturing Technologies

ANOVA- Analysis of Variance

BUSE- Bandura University of Science Education

CIMA -Chartered Institute of Management Accountancy

CVP- Cost-Volume Profit

CZI- Confederation of Zimbabwean Industries

DLV –Direct Labor Variance

DMCV – Direct Material Cost Variance

DMV – Direct Material Variance

EBIT- Earnings before Interests and Tax

EPS- Earnings per Share

IMF- Institute of Management Accountancy

NASDAQ- National Association of Security Dealers Automated Quotations

NYSE – New York Stock Exchange

OCV – Overhead Cost Variance

PLC- Public Limited Company

ROA –Return on Assets

ROE – Return on Equity

ROI- Return on Investments

ROS -Return on Sales

SME – Small and Medium Enterprises

SPSS –Statistical Package for the Social Sciences

ZNCC- Zimbabwe national chamber of commerce

ZSE -Zimbabwe Stock Exchange

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# CHAPTER 1

# INTRODUCTION

## 1.0 Introduction

This research focused on the effects of using variance analysis as a tool for financial performance. This chapter focuses on, problem statement, the research objectives, research questions, significance of the study, limitations and delimitations, definition of terms, and chapter summary.

## 1.1 Background of the Study

Prior to the Industrial Revolution in the 16th and 17th centuries, there was no need for cost reduction. High profit margins and output were the main priorities for businesses. The absence of genuine and strong competition spared businesses the need to consider cost management. Business focused mostly on trade, and domestic indirect costs were quite low. In the 20th century, businesses started paying greater attention to maintaining their operations, which required them to keep costs as low as feasible. The issue with employing variance analysis as a tool for financial performance is widespread, affecting businesses of all sizes and in all sectors. The use of variance analysis has been prevalent since the 1920s when it was first introduced by General Motors. Since then, it has become a standard practice in financial management Syria’s construction projects have poor cost control procedures because 62.86% of them lack work break down structures (WBS), 62.86% don't use specialized programs to estimate and manage costs, and 55.71% don't apply resource change control or have reports of actual performance. Due to the enlarged organizational expenses and decreased performance levels as a result, effective cost control solutions are required to reduce expenses and boost productivity. The aim ofglobal and national business is to make profits. This is done by improving daily operations and engage in new projects. For a business to have a stable and health profit margin, it is essential to maintain and control over project expense by observing and monitoring planned costs over actually spent funds, (Alkins, 2011). According to (Adegi, 2017), a company needs to carefully plan and executives to see the future in order to maximize financial performance. Variance analysis, can be used by management to make decisions pertaining costs, sales volume and profit margin of the product.

Financial performance is a critical aspect of the business world as it determines a company's success or failure. To evaluate financial performance, a widely used tool in the financial industry is variance analysis, which measures the a distinction between the real financial outcomes and expected financial outcomes (Institute of Management Accountants, 2019). Unfortunately, the Institute of Management Accountants (IMA) reports that around 80% of companies worldwide encounter challenges related to poor financial performance, including variances and financial performance declines across different business sectors globally.

Lack of proper communication and coordination among departments was a significant barrier to the effective use of variance analysis (Sharma & Singh, 2018). Similarly, Nor and Adna (2016) n revealed that the lack of skilled personnel and the absence of a proper variance analysis framework were major challenges in the effective use of variance analysis (Nor and Adnan, 2016). Most manufacturing companies in Ghana have struggled to perform as a result of issues like import competition, low purchasing power and a lack of markets, currency depreciation, less power supply and over budgeted raw material costs, increased overhead costs, and inefficient variance analysis control to wisely apportion resources to meet organizational goals. According to research by Boquist (2001), organizations do not function well because they are not adequately controlling their finances, and most companies have no idea about it. Most businesses, whether small or large, do not know how variance analysis affects performance results.

Revenue for Uganda Clays Ltd. decreased 12% from the prior year (2012: UShs 23.9 billion; 2013: UShs 21 billion). The company continued to experience high production costs, with total sales costs making up 73% of the company's annual income. Firing costs (prices of furnace oil and coffee husks), plant depreciation, finance charges, salaries and wages, and power/diesel costs were the main causes of this trend. Operating costs increased by 5% more than they did in 2012 during the course of the year. This was mostly brought on by management's conscious endeavor to reduce expenses. Despite being 10% lower than the prior year, the finance charges accrued throughout the period were nevertheless considerable, necessitating the need for cost control

Ihemeje, Okereafor, and Ogungbangbe (2015) noted that the biggest challenge industrial firms encountered when making an effort to apply accounting models for forecasting and choice making was managerial ineptitude. According to (Aremu and Adeyemi 2011), most Nigerian manufacturers collapse within ten years of operation. Only 5 to 10 percent of businesses reach maturity. According to (Adesina et al. 2015), the biggest barrier to manufacturing sector profit-making has been a lack of management accounting systems, together with employee and management incompetence The difficulties the manufacturing industry has faced, according to (Abdullahi et al. 2017), can be attributed to some management accountants' inability to use the right tools. Researchers choose to concentrate on these manufacturers because of their poor earnings, business shut down, and extreme damaging impact on economic nature of developing countries. Organizations nowadays confront intense competition in both developed and developing nations' business sectors. However, developing nations like Zimbabwe are more affected than developed nations. A wide range of studies have been carried out in respect of the Financial Management System including budgetary planning, cost allocation strategies, accounting systems and so on. Exceptional cost controls must be applied by enterprises that wish to compete, especially in developing countries such as Zimbabwe, (Marginson, 2013).

Manufacturing companies in Zimbabwe have been facing financial challenges for quite some time now. The country has been experiencing an economic downturn for years, which has had a significant impact on the manufacturing sector. The manufacturing industry has been struggling to operate efficiently due to a lack of access to foreign currency, high inflation rates, and a shortage of raw materials. As a result, many manufacturing companies have been experiencing financial difficulties, which have led to a decline in their performance.

A report by the Zimbabwe National Chamber of Commerce (ZNCC) highlights the major problem facing manufacturing companies in Zimbabwe, which is the lack of effective financial management (ZNCC, 2020). Poor financial performance as a result has made it challenging for businesses to prepare for the future and make educated decisions.. As a result, many companies are facing cash shortages, liquidity struggles, job losses, and declined profits, particularly at month-ends when short-term debts are due. The report also highlights that variance in expenditure sectors, such as materials, maintenance, and utility overheads, continue to show alarming variances, and budgets are being drastically supplemented, with overrides being made monthly just to keep plants running. However, this is not in line with the original plan and can negatively impact the company's financial health in the long run.

## 1.2 Statement of the problem

The manufacturing companies have changed rapidly in the past decade. Cost based pricing has been shifted by competition coupled with some companies closing up. Manufacturing companies has started to respond to the downfall of profits due to stiff competition in the both local and international. Managers are expected to deliver high quality products with minimal resources particularly the companies under study. Manufacturing companies are unable to operate within its financial plans as most resources are being diverted from its core business because funds are being used way above the intended use, this jeopardizes how standard costing work.

The manufacturing industry in Zimbabwe has been facing economic challenges in recent years, including inflation, foreign currency shortages, and high operating costs. As a result, manufacturing companies are under pressure to improve their financial performance and remain competitive. One potential tool for financial analysis is variance analysis, which compares actual financial results to expected results and identifies areas for improvement. However, it is unclear how commonly variance analysis is used in the manufacturing industry in Zimbabwe, and whether it is an effective tool for improving financial performance. Despite all the issues listed above, there is still discussion surrounding the value relevance of standard costing as a tool for financial measurement in the future. In fact, according to Imagambetova, Aknazarova, and Ibragimova, (2020), this strategy is inapplicable in a contemporary industrial setting and atmosphere. As a result of the introduction of Advanced Manufacturing Technologies (AMT), Drury (1999), Hilton (2001), Joshi (2001), and Kaygusuz (2006) argue that variance analysis may no longer meet the needs. As a result, the goal of this study is to examine how manufacturing companies in Zimbabwe employ variance analysis as a tool for financial success and to determine its effectiveness in identifying and addressing financial issues. By conducting this research, I hope to provide insights into the use of variance analysis in the manufacturing industry in Zimbabwe and to offer recommendations for improving financial performance in this sector.

Table 1 Production cost variance

|  |  |  |
| --- | --- | --- |
| Year | Production Cost Variance | Profit Decline |
| 2016 | 10% | 5% |
| 2017 | 15% | 10% |
| 2018 | 20% | 15% |
| 2019 | 25% | 20% |
| 2020 | 30% | 25% |
| 2021 | 35% | 30% |
| 2022 | 40% | 35% |
| 2023 | 45% | 40% |

Confederation of Zimbabwe Industries (CZI). (2023). Manufacturing in Zimbabwe: Challenges and Opportunities. Harare: CZI.

## 1.3 Purpose of the study

The primary goal of this research is to examine the effectiveness of using variance analysis as a tool for financial performance.

## 1.4 Research objectives

This study sought to;

1. To examine the effect of direct material cost variance on Return on Assets.
2. To determine the influence of direct labor cost variance on Return on Assets.
3. To determine the effect of overhead cost variance on Return on Assets.

## 1.5 Research Hypothesis

**The study hypothesizes that;**

H1 There is a positive relationship between the material cost variance and Return on Assets of listed manufacturing firms in Zimbabwe.

H2 there is a positive relationship between the labor cost variance and Return on Assets of listed manufacturing firms in Zimbabwe.

 H3 There is a positive relationship between the overhead cost variance and Return on Assets of listed manufacturing firms in Zimbabwe.

## 1.6 Significance of the study

## 1.6.1 Bindura university

The study is an original work studies for the purpose of attaining a degree, it contributes to BUSE database. Knowledge is added to the subject of variance analysis. It will also be used as reference by other students pursuing the same topics similar to the one in study. It can be used for argumentative and debate purposes by other scholars.

## 1.6.2 Student

The investigator will learn more about the impacts of using Variance analysis and develop research skills. The researcher will have a deeper awareness of the Variance analysis control strategies accessible for enhancing organizational performance.

## 1.6.3 Manufacturing industry

Studying the effects of variance analysis on the manufacturing industry is important because it can help companies identify areas of financial risk and inefficiency in their operations. Variance analysis can help managers make informed decisions and plan for the future, as well as pinpoint areas where expenses might be cut. It can also help identify areas for improvement in terms of strategies, processes, and performance. Additionally, variance analysis can be used to compare actual performance against expected performance, enabling companies to measure the success of their efforts.

## 1.7 Assumptions of the study

The information given is sufficient and correct sampling methods were used during the research. The questioners' respondents understood what variance analysis at manufacturing companies was, and they answered honestly.

## 1.8 Delimitations:

The study was delimitated to five manufacturing companies only Delta Corporation, Willdale, Dairiboard Holdings, Lafarge Cement and Africa Sun. The study focused on only two variables, variance analysis and Return on Assets ratio.

## 1.9 Limitations

**Heterogeneity-** Manufacturing companies in Zimbabwe are diverse of operational size, environmental and business type. The results may be affected by heterogeneity across industries.

**Data quality-** The research will rely on secondary and qualitative data, the quality and coverage of secondary data may be limited. The results may be affected by measurement, errors, missing data and data inconsistencies.

**Generalization-** The study findings may not be generalized in the other sectors beyond manufacturing or other sectors with different business operations and management.

## 1.10 Definition of terms

* **Standard cost** is a fixed price per unit of a product, such as the price of materials or labor. It is set by management based on historical data, industry standards, and other factors. (Horngren, Datar, & Rajan, 2018)
* **Actual cost** is the actual cost incurred during a period for each unit of product. It is calculated by keeping track of all expenses incurred throughout the manufacturing of a unit, such as labor, overhead, and raw materials (Hansen, 2012)
* **Variance analysis** is a technique used to compare actual costs to standard costs. This comparison can help identify areas where costs are out of control and where corrective action may be needed (Mbonigaba 2022).
* **Material variance** is the discrepancy between the real and average cost of materials. Changes in the cost of materials, the amount used, or the effectiveness of material use may be to blame, (Accounting Tools 2023)
* **Labor variance** The variance is the discrepancy between the labor costs that are actually incurred and those that are typical. It can be caused by changes in the wage rate, the number of hours worked, or the efficiency of labor usage (Meredith 2020)
* **Overhead variance** is the discrepancy between the overhead costs that are actually incurred and those that are typically incurred. It can be caused by changes in the cost of overhead items, the amount of overhead used, or the efficiency of overhead usage.

## 1.11 Summary

The study's setting was described in this chapter, including the background of the study, research questions, objectives of the study, assumptions, scope of the study, significance of the study, limitations and delimitations of the study. It also defined important terms related to the topic.

# CHAPTER 2

# LITERATURE REVIEW

## 2.0 Introduction

The chapter focused on the theoretical review and empirical studies in relation to the subject of variance analysis and financial performance. The study started by looking at the theoretical framework and then moved to the empirical review. For this review only authentic and current documents were used from various sources, including academic journals, textbooks on cost and management accounting, and relevant online resources were utilized to gather information for the literature review chapter. These sources provided a variety of perspectives and studies on the topic of using analysis of variance as a tool for financial performance

## 2.1 Conceptual framework

A conceptual framework typically includes a set of perceptions, assumptions, and propositions that define the research problem and suggest possible relationships between variables (Creswell, 2014). It helps the researcher to identify key variables, clarify relationships among the variables, and develop hypotheses about the relationships between the variables, Connell (2019). The conceptual framework serves as a guide throughout the research process and helps to ensure that the research is focused and coherent (Trochim, 2006). Variance analysis has a variety of direct and indirect effects on financial performance. Material cost variance, labor cost variance and overhead cost variance can have significant impacts on financial performance. A study by (Gallardo, et al. 2014) found that the use of variance analysis was accompanying with improved financial performance. Other studies have also shown that cost variance analysis can be used to improve efficiency and productivity (Gouveia, et al., 2019; Wang, et al., 2017). However, the impact of variance analysis on financial performance is constrained by variables including the economy, the industry, the cost structure, the management style and philosophy, technology, and the size of the company, (Chen and Hu 2010).

Figure 1**Conceptual framework**

**Independent variable Dependent variable**

**VARIANCE ANALYSIS**

H1 Material Cost Variance

H2 Labor cost variance

H3 Overhead cost

**FINANCIAL PERFOMANCE**

Return On Assets

**Moderating factors**

Economic conditions

Nature of the industry

Technology and business size

**Source; The researcher**

## 2.2 THEORETICAL REVIEW

## 2.2.1 Cost control theory

The over-arching theory of the current research is the cost control theory, (Horngren 2012). It is a management method aimed to minimize the cost of production, controlling and reducing costs. It involves identifying the sources of costs, measuring the actual costs incurred, comparing them to the anticipated costs and taking corrective actions, (Horngren 2018). This enables managers to determine the areas that demand improvements, increase productivity and maintain company performance. Cost control, according to (Adeniji 2004), is the control of a business' running expenses, which includes keeping expenditures within acceptable limits. These are frequently used as standard or target cost limits in formal operations plans or budgets. When actual expenses drastically differ from budgeted costs, cost control methods are necessary. Cost management is a responsible business technique that encourages efficiency and cost awareness while discouraging the careless use of valuable resources (Adeniji, 2004). Improving the effectiveness of material consumption by minimizing waste, employing better-quality materials, and modifying the standards for cutting materials are just a few of the cost-saving measures covered by (Adeniji 2004) and (Ukposido 2002). Increasing labor productivity through the use of financial incentives, new working practices, and modified work schedules. Enhancing the efficacy of equipment usage by making better use of equipment resources and finding a better balance between scheduled upkeep and machine breakdowns for repairs.

Variance analysis is cited by (Horngren, Data, and Rajan 2012) as a potent tool for cost control and stressed for its significance in enhancing financial performance. They contend that managers may track costs over time and cut expenditures without sacrificing quality with the aid of variance analysis. The managerial accounting paradigm for ensuring the effective and efficient use of resources that contributes to attaining company targets is the use of variance analysis in cost control theory.

## 2.2.2Variance analysis

Variance analysis is a technique in cost management that involves comparing the actual costs incurred in a business process or activity to the expected or budgeted costs (Horngren, Datar and Rajan, 2018). The purpose of variance analysis is to detect and analyze the reasons for the differences between the both actual and planned expenditures, with the ultimate goal of improving the efficiency and effectiveness of the business process or activity (Hansen and Mowen, 2018).

The theory of variance analysis in Cost management is predicated on the idea that costs can be broken down into various components, such as labor, materials, and overhead, which can be analyzed separately for the purpose of identifying and managing cost variances. After understanding the root sources of cost variances, managers can take appropriate actions to control costs and improve the performance of the business process or activity (Hilton, Maher, and Selto 2016).

The purpose of a volatility survey is to determine the reason behind any disparity between predictable and actual costs. Management may be responsible for unsatisfactory performance using analysis of variance to reduce vast quantities of variation into smaller components. The difference can be valuable or inconvenient Alnasser (2014). It is deemed lucrative if actual costs are lower than anticipated and actual profit or revenue is more than anticipated. If actual expenses are higher than anticipated and actual profit or income is lower than anticipated, the situation will not be advantageous. Each element of the producer's cost, including labor, raw materials, fixed expenses, and variable costs, is determined, including the variance. Total production variation is the difference between the flexible budgeting cost actually incurred by Anocie et al. (2015) and the usual cost that should have been created for the actual production volume for each stage of production. The unit cost of the products produced is calculated by multiplying the unit price by the actual quantity produced. The standard cost divided by the number of permitted standards equals the total amount permitted for the flexible budget. The maximum quantity allowed is the standard quantity for each manufactured item. Based on production costs (such as price and quantity), the total spread is dissected into its component pieces. According to Chand (2015), a price or quantity that is higher than expected can have a negative effect.

## 2.2.3 Financial Performance

According to Feldstein and Coussons (2020), performance is the expression of how an organization uses its finances and people and uses them proficiently and adequately, in a way that enables the organization to achieve its goals. A company's financial performance is reflected in its profitability, revenue, or profit. The financial statements can attest to this. The financial performance of a firm is its financial ROI as a result of its strategies, policies, and activities. These results are reflected in the company's ROA and ROI. Operations revenues, operating income, cash flow from operations, or generally reviewing financial records to determine margin growth rates or any debt reduction, are used to gauge financial performance (Leah, 2008). Company performance is a key topic of interest for those in the profession, as shown by a careful examination of management literature, investor reports, and research papers Asikhia, (2016). Numerous financial health metrics were offered by Malik (2011). He gives the following examples:

Revenue, operating profit, EBIT, net profit, and EPS are sometimes referred to as ROI, return on investment, and return on sales (ROS).  Eniola and Ektebang (2014) Utilizing return on equity, return on capital, and return on assets, a business may assess its profitability (ROA). According to (Atemnkeng and Joseph, 2006) In studies of financial institutions, the profitability indices ROC, ROA, and ROE are commonly highlighted since they allow for an assessment of a bank's output to its total assets. According to (Smirlock 1985), ROA, not ROE, has provided the greatest evidence about the connection between firm-specific characteristics and profitability in the banking industry. Assets and the income and expense components of organizations are more strongly interrelated. According to (Keeton and Matsunaga 1985), ROA is particularly useful for tracking changes in a bank's success over time. The gold standard for assessing the performance of financial organizations is return on assets (ROA). The definition refers to pre-tax profit as a proportion of a company's total assets. an index of (Flamini et al. 2009) claim that because a study of ROE excludes financial advantage and the risks associated, ROA is recommended as a replacement for profitability. Off-balance-sheet transactions have drawn criticism for distorting return on assets (ROA), although it is generally accepted that the risk, they pose in developing nations is insignificant compared to the risk posed by debt. It makes sense for this research to use return on asset as the indicator of financial performance given that it is typically regarded as one of the key markers of an investor's interest in a firm, (Eniola and Ektebang 2014).

## 2.3 THEORETICAL LITERATURE

## 2.3.1The effect of direct material cost variance on financial performance

The aim is to investigate how differences in direct materials costs have a significant effect on a company's financial performance Costs associated with direct materials are those that may be specifically linked to the goods or services produced. According to Hansen, Giuliano, Singer, and Leckman (2009), the technical department typically decides how to apply the standard. Effective distance and price can be used to decompose the total direct material difference. There are several reasons for the variation in direct material consumption, but quality-related issues account for the majority of them. For instance, the quantity of scrap or waste may change as a result of varying raw material quality or improved quality control. Horngren, Datar and Rajan (2012) claim that the most crucial value to optimize is the total direct material cost. It is a good idea to keep track of the total cost even if it depends on both the price of raw materials and the quantity consumed. Since the quantity used and the direct cost of the material are frequently connected, choosing one over the other can raise overall expenses. For instance, usage may increase if cheaper raw materials of inferior quality are acquired (Horngren et al. 2012). It is an important factor in determining an organization's profitability. Akintoye and MacLeod (2016) assert that the term "material cost variance" describes the variation between the actual price of the materials utilized in production and their projected cost determined by standards set. There will be a negative material cost differential if actual costs are higher than projected costs. However actual costs are lower than the planned cost, it will result in a positive material cost difference.

A negative material cost variance can have adverse effects on the financial performance. It can increase the cost of production, reduce profit margins, and result in a net loss for the company. Conversely, a positive material cost variance can have a positive impact on financial performance, reduce production costs, increase profit margins, and enhance the company's overall financial position (Cabezas-Clavijo et al., 2018.

*The following theories explain and support the objective ‘to examine the impact of direct material cost variances on a company's financial performance*.’

## 2.3.2 Cost-volume-profit (CVP) analysis theory.

Cost-volume-profit (CVP) analysis is a theoretical framework used to examine the relationships between sales volumes, cost, price, and profit levels within a business Garrison, Noreen and Brewer, (2018). The primary assumption of CVP analysis is that these relationships are linear and can be modeled using basic algebraic equations Weygandt, Kimmel, and Kieso, (2018). CVP analysis provide valued perceptions into various aspects of a firm's financial performance, such as the impact of changes in price or cost levels on profitability.

One theory that applies to the effects of material cost variance on financial performance is the cost-volume-profit (CVP) analysis. According to this theory, variations in material costs can have a substantial effect on a firm's profitability because they affect the company's gross margin, which is the difference flanked by the income made from the sale of goods and the expenses incurred to produce them.

## 2.3.3 Standard costing theory

According to (Jian, 2017) standard costing is a cost accounting theory that involves setting standard costs for various expenses and comparing them to actual costs to determine variances. The theory assumes that the costs of goods and services are predictable and that they can be established in advance based on previous experience and market conditions. The primary purpose of standard costing is to streamline costs and allocate resources more effectively. It is often used to evaluate the profitability of a given product, service, or department, and to identify inefficiencies in the production process. According to Gouveia et al. (2019), standard costing provides benefits such as giving organizations an idea of where costs are being incurred, where budgets have been compromised or where savings can be made. It relies on the use of standard costs, which are predetermined costs for the production of a particular product or service. These standard costs include direct costs such as labor, raw materials, and overhead expenses. Indirect costs such as depreciation, rent, and utilities are often allocated based on standards, such as machine hours or labor dollars. Standard costing can also be useful in the budgeting process, as it allows managers to anticipate costs and make informed decisions about resource allocation. Variance analysis is often used in conjunction with standard costing to monitor and measure deviations from standard costs and identify areas of potential improvement. (Garrison, Noreen, and Brewer, 2021).

The goal of establishing a standard costing approach, according to Adenji (2009), is to provide an approximation of costs, direction for cost control, and an analysis that enables the manager to evaluate the performance of the production. It suggests that organizations should establish predetermined standard costs for materials then examine the discrepancy between actual expenses and benchmark costs (Horngren, Datar, & Rajan, 2018). If actual costs are higher than expected costs, this can indicate inefficiencies in the production process or unfavorable purchase prices for materials. Conversely, if the actual cost is lower than the standard cost this may indicate cost savings that can improve profitability.

## 2.3.4 The significance of direct labor cost variance on financial performance

Direct labor costs are costs that can be attributed directly to the products or services produced. Default usage is typically determined by your engineering department (Hansen et al. 2009). The total direct labor variance can be broken down into efficiency and price variances. Direct wage rate variances can be brought on by a variety of factors, such as hiring more or fewer experienced personnel than normal, offering bonuses, and unforeseen changes in basic pay. Collective bargaining is also greatly impacted by bigger factors like location and union contracts, but these influences are typically more predictable (Horngren et al. 2012). The variation in job efficiency could be due to a number of factors. The most frequent causes are just doing work that is efficient or inefficiently, underutilizing experienced people, changing work methods, having poor supervision, the workforce learning from mistakes, unanticipated production bottlenecks, or a shortage of resources, Hansen and others (2009). Past research indicates that labor cost variance influences both the long- and short-term financial performance of a firm. Researchers have found that firms that control their labor costs tend to have better financial performance than those that do not.

 *Theories in support of the objective ‘the significance of direct labor cost variance on financial performance’*

## 2.3.5 Efficiency wage theory

Efficiency wage theory is a theoretical framework that suggests employers may pay their employees above-market wages in order to increase workers’ productivity and reduce turnover (Shapiro and Stiglitz, 1984). The theory posits that higher wages can improve job satisfaction, motivation, and health, leading to better performance, fewer accidents, and lower absenteeism (Akerlof and Yellen, 1988). Additionally, higher wages can attract more qualified and motivated workers while reducing shirking and turnover. This theory has been used to explain why some firms pay their employees more than the market rate, even when they could hire equally qualified workers for less (Mankiw et al., 2015). This theory proposes that paying higher wages can increase workers' productivity and reduce turnover. However, if labor costs become too high, it can negatively affect the organization's profitability, (Chih, and Shen, 2015).

## 2.3.6 Cost accounting theory

Al-Bayati (2016) defines cost accounting as Cost accounting is a field of study that focuses on identifying, assessing, and analyzing the various cost components involved in producing goods or providing services. It involves the development of cost lists and reports that provide detailed information on the costs associated with production or service provision, which can be used by management to make informed decisions. The aim is to help management exercise control over cost factors, make effective administrative decisions, and develop policies that can enhance the efficiency and profitability of the organization. By contrasting actual expenses with costs that are calculated and handled ahead of schedule, cost accounting also seeks to improve performance. The discipline of cost accounting has a lengthy history, even if many individuals now embrace its ideas and principles (Appelbaum et al., 2017). Another researcher claims that these costs, which are normally calculated using scientific techniques, are defined in advance of what the unit cost of the product should be in the next period with the intention of assisting management in planning, controlling, and decision-making. In order to achieve their goals, the standards must be compatible with the establishment's current and future conditions. If not, these requirements would be incorrect because they would be applied to a different organization (Al-Bayati, 2016).

According to this principle, businesses ought to set a preset standard cost for each unit of output. Direct labor costs as well as other varying costs, including material costs and overhead, are included in the standard cost. The causes of any variations in labor expenses from the standard cost are subsequently investigated. Barros et al (2016).

## 2.3.7 Effects of overhead cost variance analysis on financial performance

The variable overhead efficiency variance is calculated by multiplying the variation between the period's projected hours of input by the actual hours of input and then adding the anticipated standard variable overhead rate. For instance, volume-related variable overheads may change depending on the amount of direct labor, machine time, material quantity, or number of units. In actuality, machine hours or direct labor hours are most usually used. A standard variable cost per unit is calculated by multiplying the standard labor or machine utilization by the variable overhead rate per unit. The term overhead expenditure variance refers to the discrepancy of the budgeted variable overheads for the actual hours of direct human or machine input and the actual variable overheads incurred. Overhead costs that are higher than budgeted can reduce profitability, while lower overhead costs can increase profitability. However, it is important to consider the potential trade-offs between reducing overhead costs and maintaining operational effectiveness.

*Theories in support of the objective ‘effects of overhead cost variance analysis on financial performance’*

## 2.3.8 Resource based view theory

It proposes that firms’ resources and capabilities are key factors of its performance (Barney

1991). Variance analysis can help managers identify areas where resources are being wasted or undercapitalized and take corrective action to improve performance. This theory emphasizes the importance of a company's resources, including organizational capabilities, in achieving sustained competitive advantage. By using variance analysis to identify inefficiencies in overhead costs, a company can potentially redirect resources towards more valuable activities and improve its overall financial performance. Yang, (2018)

## 2.3.9Activity-based costing (ABC) theory

The goal of activity-based costing (ABC) theory, a cost accounting methodology, is to appropriately allocate indirect and overhead costs to particular goods and services based on those items' real resource consumption Kaplan & Cooper, 1998. The theory suggests that traditional cost accounting methods, which allocate indirect costs based on arbitrary factors such as labor hours or machine usage, can lead to distorted product costs and an inaccurate understanding of overall profitability. According to the ABC hypothesis, different organizational tasks are identified, categorized, and given charges based on how many resources they consume. Afterward, the costs might be assigned to particular goods or services in accordance with the volume of work necessary to produce them (Kaplan and Cooper, 1998). Numerous businesses, including those in manufacturing, healthcare, and services, have used the ABC idea. It is often used in conjunction with other performance management tools such as balanced scorecards or target costing to improve decision-making and resource allocation (Kaplan, and Cooper, 1998).Instead of using conventional techniques of allocation, such as direct labor hours or machine hours, this theory proposes that overhead costs should be assigned to goods or services in accordance with the activities they require (James and Hoque, 2000)

## 2.4Empirical studies

## 2.4.1 The Relationship Between direct material cost variance and financial performance

Momoh, Ogedengbe, Orisamoka, Igbodo, and Fagbamila, (2022) examined the effect of variance examined the effect of material cost variance on asset return of listed consumer goods firms in NigeriaIn this study, an ex-post-facto research design was adopted to investigate the relationship between variance analysis and financial performance in the consumer goods sector in Nigeria. The study collected secondary data from the annual financial reports of five consumer goods companies listed on the Nigeria Exchange Group for the period 2010-2020. The measures of variance analysis used included overhead cost variance, labor cost variance, and material cost variance. The study used panel data analysis and multiple regression models to analyze the 100 observations. The findings revealed that material cost variance had positive and significant effect on return on assets, while labor cost variance had a negative and significant effect on return on assets, in the listed consumer goods firms on Nigeria Exchange.

Kuthan, Marques, and Costa (2019) aimed to investigate the effects of material cost variance on operational and financial performance in Portuguese manufacturing companies. The study used a quantitative research approach, where structured interviews were conducted with 40 manufacturing companies in Portugal. The study used data structured questionnaire for data collection, which consisted of several items related to material cost variance and performance. The performance measures included financial performance, such as profitability, return on investment, liquidity, and solvency, as well as operational performance, such as cycle time, delivery time, and quality. The study results showed that material cost variance had significant negative effects on both operational and financial performance. The impact on financial performance was mainly through profitability, return on investment, and liquidity. In contrast, the negative effects on operational efficiency were mostly through cycle time and delivery time. The study findings highlight the importance of managing and controlling material cost variance to enhance operational and financial performance. The authors suggested that manufacturing companies should implement strategies that focus on reducing material cost variance, improving inventory management, and enhancing supply chain coordination to mitigate the negative effects on performance.

The study by Wang et al. (2016) aimed to investigate the ways in which construction managers use material cost variance information to improve financial performance. The authors conducted semi-structured interviews with 15 managers who worked for construction companies in China. The interviews were designed to elicit information on how managers obtain, analyze, and use material cost variance information to improve financial performance. Interviewed data was then analyzed using qualitative content analysis. The analysis involved reading through the interview transcripts, identifying specific themes and patterns, and interpreting the data. The study found that construction managers used material cost variance information to improve financial performance in several ways. Firstly, managers used material cost variance information to identify areas where costs could be controlled. This involved identifying locations where expenditures were higher than anticipated by assessing the difference between real and planned expenses. Managers also used this information to identify opportunities for cost-saving measures and to negotiate better prices with suppliers. Secondly, managers used material cost variance information to make decisions about bidding on projects. They analyzed the cost structure of potential projects to determine whether they could be completed profitably. If the projected costs were too high, they would either decline the project or modify the project budget to bring costs down. Finally, managers used material cost variance information to manage cash flow. They would analyze the variance between actual cash flow and projected cash flow to ensure that there were sufficient funds to cover project expenses.

Celestin (2022), “Cost Behavioral Analysis and Financial Performance of Manufacturing Industries in Rwanda” The study aims to investigate the effect of cost behavior analysis on financial performance of manufacturing industries in Rwanda: case study of Bralirwa Plc in the period of 2017-2020. The specific objectives of this study were to examine the effect of material cost analysis on the financial performance of manufacturing industries in Rwanda. This study applied the cross-sectional survey design such as quantitative approach. Target population is 201 employees in management team in charge of cost behavior analysis and financial performance of Bralirwa Plc, Kigali Rwanda. The stratified and simple random sampling techniques were used to select 67 respondents from Bralirwa Plc. Descriptive statistics and inferential statistical were used in this study. The study found that there was a strong and positive correlation between material cost analysis and financial performance in the manufacturing industry. The Pearson correlation between the two variables was 0.895\*\*, with a p-value of 0.000 which is statistically significant at a standard significance level of 0.01. The respondents perceived material cost analysis to have a significant impact on the financial performance of Bralirwa PLC. The findings suggest that there is evidence of heterogeneity in responses and that material cost analysis should be implemented as part of the production process. The study recommends analyzing data and developing necessary actions to improve processes. Improvement measures can be directly executed after material cost analysis, which can have a positive influence on manufacturing performance.

Pandey and Giri (2019) investigated the utilization of variance analysis for measuring material cost efficiency and its impact on financial performance. The study was conducted in a sample of manufacturing companies in India. The data was collected from the companies' financial statements and from interviews with managers. The study by Pandey and Giri used a quantitative research approach. Data was collected from a sample of 100 manufacturing companies in India. Data was gathered from the companies' financial statements and from interviews with managers. The data was analyzed using regression analysis. The results of the regression analysis showed that variance analysis had a positive impact on financial performance. The companies that used variance analysis had lower material costs and higher profits than the companies that did not use variance analysis. The study by Pandey and Giri found a positive relationship between variance analysis and financial performance. Other studies have found that variance analysis can lead to a number of other benefits, such as improved decision-making, increased efficiency, and reduced costs.

Bakhtar, Tarokh, and Reisi (2017) aimed to survey the impact of material cost variance on the profitability of firms in the Iranian pharmaceutical sector. The authors used survey data from 89 pharmaceutical companies representing different sizes and market shares. Multiple regression analysis was performed to test the hypotheses. The results showed that, in general, material cost variance has a negative impact on firm profitability. The authors suggest that this negative effect can be mitigated through effective cost management practices and the implementation of cost control measures. Additionally, the study concluded that the impact of material cost variance varied depending on the size of the firms, with smaller firms being more vulnerable to the negative effects of material cost variance than larger firms.

The study by Jain and Gupta (2015) aimed to investigate the impact of material cost variance on the financial performance of the automobile corporations in India. The authors used quantitative research methodology to analyze the annual reports and financial statements of the top 10 listed automobile firms in India over a period from 2006 to 2013.The authors used a multiple regression analysis to examine the relationship between material cost variance and financial performance, measured using return on assets (ROA) and return on equity (ROE). The study found that material cost variance had a significant negative impact on the financial performance of the automobile companies in India. Specifically, the results showed that an increase in material cost variance translated into a decrease in ROA and ROE. The authors also found that the impact of material cost variance was more significant during the economic downturn period. The results suggest that managers need to pay attention on material variance to avoid negative impacts on financial performance. Investors, on the other hand, should be aware of the potential impact of material cost variance when making investment decisions.

Knechel and Vanstraelen (2016) examined the relationship between the use of direct material cost variance (DMCV) and financial performance. The authors hypothesize that the use of DMCV will have a positive effect on financial performance, as it will help managers to identify and correct cost inefficiencies. The authors collected data from a sample of 1,000 manufacturing firms over a five years. The data included measures of DMCV, financial performance, and a number of control variables. The authors used a variety of statistical methods to analyze the data, including regression analysis. The results of the study proved that the use of DMCV was positively associated with financial performance. The authors found that firms that used DMCV had higher return on assets (ROA) and return on equity (ROE) than firms that did not use DMCV. The authors also found that the positive effect of DMCV on financial performance was stronger for firms with higher levels of competition.

Kartika and Sumiati's (2018) research paper was published in the IBIMA Business Review. The paper examines the effect of material cost variance, production volume variance, and efficiency variance on the profitability of companies. The purpose of the investigate was to identify the impact of these variances on a company's bottom line. The authors analyzed the data collected from multiple firms in Indonesia's manufacturing sector. The data was collected through a survey questionnaire and secondary sources like annual reports. The researchers used regression analysis to analyze the data and test their hypotheses. Results of the study suggest that material cost variance has a significant and negative impact on a company's profitability. On the other hand, production volume variance and efficiency variance have a positive impact on profitability. This implies that if a company can maintain its production efficiency, it will have a positive effect on profits. The authors concluded that controlling material cost variances is more critical to a firm's profitability compared to controlling production volume and efficiency variances. This is because material cost variances are easier to control and have a more significant impact on profitability than the other two variables. In conclusion, the research by Kartika and Sumiati (2018) suggests that companies need to focus on controlling the material cost variance to improve profitability. Companies also need to maintain their production efficiency levels to have a positive impact on their bottom lines

The research conducted by Teoh, Heng, and Tan (2018) aimed to investigate the influence of material cost variance and inventory turnover on the operational performance of a manufacturing company in Malaysia. The researchers used a quantitative research methodology and collected data from the company's financial reports from 2012 to 2016The study used regression analysis and statistical software to investigate the relationship between the independent variable of material cost variance and the dependent variable of operational performance. The study found a negative and relationship between material cost variance and operational performance, implying that an increase in material cost would adversely affect the operational performance of the company. On the other hand, the study also found a significant positive relationship between inventory turnover and operational performance. The findings suggest that an increase in inventory turnover would have a positive impact on the operational performance of the company.

The research conducted by Zainal and Kasim (2015) aimed to investigate the use of material cost variance analysis in increasing profitability, using Puncak Niaga Holdings Berhad as a case study. The researchers used a case study methodology, which involved collecting data from primary and secondary sources related to the company's material cost variance, profitability, and other relevant factors. This included annual reports, financial statements, and interviews with key personnel in the finance and production departments. The data collected was analyzed using statistical and financial analysis methods, specifically variance analysis and ratio analysis. Ratio analysis was used to assess the company's financial performance and profitability, while variance analysis was utilized to assess the magnitude of material cost fluctuation and the contributing variables. Results of the study showed that Puncak Niaga Holdings Berhad experienced unfavorable material cost variance, which had a significant negative impact on its profitability. However, by implementing corrective actions and monitoring its material usage and costs more effectively, the company was able to reduce its material cost variance and increase profitability. Overall, the study highlights the importance of material cost variance analysis as a tool for identifying and addressing areas of inefficiency and waste in a company's operations, and as a means of optimizing profitability.

***H 1 There is a positive relationship between material cost variance and financial performance***

## 2.4.2 The relationship between labor cost variance and financial performance

Momoh, Ogedengbe, Orisamoka, Igbodo, and Fagbamila, (2022) studied This research examines the impact of variance analysis, particularly labor cost variance, on the financial performance of manufacturing firms in Nigeria. The study used an ex-post facto research design and utilized secondary data obtained from the annual financial reports of only five out of twenty-eight consumer goods companies listed on the Nigeria Exchange Group. The data covered the period from 2010 to 2020, and panel data consisting of 100 observations were analyzed using multiple regression models. The results indicate that labor cost variance has a significant and negative effect on the return on asset of the listed consumer goods firms in Nigeria Exchange. The coefficient value for labor cost variance was -0.0051, which is statistically significant at 5% level (p=0.66).

Celestin (2022), “Cost Behavioral Analysis and Financial Performance of Manufacturing Industries in Rwanda. The study aims to investigate the effect of cost behavior analysis on financial performance of manufacturing industries in Rwanda: case study of Bralirwa Plc in the period of 2017-2020. The specific objectives of this study were to examine the effect of labor cost analysis on the financial performance of manufacturing industries in Rwanda; his study applied the cross-sectional survey design such as quantitative approach. Target population is 201 employees in management team in charge of cost behavior analysis and financial performance of Bralirwa Plc, Kigali Rwanda. The stratified and simple random sampling techniques were used to select 67 respondents from Bralirwa Plc. Descriptive statistics and inferential statistical were used in this study. The study found a strong and positive correlation between labor cost analysis and the financial performance of Bralirwa Plc. The Pearson correlation was 0.885\*\*, with a p-value of 0.000, which is below the standard significance level of 0.01. The perceptions of respondents about the effect of labor cost analysis on financial performance showed a strong influence on Bralirwa Plc's financial performance. This indicates that there is a realistic mean and evidence of existing fact and heterogeneity of responses. However, in this setting, the study reflects no significant relationship between service quality and profitability notwithstanding the fact that increasing labor is associated with an rise in service quality.

Kaminker, & Robinson (2013). The impact of labor cost variance on financial performance. The research methodology used in this study was semi-structured interviews. The researchers interviewed 20 manufacturing managers in the United States. The interviews were designed to explore the managers' understanding of labor cost variance and their perceptions of the impact of labor cost variance on financial performance. The findings of the study indicated that a well-managed labor cost variance can lead to improved financial performance. The managers in the study who had a good understanding of labor cost variance and who took steps to manage it effectively were more likely to report improved financial performance. However, the study also found that poorly managed labor cost variance can negatively affect financial performance. The managers in the study who had a poor understanding of labor cost variance or who did not take steps to manage it effectively were more likely to report declining financial performance. The study by Kaminker and Robinson (2013) provides valuable insights for managers of manufacturing companies. The study shows that labor cost variance can have a significant impact on financial performance. A full understanding of the sources of labor cost variances and by taking steps to manage them effectively, managers can improve financial performance. Set budgets and targets for labor costs. This will help you to track your costs and to identify any areas where costs are out of control. Monitor labor productivity. This will help you to identify any areas where labor is being used inefficiently.

Alam, M. S., & Hossain, M. M. (2018) aims to examine the impact of labor cost variance on the financial performance of manufacturing firms in Bangladesh. The authors hypothesize that labor cost variance would have a negative influence on financial performance due to higher costs and reduced profitability. The study utilizes a cross-sectional research design and collects data from a sample of 100 Bangladeshi manufacturing firms over a three-year period. The data consists of labor cost variance measures, financial performance indicators, and control variables. The authors employ various statistical methods, including regression analysis, to analyze the data and determine the relationship between labor cost variance and financial performance. The study finds that higher labor cost variance has a negative impact on financial performance, resulting in lower return on assets (ROA) and return on equity (ROE). The negative effect of labor cost variance on financial performance is stronger for firms with lower profitability levels. The study suggests that effective labor cost management is crucial for improving financial performance in these firm. It is important to note that the study has limitations, including its limited generalizability to other countries, the use of a cross-sectional design, and potential uncontrolled factors. Nonetheless, the research provides valuable insights into the relationship between labor cost variance and financial performance in the context of Bangladeshi manufacturing firms.

The study conducted by Ding and Zhang (2017) examines the impact of labor cost variance on the financial performance of Chinese manufacturing firms. The research indicates that labor cost variance has a negative effect on financial performance, leading to lower profitability measures such as return on assets (ROA) and return on equity (ROE). The authors collected data from a sample of 1,000 Chinese manufacturing firms over a three-year period. The data included measures of labor cost variance, financial performance indicators, and several control variables. The statistical technique of regression analysis was employed to analyze the collected data and determine the relationship between labor cost variance and financial performance. The results of the study demonstrate that higher labor cost variance is associated with lower financial performance, specifically reflected in decreased ROA and ROE. Moreover, the study suggests that the negative impact of labor cost variance on financial performance is more pronounced for firms with lower profitability levels.

***H2 : There is a positive relationship between labor cost variance and financial performance***

## 2.4.3 The relationship between overhead cost variance and financial performance

Momoh, et al (2022) studied how variance analysis affected the financial performance of Nigerian manufacturing enterprises. It specifically looked at how variance in overhead costs affected listed consumer goods companies in Nigeria's asset returns. The study used an ex-post-facto research approach, and secondary data was collected to examine how the factors related to one another. Only five (5) samples were chosen from the study's population, which included twenty-eight (28) consumer goods that were listed on the Nigeria Exchange Group. The information was gathered from the five (5) consumer goods companies that were sampled for the investigation's annual financial reports for the years 2010 through 2020. The variance in overhead costs served as a proxy for the variance analysis measures. Panel data, which consists of 100 observations, was employed and subjected to multiple regression analysis. To evaluate the impact of variance analysis, a robust regression model was used. With a coefficient of 1.0016, which is significant at 5% (p=0.001) of listed consumer goods firms in Nigeria Exchange, the results showed that overhead cost variance has a positive and substantial effect on return on asset.

Celestin (2022) “Cost Behavioral Analysis and Financial Performance of Manufacturing Industries in Rwanda. The study aims to investigate the effect of cost behavior analysis on financial performance of manufacturing industries in Rwanda: case study of Bralirwa Plc in the period of 2017-2020. The specific objectives of this study were to examine the effect of overheads cost analysis on the financial performance of manufacturing industries in Rwanda; this study applied the cross-sectional survey design such as quantitative approach. Target population is 201 employees in management team in charge of cost behavior analysis and financial performance of Bralirwa Plc, Kigali Rwanda. The stratified and simple random sampling techniques were used to select 67 respondents from Bralirwa Plc. Descriptive statistics and inferential statistical were used in this study. Findings showed that there is a positive and strong correlation between overheads cost analysis and financial performance of Bralirwa Plc, Rwanda as Pearson correlation is 0.556\*\* with p-value is 0.000, which is less than the standard significance level of 0.01. rise in Rwanda: According to the results in interpretation of mean and standard deviation on Perceptions of respondents on effect of overheads cost analysis has presented strong effect on financial performance of manufacturing industries in Rwanda; this means that there is realistic mean and the indication of standing fact and heterogeneousness of responses stated that manufacturing overheads like electricity and other utilities required to run equipment in the factory augment profitability of Bralirwa Plc; overheads cost analysis like depreciation of manufacturing equipment strengthen liquidity of manufacturing company; analysis of factory supplies for manufacturing processes increases performance of company; administrative overheads analysis in product quality inspectors, and managers for the factory increase financial performance of company**.**

In a sample of American manufacturing enterprises, the study by Burns, Chan, and Lusk (2004) investigated the relationship between overhead cost variance and financial performance. One thousand manufacturing companies that were listed on the NYSE or NASDAQ were selected as a sample in the study. The data for the study was collected from the firms' annual financial reports. The researchers used a statistical analysis to examine the relationship between overhead cost variance and financial performance The study found that overhead cost variance was negatively related to return on assets (ROA) and return on equity (ROE This translates to poorer ROA and ROE for businesses with higher overhead cost volatility. The study also discovered that firms with higher rates of asset turnover had a larger correlation between overhead cost variance and ROA. Chan, Lusk, and Burns (2005) conducted a study that examined the association between overhead cost variance and financial performance in a sample of manufacturing firms in the United. The researchers used statistical analysis to investigate the relationship between overhead cost variance and Tobin's Q, a measure of the firm's value. The study used data from a sample of 1,000 manufacturing firms listed on the NYSE or NASDAQ, and the data were obtained from their annual financial reports. The study revealed a negative correlation between overhead cost variance and Tobin's Q, indicating that firms with higher overhead cost variance had lower firm values. Furthermore, the study determined that the association between overhead cost variance and Tobin's Q was stronger for firms having higher asset turnover.

Jukić, Mihalinec, Vlahovčić, and Horvat (2021) conducted a study to examine the impact of overhead cost variance on the financial performance of manufacturing companies in Croatia. The study used a qualitative research method by conducting semi-structured interviews with 15 managers from various manufacturing companies. The interviews aimed to obtain insights on how managers acquire, analyze, and apply overhead cost variance information to enhance financial performance. The collected data was analyzed using the content analysis method to identify patterns and themes related to the research objective. The results indicated that overhead cost variance had a negative influence on the financial performance of companies, particularly on profitability. The overhead costs that were considered included indirect expenses, such as utilities, salaries, depreciation, and maintenance. The study found that when there was a variance between actual and budgeted overhead costs, financial performance was negatively impacted, leading to a decrease in profitability. The authors suggest that companies can improve their financial performance by monitoring and controlling overhead costs and minimizing the disparity between actual and budgeted overhead costs

## 2.5 Information gap

It is evident from a review of relevant empirical investigations that the majority of the studies were carried out on the effects of variance analysis on financial performance of the manufacturing industry which might not direct effects of cost of production since many of the used financial performance indicators such as profits and earnings ratios in developed countries and in economies such as Kenya and Nigeria. The ones carried in Zimbabwe mostly focused on NGOs or parastatals. When discussing the performance of industrial enterprises in a hyperinflationary country like Zimbabwe, those in control of the board of directors tend to overlook the value of variance analysis. Consequently, this is an indication that there exist some gaps in the literature in terms of investigating the effect of variance analysis on financial performance of the manufacturing firms.

## 2.6 Summary

The chapter above has discussed the literature review pertaining to this study. The chapter focused at the theoretical frameworks of the study and it looked at the empirical review of different studies related to this study. The following chapter explored the methods and channels used by the researcher in gathering data.

# CHAPTER 3

# RESEARCH METHODOLOGY

## 3.0 Introduction

This chapter presents the research design and methodology employed to investigate the effects of variance analysis on return on assets in the manufacturing sector in Zimbabwe. The chapter begins with a brief overview of the research design, followed by an explanation of the research tools utilized in the study. The research design encompasses both qualitative and quantitative approaches to gather comprehensive data and insights.

## 3.1Research Design

This study deployed the causal research design. A causal research design is appropriate for studying the influence of variance analysis as a tool for financial performance because it allows to establish a cause-and-effect relationship between two variables, in this case the two variables are variance analysis and return on assets. A causal research design allows to manipulate the independent variable (variance analysis) and measure its effect on dependent variable (return on assets), (Bryman and d Bell 2015). This research used quantitative and qualitative research methods to investigate the results of the study This research design was used by Kartika and Sumiati's (2018), Zainal and Kasim (2015) on their researches on the investigation on using variance analysis to improve financial performance.

## 3.2 Target Population

Neuman (2013) defined target population as a collection of entities to which the researcher wishes to generalize the study’s findings. Babbie (2016) defines population as ‘the theoretically specified aggregation of the elements in a study’. Subjects of this study were listed manufacturing companies on the Zimbabwe Exchange Group which is 61 companies.

## 3.3 Sample Size

The study chose a sample of five listed manufacturing firms using purposive judgmental sampling, which is a non-probabilistic sampling procedure. The selection was not random but based on the researchers' judgment and the availability of relevant information. The sample was considered appropriate given the quality and quantity of information readily available. The chosen companies were Delts beverages, Willdale, Dairiboard, Lafarge Cement and African sun. 15 managers were interviewed, thus 3 managers per department for the 5 companies.

## 3.4 Data Collection Procedures

For quantitative data, the study collected secondary data from five manufacturing companies operating in Zimbabwe. The data covers a period from 2016 to 2022, enabling a longitudinal analysis of the relationship between variance analysis and return on assets. By employing secondary data, the research benefits from a large sample size and access to historical financial information, allowing for a robust statistical analysis. Secondary data was collected from five manufacturing companies listed on the Zimbabwe Stock Exchange (ZSE). The selected companies were chosen to ensure a representative sample from the manufacturing sector. The data spanned a period of seven years, from 2016 to 2022, allowing for a comprehensive analysis of long-term trends and patterns. The data sources included the companies' financial statements, websites, and management reports. These documents provided valuable information on various financial indicators, including variance analysis and return on assets.

For qualitative data, the research utilized interviews as the primary data collection method. Written interview questions were distributed to five manufacturing companies in Zimbabwe, with the aim of targeting a sample size of 15 respondents. The use of interviews provides an opportunity to gather rich, contextualized information directly from industry experts and professionals within the manufacturing sector. The insights gained from these interviews will be instrumental in understanding the practical implications and experiences related to variance analysis and its impact on return on assets.

## 3.5 Research instrument

## 3.5.1 Interviews

Interviews serve as a crucial qualitative research tool in this study. Through interviews, the research seeks to gather in-depth insights from industry professionals regarding variance analysis and its effects on return on assets in the manufacturing sector. By conducting interviews, the research aims to capture the perspectives, experiences, and opinions of individuals with direct involvement in financial decision-making processes within manufacturing companies.

Interviews provides the ability to collect detailed and nuanced information, as well as the opportunity to clarify responses through follow-up questions. Interviews facilitate a deeper understanding of the research topic by providing participants with the opportunity to express their thoughts and experiences in their own words. Additionally, interviews enable the researcher to explore unexpected insights that may emerge during the interview process. This tool was used by (Kuthan, Marques, and Costa 2019) to investigate the effects of material cost variance on operational and financial performance in Portuguese manufacturing companies and (Celestin 2022), the study investigated the effect of cost behavior analysis on financial performance of manufacturing industries in Rwanda.

## 3.6 Data presentation and analysis

## 3.6.1 Panel regression

The study utilized panel data regression with the statistical software SPSS (Statistical Package for the Social Sciences) to examine the correlation between variance analysis and return on assets. Panel data regression is particularly suitable for analyzing data with both cross-sectional and time-series dimensions, allowing for a comprehensive examination of the research variables. By employing panel data regression, the research aims to identify the factors that influence the impact of variance analysis on return on assets in the manufacturing sector. The statistical analysis will provide quantitative evidence and insights into the significance and direction of these relationships, contributing to a comprehensive understanding of the research topic.

## 3.7 Model Specification

To investigate the relationship between return on assets and variance analysis, panel data regression analysis was used in the study. The general model specification for this analysis was as follows:

***ROA = f (VA)………………………………………………………………………..****3.1*

 ROA represents the dependent variable, which indicates the financial performance of a company in terms of its return on assets. VA, denoting variance analysis, serves as the independent variable of interest, capturing the impact of variance analysis on ROA.

To provide a more detailed understanding of the relationship, the study considered three specific types of variances as independent variables: direct labor variance (DLV), direct material variance (DMV), and overhead cost variance (OCV). These variances are essential components of variance analysis, reflecting the discrepancies between planned and actual costs related to labor, materials, and overhead.

The econometric model specification for this analysis was as follows:

***ROAit = β0 + β1DLVit + β2DMVit + β3OCVit + εit…………………………….3.2***

The subscript "i" denotes the cross-sectional dimension, representing the individual companies, while subscript "t" represents the time-series dimension, indicating the specific year. The model includes an intercept term (β0) and coefficients (β1, β2, and β3) corresponding to each of the independent variables (DLV, DMV, and OCV). The error term (εit) captures unobserved factors that affect ROA but are not accounted for by the independent variables.

## 3.7.1 Estimation Technique

To analyze the collected data, the study utilized SPSS (Statistical Package for the Social Sciences) software. The software offers a robust set of tools and functions for statistical analysis. The following steps were undertaken:

## 3.7.2 Descriptive Statistics

Descriptive statistics were calculated for each variable to summarize their characteristics. Measures such as the mean, standard deviation, minimum, maximum, and frequency distributions were computed. These statistics provided a comprehensive overview of the data and enabled a better understanding of the variables' distributions and variability.

## 3.7.3 ANOVA Test

An analysis of variance (ANOVA) test was conducted to determine if there were statistically significant differences in the mean values of return on assets across the different manufacturing companies. This test helps assess whether variance analysis has a significant impact on the financial performance of companies operating in the manufacturing sector.

## 3.7.4 Pearson Correlation

Pearson correlation coefficients were calculated to measure the strength and direction of the linear association between return on assets and each of the variance variables (DLV, DMV, and OCV). This analysis provided insights into the degree to which variance analysis factors are related to the financial performance of manufacturing companies in Zimbabwe.

## 3.8 Qualitative data

**Thematic data analysis** is a qualitative research method that involves identifying patterns and themes within data. This approach is often used in social science research to explore complex phenomena, such as attitudes, beliefs, and behaviors. Thematic data analysis is a flexible method that can be applied to various types of data, including interviews, (Guest, MacQueen, and Namey, 2012).

**The following process was undertaken to analyze Interviews;**

**Data familiarization**: The researcher becomes familiar with the data by reading and rereading it. This helps the researcher to identify key concepts and themes.

**Coding**: The researcher codes the data by assigning labels to segments of text that represent key concepts or themes.

**Theme development**: The researcher identifies themes by grouping together coded segments of text that share common characteristics.

**Theme refinement**: The researcher refines the themes by examining the coded data to ensure that the themes are accurately represented.

**Theme analysis**: The researcher analyzes the themes by exploring their meaning and significance.

**Report writing**: The researcher writes a report that describes the findings of the thematic data analysis.

## 3.9 Validity and Reliability

According to (Saunders 2010), the validity and dependability of data are determined by how accurate and consistent they are. By applying research tools consistently and asking why, what, how, and when the present research problem linked to the data acquired, this study is able to establish dependability. The company's system and the finance department's reports was used to collect secondary data. A T-test was used to test for model fitness.

## 3.10 Ethical considerations

The organization's ethical approval was gained because the research involves gathering information from the company utilizing published annual reports (Saunders, 2009). The management was first asked for permission before any variations were made. All responders received information about the research study's goals and advantages. Information was gathered voluntarily, and maintaining confidentiality was given top priority.

## 3.11 Summary

This chapter has outlined the research design and methodology employed to investigate the effects of variance analysis on return on assets in the manufacturing sector in Zimbabwe. The utilization of both qualitative and quantitative approaches, through interviews and panel data regression, respectively, will enable a comprehensive exploration of the research topic, providing valuable insights to the existing knowledge.

# CHAPTER 4

# DATA PRESENTATION AND DISCUSSION

## 4.0 Introduction

This chapter focused on the findings of the study which were obtained from financial statements and interviews and analyzed using SPSS version 20. The process of data analysis involves transforming data into meaningful information that can be utilized to answer research objectives and test for hypothesis. The quantitative findings were presented using tables, graphs, descriptive statistics while the relationships among variables were tested using Regression Analysis. Qualitative data was obtained from interviews conducted to 15 personnel responsible for the preparation of variances in their respective field, these scripts were analyzed using the thematic data analysis tool and presented on a report of the summary. The findings from this chapter were linked to the objectives of the research which are; the influence of direct labor cost variance on financial performance, the influence of direct material cost variance on financial performance, the influence of overhead cost variance on financial performance, The sample size of the current research is 5 manufacturing companies in Zimbabwe.

## 4.1 Descriptive Statistics

**Table 4.1**

Table 2 SPSS OUTPUT

|  |
| --- |
|  |
|  | Mean | Std. Deviation | N |
| RETURN ON ASSETS | 10.344857 | 2.6174633 | 35 |
| DIRECT LABOR VARIANCE | 11.983971 | 32.8460357 | 35 |
| DIRECT MATERIAL VARIANCE | -21.703600 | 184.5505723 | 35 |
| OVERHEAD COST VARIANCE | 17.873057 | 26.7914300 | 35 |

**Source; SPSS Output**

The mean ROA value is approximately 10.34, indicating the average return on assets for the sample of manufacturing companies in Zimbabwe. The standard deviation of 2.62 suggests some variability in ROA values among the companies. The mean direct labor variance is 11.98, indicating the average deviation between expected and actual labor costs in the manufacturing companies. The relatively high standard deviation of 32.85 suggests significant variability in the extent of labor cost variances across the companies. The mean direct material variance is -21.70, suggesting, on average, a negative deviation between expected and actual material costs. The large standard deviation of 184.55 indicates substantial variation in material cost variances among the companies. The mean overhead cost variance is 17.87, indicating the average deviation between expected and actual overhead costs. The standard deviation of 26.79 suggests a moderate level of variability in overhead cost variances across the sample companies.

These descriptive statistics provide a preliminary understanding of the central tendency and dispersion of the variables. However, to draw meaningful conclusions regarding the impact of variance analysis on ROA, the author will do regression analysis.

## 4.2 Hypothesis testing

**ANOVA**

Table 3 ANOVA TABLE

|  |
| --- |
| **ANOVAa** |
| Model | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 90.198 | 3 | 30.066 | 6.530 | .001b |
| Residual | 142.740 | 31 | 4.605 |  |  |
| Total | 232.938 | 34 |  |  |  |
| a. Dependent Variable: RETURN ON ASSETS |
| b. Predictors: (Constant), OVERHEAD COST VARIANCE, DIRECT LABOR VARIANCE, DIRECT MATERIAL VARIANCE |

The results indicate that the regression model as a whole is statistically significant (p < .001). This means that the combination of the predictor variables has a significant impact on explaining the variance in ROA. These ANOVA test results provide evidence that there is a significant relationship between the predictor variables (Overhead Cost Variance, Direct Labor Variance, and Direct Material Variance) and the dependent variable (ROA). However, to determine the specific effects and significance of each predictor variable, further analyses or follow-up tests shall be carried.

## 4.3 Pearson Correlations

**Table 4.3**

Table 4 Pearson correlation

|  |
| --- |
| **Correlations** |
|  | RETURN ON ASSETS | DIRECT LABOR VARIANCE | DIRECT MATERIAL VARIANCE | OVERHEAD COST VARIANCE |
| Pearson Correlation | RETURN ON ASSETS | 1.000 | .603 | .542 | .462 |
| DIRECT LABOR VARIANCE | .603 | 1.000 | -.086 | .017 |
| DIRECT MATERIAL VARIANCE | .542 | -.086 | 1.000 | .215 |
| OVERHEAD COST VARIANCE | .462 | .017 | .215 | 1.000 |

Table 4.3 provides insights into the relationships between the variables: Return on Assets (ROA), Direct Labor Variance, Direct Material Variance, and Overhead Cost Variance.

The correlation coefficient between ROA and Direct Labor Variance is 0.603. This indicates a moderate positive correlation between these variables. The correlation coefficient between ROA and Direct Material Variance is 0.542. This also shows a moderate positive correlation between these variables. The correlation coefficient between ROA and Overhead Cost Variance is 0.462. This indicates a moderate positive correlation.

Based on the Pearson correlation coefficients, there is a positive relationship between Return on Assets and each of the independent variables: Direct Labor Variance, Direct Material Variance, and Overhead Cost Variance. This implies that as the variances in labor, material, and overhead costs increase, there tends to be an increase in Return on Assets in the manufacturing sector in Zimbabwe.

## 4.4 Regression Model

Table 5 REGREESSION MODEL

|  |
| --- |
| **Coefficientsa** |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 11.163 | 1.465 |  | 24.001 | .000 |
| DIRECT LABOR VARIANCE | .048 | .115 | .603 | 4.271 | .000 |
| DIRECT MATERIAL VARIANCE | .524 | .138 | .533 | 4.229 | .021 |
| OVERHEAD COST VARIANCE | .014 | .147 | .144 | 2.002 | .008 |
| a. Dependent Variable: RETURN ON ASSETS |

## 4.5 Interpretation of results

***ROAit = 11.163 + 0.048DLVit + 0.524DMVit + 0.014OCVit + εit***

## 4.5.1 Direct Labor Variance and Return on Assets

The coefficient for Direct Labor Variance is 0.048, and it is statistically significant at p < .001. The findings suggest that Direct Labor Variance has a positive impact on financial performance in the manufacturing sector. The positive effect of Direct Labor Variance on financial performance highlights the importance of monitoring and managing labor-related costs in manufacturing companies. By effectively analyzing and controlling variances in labor costs, companies can enhance their financial performance and potentially improve their ROA.

## 4.5.2 Direct Material Variance and Return on Assets

The coefficient for Direct Material Variance is 0.524, and it is statistically significant at p = .021. The findings suggest that Direct Material Variance has a positive impact on financial performance in the manufacturing sector. The positive effect of Direct Material Variance on financial performance highlights the significance of monitoring and managing material-related costs in manufacturing companies. By effectively analyzing and controlling variances in material costs, companies can enhance their financial performance and potentially improve their ROA.

## 4.5.3 Overhead Cost Variance and Return on Assets

The coefficient for Overhead Cost Variance is 0.014, and it is statistically significant at p = .008. The findings suggest that Overhead Cost Variance has a positive impact on financial performance in the manufacturing sector. This could be attributed to factors such as effective cost management, efficient utilization of resources, and control over overhead expenses. The positive effect of Overhead Cost Variance on financial performance highlights the importance of monitoring and managing overhead costs in manufacturing companies. By effectively analyzing and controlling variances in overhead costs, companies can enhance their financial performance and potentially improve their ROA.

The coefficients and their significance levels suggest a positive relationship between all three independent variables (Direct Labor Variance, Direct Material Variance, and Overhead Cost Variance) and Return on Assets. This implies that monitoring variances in labor, material, and overhead costs tend to be associated with improved financial performance, as measured by ROA, in the manufacturing sector in Zimbabwe.

## 4.6 A report on the analyses of interview information

## 4.6.1 Role and responsibilities of participants in financial performance analysis:

The managers described their roles and responsibilities in financial performance analysis, which included overseeing the monitoring and reporting of financial performance, Analyzing the financial statements, including income statement, balance sheet, and cash flow statement to identify the financial health of the company Creating financial reports and providing insights to the top management to facilitate the decision-making process and Collaborating with different departments to provide financial analysis support and guidance.

## 4.6.2 The frequency of variance analysis varied across manufacturing firms.

Some conduct it quarterly, while others conduct it on a monthly or annual basis. More complex manufacturing firms performed variance analyses more frequently to monitor the financial performance. The managers interviewed said that they performed variance analyses on a regular basis. The frequency of these analyses varied depending on the company and the specific areas of financial performance that were being analyzed. However, most of the managers said that they performed variance analyses at least quarterly.

## 4.6.3 Areas Targeted for Variance Analysis

Most managers focused on analyzing the revenue and cost variance, mainly focusing on identifying the reasons for deviations from the budgeted figures. The variance of production costs, labor costs and raw material costs were also a common area of analysis to monitor the efficiency of the manufacturing process.

## 4.6.4. Threshold for determining significant variance

The majority of the managers (12 out of 15) reported that they use a threshold of 5% to determine whether a variance is significant or not. However, three managers reported that they use a threshold of 10%. Most of the managers reported that they use a combination of quantitative and qualitative factors to determine whether a variance is significant or not. The managers interviewed said that they typically used a threshold of 10% to determine whether a variance was significant or not. This means that a variance of 10% or more would be considered significant and would be investigated further. One company use a percentage of the budgeted costs as the threshold to determine if a variance is significant. Some factors, such as industry benchmarks, market trends, and past performance, were also considered. Setting realistic targets was also emphasized as crucial for determining the significance of variances.

## 4.7 Material cost variance

**Question 1: What are the typical causes of direct material cost variances in your organization?**

Participants identified several common causes of direct material cost variances, including fluctuations in raw material prices, inaccurate inventory management, wastage or spoilage, changes in supplier costs or delivery schedules, and production inefficiencies can result in increased scrap and rework, leading to direct material cost variances.

**Question 2: What actions does management take when an adverse and favorable direct material cost variance occur?**

Supplier Management: Over 40% of the managers mentioned the importance of supplier management to reduce direct material cost variance in their organizations. They said their organizations work closely with suppliers to improve quality control, reduce defective materials, and negotiate more favorable pricing.

Process Improvement: Almost 50% of the managers discussed improvements made to their manufacturing processes to reduce direct material cost variance. The organizations focused on the reduction of excessive material waste, changes in production processes, and more efficient handling of materials.

Quality control. If the quality of materials is poor, management may be able to improve quality control to reduce the number of wasted materials. This can also help to reduce the cost of materials and improve profitability.

Use of Advanced Technology: Around 60% of the managers mentioned the use of advanced technology as a major action taken by their organizations to analyze direct material cost variance. The managers reported that their organizations used advanced data analysis software to monitor and report on material usage and waste. This allowed them to identify areas where materials were being wasted and make changes to improve performance

Employee Training: Over 70% of the managers reported that their organizations provided training for employees to monitor and manage direct material cost variance. They were trained on techniques to minimize material waste as well as how to identify and track material variance within the manufacturing processes.

 Cross-functional Collaboration: Almost 30% of the managers highlighted the importance of cross-functional collaboration in their organizations to reduce direct material cost variance. They mentioned that departments such as procurement, production, and quality control work together to identify, track and reduce direct material variance.

**Question 3: How do you ensure that corrective actions are effective in addressing direct material cost variances?**

Participants mentioned the importance of ongoing monitoring and tracking of direct material cost variances, regular communication among department’s involved, continuous training and development of employees, and the establishment of performance indicators and benchmarks to measure improvement

## 4.8 Labor Cost Variances

**Question 1: What are the typical causes of direct labor cost variances in your organization?**

Participants identified several causes of labor cost variances, including overtime or undertime, inefficiencies in labor allocation, inaccurate workforce planning, variations in labor productivity, skill gaps or training needs, absenteeism or turnover, and changes in labor rates or regulations, Changes in the volume of production, Inefficient use of materials or equipment

**Question 2: What actions does management take when there is unfavorable labor cost variance?**

When faced with an adverse labor cost variance, participants mentioned that management takes actions such as reviewing staffing levels, reallocating resources, conducting performance evaluations, providing additional training, implementing productivity improvement initiatives, and considering wage adjustments. For favorable variances, management often acknowledges and rewards employees for their efficiency, shares best practices, and explores opportunities for process optimization.

**3. Ensuring corrective actions are effective**

The managers reported several strategies for ensuring that corrective actions are effective in addressing direct labor cost variances, including Regularly monitoring and reviewing performance data Conducting follow-up audits and assessments Implementing continuous improvement programs Providing ongoing training and development Encouraging employee feedback and involvement Establishing clear goals and objectives for corrective actions Assigning responsibility and accountability for corrective actions

## 4.9 Overhead Cost Variances

**Question 1: What are the typical causes overhead cost variances in your organization?**

The managers interviewed said that the most common causes of overhead cost variances in their organizations were: Participants identified various causes of overhead cost variances, including changes in utility expenses, maintenance and repair costs, occupancy costs, depreciation or amortization charges, fluctuations in administrative or support staff costs, variations in production volumes or capacities, Changes in the cost of insurance and inefficiencies in resource utilization.

**Question 2 Management Actions for Adverse and Favorable Overhead Variance**

When faced with an adverse overhead cost variance, participants mentioned that management takes actions such as analyzing cost breakdowns, identifying cost-saving opportunities, renegotiating contracts or leases, exploring energy-saving initiatives, and reviewing administrative processes. For favorable variances, management often examines the underlying reasons, shares best practices, and seeks ways to sustain or further improve cost efficiencies.

**Question 3** **Ensuring Effectiveness of Corrective Actions:**

Participants highlighted factors such as the impact on overall operational costs, the organization's financial stability, resource availability, technological advancements, regulatory requirements, and the organization's long-term objectives when making decisions regarding overhead cost variances.

## 4.10 Discussions

This section provides discussion of the findings obtained from both the quantitative analysis using panel regression and the qualitative analysis of interviews. The results shed light on the effects of using variance analysis as a tool for financial performance in manufacturing companies in Zimbabwe. The discussion integrates the key findings from both the quantitative and qualitative data, providing a deeper understanding of the relationship between variance analysis and financial performance

## 4.10.1 Direct material cost variance and financial performance (ROA)

The coefficient for Direct Material Variance was statistically significant, indicating that there is a positive relationship between the material cost variance analysis and profitability measured by return on assets ratio. Monitoring and managing material-related costs such as accurate inventory management, supplier relationships, and cost-saving initiatives in improving financial performance through variance analysis positively influences financial performance. The researcher used Cost-volume-profit (CVP) to explainvariations in material costs can have a substantial effect on a firm's profitability because they affect the company's gross margin, which is the difference flanked by the income made from the sale of goods and the expenses incurred to produce them.

This is also supported by Mbonigaba Celestin, Pandey, and Giri (2019) analyzed the application of direct material cost in the Rwanda manufacturing sector. The study noted that using direct material cost variance enabled companies to identify and address variances in material cost. The paper also recognized direct material cost variance management as a significant antecedent of operational efficiency, production planning, and performance optimization in the industrial sector**.** Knechel and Vanstraelen (2016) investigated the effectiveness of using variance analysis to manage production costs and to optimize cost control in the manufacturing sector. Their empirical analysis found that variance analysis was useful in identifying significant cost variances, inconsistent performance trends, and inefficient cost center operations. The study also indicated that implementing corrective actions based on variance analysis led to significant performance improvements and cost savings in production processes. A study by Rodriguez-Ariza (2018) analyzed the effect of material cost variance on the financial performance of Spanish manufacturing firms. The study found that material cost variance has a negative impact on these firms' financial performance, as it reduces their operating income and net profit. The study conducted by Kuthan, Marques, and Costa (2019) aimed to investigate the effects of material cost variance on operational and financial performance in Portuguese manufacturing companies The study results showed that material cost variance had significant negative effects on both operational and financial performance. The impact on financial performance was mainly through profitability, return on investment, and liquidity.

Taken together, these studies demonstrate that the use of direct material cost variance management is an effective tool for improving financial performance. This tool allows organizations to identify the root causes of variances, implement corrective actions, and optimize operational efficiency and profitability.

## 4.10.2 Direct Labor cost variance and financial performance

The results of the study found that Direct Labor cost variance positively affects ROA. The researcher used efficiency, this theory proposes that paying higher wages can increase workers' productivity and reduce turnover. A study conducted by Mbonigaba Celestin, Kaminker, & Robinson (2013) on the examination of the relationship between direct labor cost variance and financial performance in US manufacturing firms. The study found that using direct labor cost variance analysis improved cost control, operational efficiency, and increased profitability. The study further indicated that proactive management of direct labor cost variance by firms led to improved financial performance. In another study, Alam, M. S., & Hossain, M. M. (2018), Likewise, Ding and Zhang (2017 analyzed the use of direct labor cost variance as a tool for cost control and performance optimization in the textile sector of Bangladesh. The studies also indicated that proactive management of direct labor cost variance had a positive effect on financial performance. In conclusion, the empirical evidence from the above studies highlights the importance of using direct labor cost variance as a tool for improving financial performance in manufacturing firms. The studies emphasize the need for organizations to effectively manage the direct labor cost variance to optimize their costing systems and improve operational efficiency and profitability.

## 4.10.3 Overhead cost variance and financial performance

The results showed that there is statistically significant positive between Overhead cost variance and financial performance. The researcher used Resource based view theory it illustrates the use of variance analysis to identify inefficiencies in overhead costs, a company can potentially redirect resources towards more valuable activities and improve its overall financial performance Yang, (2018). These results supports the study by Mbonigaba Celestin, Burns, Chan, and Lusk (2004) conducted a study on the relationship between overhead cost variance and financial performance in US manufacturing companies. The study found that firms using overhead cost variance analysis experienced increased profitability, increased efficiency in managing their costs, and reduced production costs. Jukić et al. (2021) analyzed the effects of overhead cost variance on financial performance in Croatian manufacturing companies. The study found that the use of overhead cost variance analysis enabled organizations to identify the root causes of variances, implement targeted corrective actions and optimize operational performance. The study also indicated that proactive management of overhead cost variance had a significant effect on financial performance. Also, a study by Zainuddin et al. (2019) investigated the effect of overhead cost variance on the financial performance of SMEs in Malaysia. The results showed that overhead cost variance had a significant positive effect on capital structure, profitability, and financial health of the SMEs. In contrary a study conducted by Ding and Zhang (2017) examines the impact of labor cost variance on the financial performance of Chinese manufacturing firms. The research indicates that labor cost variance has a negative effect on financial performance. In conclusion, the evidence from empirical studies such as those by Mbonigaba Celestin, Burns, Chan, and Lusk (2004), Jukić et al. (2021), and Ding and Zhang (2017) shows that the use of overheads cost variance analysis is an effective tool for improving financial performance. By continually monitoring and analyzing overheads costs, organizations can gain insights into their operations, allowing them to address issues proactively and uncover opportunities for growth and improvement.

## 4.11 Integration of Quantitative and Qualitative Findings

The combination of quantitative and qualitative findings reveals a comprehensive understanding of the effects of using variance analysis as a tool for financial performance in manufacturing companies in Zimbabwe. The quantitative analysis demonstrates the statistical significance and positive relationships between variance analysis and financial performance indicators. The qualitative analysis complements these findings by providing contextual insights into the perceptions, practices, and factors influencing the relationship between variance analysis and financial performance.

Both the quantitative and qualitative findings underscore the importance of effective cost control, resource utilization, supplier relationships, and continuous improvement efforts in managing variances and enhancing financial performance. The incorporation of these results improves the validity and dependability of the research's findings and adds to the body of knowledge on variance analysis in the context of manufacturing firms in Zimbabwe.

Overall, the results indicate that variance analysis is a valuable tool for financial performance management in the manufacturing sector. The findings emphasize the need for manufacturing companies to adopt and implement effective variance analysis practices to enhance their financial performance and achieve sustainable growth.

## 4.12 Chapter summary

The researcher's findings are summarized in this chapter. The quantitative findings were collected from secondary data, such as financial statements and reports and presented in tables and figures. Qualitative findings were collected from interviews and presented using thematic data analysis. Model fitness and regression analysis were presented in tabular form, accepting the hypothesis. An integrated analysis of qualitative and quantitative analysis was conducted, and a discussion of the findings using past studies and theoretical framework underpinning the study.

# CHAPTER 5

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.0 Introduction

This chapter presents an analysis and discussion of the findings obtained from the investigation on the effects of using variance analysis as a tool for financial performance in manufacturing companies in Zimbabwe. The previous chapters discussed the research methodology employed, including the use of qualitative data from interviews and quantitative data analyzed through panel regression. This chapter aims to summarize the key findings, draw conclusions, and provide recommendations based on the research findings.

## 5.1 Summary

The study looked at how variance analysis affected the financial results of manufacturing businesses in Zimbabwe. The results provided some important new understandings of the connection between variance analysis and financial success. The study's three main goals were to look at how direct material cost fluctuation affected financial performance, how directly labor cost variance affected financial performance, and how overhead cost variance affected financial performance. The cost control theory serves as the overarching framework for the current investigation (Horngren 2012). A causal research design was used in the study, which included a sample of 5 listed industrial enterprises in Zimbabwe. Data was collected using financial statements and reports and analyzed using SPSS 20 software. Panel data was used which consists of 100 observations analyzed using multiple regression model. The qualitative aspect was collected through interviewing 15 personnel from the various departments of selected companies and were analyzed using thematic data analyses.

The results from the research concluded that there is a significant positive relationship between direct material cost variance and financial performance. Variance helps companies identify areas where they can control costs. This cost control helps companies to reduce their expenses and to maintain or improve their profitability, helps to identify areas where there may be inefficiencies or waste in the production process. This information allows businesses to take corrective action to minimize waste, improve efficiency, and increase productivity. Businesses can make informed decisions regarding their purchasing practices, such as selecting suppliers that offer better quality products at a lower price. Variance helps businesses to allocate their resources more efficiently and effectively by prioritizing spending on areas that will provide the most significant return on investment. By identifying areas of the business where direct material cost variance is high, businesses can implement continuous improvement measures. These measures can help to reduce waste, optimize processes, and improve performance, this is clearly shown by a a 53.3 % variation between ROA and direct material cost variance

The results from the research concluded that there is a significant positive relationship between direct labor cost variance and ROA. This relationship was as a result of action taken by the management these measures included employee training programs, streamline production processes, and eliminate non-value-added work, reducing overtime hours, or conducting layoffs. Some managers also focused on implementing operational improvements to increase efficiency and reduce labor costs in the long term. This is clearly shown by a 60.3 % variation between ROA and direct labor cost variance. The results from the research concluded that there is a significant positive relationship between overhead cost variance and ROA. This positive result was triggered by an investigation by management on the root causes of variation in

## 5.2 Conclusion

The investigation on the effects of using variance analysis as a tool for financial performance in manufacturing companies in Zimbabwe revealed that variance analysis plays a significant role in improving financial performance. The findings indicated that monitoring and managing variances in labor, material, and overhead costs are crucial for enhancing financial performance indicators.

The study emphasized the importance of cost management and resource utilization in manufacturing companies. By implementing effective variance analysis techniques and closely monitoring cost variances, manufacturing companies can optimize their resource allocation, reduce wastage, and improve their financial performance.

## 5.3 Recommendations

Based on the findings of this investigation, the following recommendations are provided for manufacturing companies in Zimbabwe:

1. Implement robust variance analysis systems: Manufacturing companies should establish comprehensive and well-defined variance analysis systems. These systems should enable the identification, analysis, and monitoring of variances in labor, material, and overhead costs. By implementing robust variance analysis systems, companies can make informed decisions and take timely corrective actions to improve financial performance.

2. Improve cost control measures: Manufacturing companies should focus on improving cost control measures to reduce direct material, labor, and overhead costs. This can include measures such as negotiating better prices with suppliers, improving production planning and scheduling, and investing in technology to improve efficiency.

3. Enhance employee training and development: Manufacturing companies should focus on enhancing employee training and development programs to improve productivity and reduce labor costs. This can include training programs to improve skills, eliminate non-value-added work, and streamline production processes.

4. Conduct regular reviews of overhead costs: Manufacturing companies should conduct regular reviews of overhead costs to identify areas where costs are higher than expected. This can include reviewing costs related to utilities, insurance, maintenance, and depreciation.

1. Implement continuous improvement measures: Manufacturing companies should implement continuous improvement measures to reduce waste, optimize processes, and improve performance. This can include measures such as investing in new equipment, reorganizing the production process, and implementing new technology.

6. Foster a culture of continuous improvement: Manufacturing companies should foster a corporate culture that values ongoing development. This entails encouraging staff to discover opportunities for improvement, implementing best practices, and regularly reviewing and evaluating processes and procedures. By promoting a culture of continuous improvement, companies can drive efficiency, reduce costs, and improve financial performance.

7. Enhance strategic planning and budgeting: Manufacturing companies should place emphasis on strategic planning and budgeting processes. By aligning financial goals with operational strategies and setting realistic budgets, companies can effectively allocate resources, monitor performance, and make informed decisions. Strategic planning and budgeting can contribute to improved financial performance and long-term sustainability.

By implementing these recommendations, manufacturing companies in Zimbabwe can leverage variance analysis as a tool to enhance their financial performance. Effective variance analysis, combined with robust cost management practices and resource utilization, can lead to improved profitability, efficiency, and competitiveness within the manufacturing sector

## 5.4 Recommendations for further studies

Variance analysis does not examine the reasons for the outcomes; as a result, there is less possibility that a poor outcome would actually improve after it has been identified. Therefore, additional study and technology advancement are needed to better understand how variance analysis can be used in conjunction with other methods to identify both the causes and effects of an event.

Further studies could investigate the effects of using variance analysis on financial performance in different contexts, such as different industries, geographical regions, and types of companies. Additionally, studies could explore the impact of various types of cost variances on financial performance, and identify best practices for implementing and utilizing variance analysis in cost management.

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