CENTRAL ASIAN JOURNAL OF INNOVATIONS ON TOURISM MANAGEMENT AND FINANCE

Volume: 04 Issue: 02 | 2023 ISSN: 2660-454X

https://cajitmf.centralasianstudies.org

Utilizing Cost-Volume-Profit Analysis for Informed Decision Making in Small Business Management

[1] Gilbert Ogechukwu Nworie
[2] Prof. Tochukwu Gloria Okafor
[3] Chinyere Christiana Igwebuike
[4] Dr. Onyali, Chidiebele Innocent

Received 16th Dec 2022,
Accepted 19th Jan 2023,
Online 14th Feb 2023

[1,2,3,4] Department of Accountancy, Nnamdi Azikiwe University, Awka, Anmabra state, Nigeria
dulcisgil@gmail.com

Abstract: The study assessed the use of cost volume profit analysis as a management tool for decision-making in small scale businesses in Anambra state, nigeria. The specific objectives of this study was to ascertain how CVP analysis enhances profit planning, pricing decision and production planning in small scale firms in Anambra state. A descriptive survey design was adopted for the study. The population of this study was made up of accounting academics, managers and accountants of small scale enterprises in Awka metropolis. A sample of 93 respondents filled and returned the online questionnaire administered. This research made use of primary data which were collected using structured questionnaires developed based on 5-point likert scale system. Techniques used for the descriptive statistical analysis were mean, percentages and frequency counts. Student's t-test was applied to test the hypotheses of the study at 5% level of significance. The findings revealed that the use of CVP analysis significantly enhances profit planning, pricing decision and production planning in small scale firms in Anambra state at 5% level. It was recommended therefore that small scale businesses should deploy cost volume-profit analysis in making vital and reasonable decision particularly when faced with managerial problems which have cost volume and profit implications.

Key words: Cost volume profit analysis, Decision-making, Profit planning, Pricing decision and Production planning.

Introduction

Small and Medium-Sized Enterprises (SMEs) play a significant role in driving the development of an economy, particularly in countries like Nigeria that are working towards diversifying from petrol-carbon revenue, reducing poverty, and creating employment (Meshack, Nworie & Orji, 2022). However, the early failure of SMEs has been primarily linked to inadequate revenue generation, which fails to cover operating costs and provide sustainable profits (Abdullahi, Suleiman, Mukhtar, & Musa, 2017). The

absence of or weak application of management accounting techniques also hinders the performance of SMEs, leading to poor managerial decisions, incorrect targets, and adverse variances in budget and actual activities. Effective managerial decision-making requires the use of appropriate financial and management models (Nworie & Oguejiofor, 2023), such as the cost volume profit analysis technique (Okpala & Osanebi, 2020). The cost volume profit analysis, or CVP, is a mathematical equation that predicts future volume of activity, costs, sales, and profits (Santhoshkumar, 2021). According to Malarkodi and Ranjitha (2021), CVP analysis is a powerful tool in maximizing profits in today's competitive market scenario. It helps companies make vital decisions to increase sales and profits, demonstrating the relationship between variables such as variable cost, sales volume, sales mix, and product cost.

The general objective of CVP analysis is to assist management in formulating pricing policies by projecting the impact of different price structures on cost and profit (Ndongolo, 2013). The efficiency and relevance of CVP analysis as a decision model is highlighted by its ability to help businesses navigate challenges in the ever-changing business environment, particularly in Nigeria (Malarkodi & Ranjitha, 2021). SMEs that fail to implement effective CVP analysis may miss out on this valuable tool, which could have helped them boost profits (Malarkodi & Ranjitha, 2021). The financial objective of SMEs is to ensure a surplus position over investment and increase the net worth of the organization (Akinsulire, 2017). Profitability enables a firm to reward capital providers and create further wealth through reinvestment of reserves (Oyerogba, Solomon, Olaleye, & Adesina, 2014). Profit, pricing, and production planning are crucial for SMEs to achieve optimal profit levels by enabling managers to forecast future profitability, avoid anticipated problems, attain set goals, and evaluate performance (Okpala, Adegbola, & Afolabi, 2018). However, poor product planning, pricing decisions, and profit planning can negatively affect management decisions and profitability.

One common application of CVP analysis is to determine the amount of output needed to achieve a target profit or break even (Santhoshkumar, 2021). CVP analysis is a management accounting technique that categorizes costs into fixed and variable costs and compares them to sales revenue (Santhoshkumar, 2021). However, Sajedeh, Abekah, and Rahim (2020) note that the use of CVP analysis for actual planning can be limited by an inability to incorporate uncertainty in the analysis when assumptions about known prices and costs are incorrect. The limitations of CVP analysis, such as fixed costs not always being fixed, the proportionate relationship between variable cost and volume of output not always being effective, unit selling price not always being constant, and its lack of suitability for multi-product firms, may explain why some managers neglect its use in the managerial decision-making process (Sajedeh, Abekah & Rahim, 2020).

Problem Statement

Management decisions based on Cost-Volume-Profit (CVP) analysis can help firms achieve the desired level of profit and identify the operational safety margin. According to Kavitha (2018), the effective use of CVP analysis can lead to determining the necessary expenditure for producing a specified number of products that will help Small and Medium Enterprises (SMEs) reach their desired profit goal. This relationship between CVP analysis and profit planning, pricing decisions, and production planning has been established theoretically.

However, there are limitations to the use of CVP analysis for decision-making in firms. Ihemeje, Okereafor, and Ogungbangbe (2015) noted that managerial incompetence is one of the major problems faced by firms when using management accounting models such as CVP. Additionally, the limitations of CVP analysis, including faulty assumptions such as fixed costs not always being fixed and the proportionate relation between variable costs and output volume not always being effective, can reduce the credibility and accuracy of information produced. The unreliability of CVP analysis is further

criticized due to its limitations in handling multi-product firms. These limitations can have an impact on managerial decisions regarding profit, production, and pricing.

The success of profit planning, pricing decisions, and production planning in SMEs is a measure of the effectiveness of managerial decision-making. Inadequate managerial decisions are often a contributing factor to the failure and underperformance of SMEs, as shown by Okpala and Osanebi (2020), who found that only 5-10% of Nigerian SMEs continue in business and grow to maturity, while the rest either shut down within the first 10 years of existence or do not survive the first five years. While numerous studies have been conducted, such as those by Santhoshkumar (2021), Malarkodi and Ranjitha (2021), Sajedeh, Abekah, and Rahim (2020), Nguyen, Oanh, Phong, and Tran (2020), Waihenya (2019), Arif (2018), Kallio (2018), Lulaj, and Iseni (2018), Abdullahi, Mukhtar, Sulaimon, and Musa (2017), Okechukwu, Ekwunife, and Moneke (2016), Ali, and Moudud-Ul-Huq (2016), Osazevbaru (2014), and Ndongolo (2013), they have not specifically determined the contribution of CVP to profit planning, production planning, and pricing decisions. This gap in knowledge is addressed by the present study.

Objectives of the Study

The broad objective of this study is to explore cost volume profit analysis as a management tool for decision-making in SMEs in Anambra state. The specific objectives of this study include:

1. To ascertain the extent to which the use of CVP analysis enhances profit planning in small scale firms in Anambra state.
2. To examine the degree to which the use of CVP analysis improves pricing decision of small scale firms in Anambra state.
3. To determine the magnitude to which the use of CVP analysis facilitates production planning in small scale firms in Anambra state.

Research Questions

1. To what extent does the use of CVP analysis enhance profit planning in small scale firms in Anambra state?
2. To what degree does the use of CVP analysis improve pricing decision of small scale firms in Anambra state?
3. To what magnitude does the use of CVP analysis facilitate production planning in small scale firms in Anambra state?

Literature review

Conceptual Issues

Cost Volume Profit Analysis

Cost Volume Profit (CVP) analysis is a management tool that helps predict the impact of changes in costs, sales, and volume on a business's future profits (Santhoshkumar, 2021). It is a mathematical equation that calculates the relationship between these variables and provides insight into how different pricing structures will affect costs and profits (Ndongolo, 2013). The primary objective of CVP analysis is to assist management in making informed pricing decisions by projecting the effects of different pricing scenarios on costs and profits (Abdullahi, Mukhtar, Sulaimon, & Musa, 2017).

CVP analysis can be used in both a narrower and broader sense. In its narrower sense, it is used to find the "break-even point", or the level of activity where total costs equal total sales (Abdullahi et al., 2017). In other words, it helps determine the output level at which costs and revenues are equal. In its broader sense, CVP analysis is a system of analysis that determines the relationship between cost, volume, and

profits, and provides insights into profit, cost, and sales value at different levels of output (Abdullahi et al., 2017). Overall, CVP analysis plays an important role in helping businesses make informed decisions and face the challenges posed by the ever-changing business environment, particularly in Nigeria.

Use of CVP for Production Planning

The cost-volume-profit (CVP) analysis determines the contribution margin of a product, the break-even point, target profit, and degree of operating leverage. By analyzing cost, volume, and profit, managers can understand the behavior of the production mix when there are changes in selling price, costs, or output. Kallio (2018) highlights the usefulness of variable costing in conducting CVP analysis or making managerial decisions such as production planning. Kee (2007) states that the CVP analysis is based on estimates to measure the costs of manufacturing a specific product or product mix. Analyzing cost data by each calculation target makes production planning easier. The information obtained allows companies to evaluate the efficiency of their strategy and focus on problematic areas. Although the overall performance of a company may be positive, a single product may still be creating a loss. The CVP analysis helps maximize the efficiency of production. Even though CVP analysis is most useful in a single-product setting, it can still be applied to companies with multiple products. A sales mix must be defined before the analysis can be conducted. The product mix is described as a package and the package values are used for the calculations. Okechukwu, Ekwunife, and Moneke (2016) stress the importance of defining the production plan, as it directly impacts the results of the analysis. Managers must pay close attention to the chosen production mix as it affects the company's revenue and profit. The right combination of sold products can increase the profit from operations and be used for new product development or investment (Kallio, 2018).

Use of CVP for Pricing Decision

The CVP model is a crucial tool for determining the practical application of the cost function and helps managers to examine the relationship between sales and cost components systematically (Glautier, Morris, & Underdown, 2011). The CVP analysis is also used to evaluate the financial impact of various strategic and operational decisions, especially in terms of short-term pricing decisions and assessing the margin of safety. Successful pricing decisions are the foundation of a profitable business and one of the company's most important decisions, directly affecting sales and profit. Even minor changes in sales prices can have a direct impact on a company's viability, making pricing a complex task. If the selling price is too low, it may not cover all incurred costs, while too high prices may drive away customers. Companies can estimate the prices of their products using different pricing methods (Kallio, 2018). The determination of selling prices can be based on competitor pricing or product costs, but pricing is always contingent on cost information, as the supply is directly affected by costs. Therefore, it is essential to determine the correct price when developing a new product, one that covers all costs and generates the required profit (Okechukwu, Ekwunife & Moneke, 2016).

Under the CVP model, costs are categorized into fixed and variable costs as a matter of assumption. While variable costs fluctuate with changes in the volume of output, fixed costs remain constant within a relevant range (Stefan, 2012). The variable cost is zero when no product is manufactured or sold, but the fixed cost is higher than zero. This scenario implies that the contribution is maximized to cover the fixed cost when the selling price per unit is higher than the variable cost per unit (Lucey, 2003). Some costs are semi-fixed or semi-variable and must be separated into fixed and variable components before the CVP analysis can be performed. The production and sales volume measure the units of a firm's product manufactured and sold within a given period (Georgiev, 2014). The effectiveness of the CVP technique can be seen in virtually everything that managers do, particularly in terms of pricing decisions.

Use of CVP for Profit Planning

Organizations engage in planning activities with the aim of achieving their desired goals. The process involves a series of steps that outline the timing and resources necessary to achieve the desired level of performance and its resulting outcome (Okechukwu, Ekwunife, & Moneke, 2016). The CVP analysis is a crucial tool that helps managers to evaluate the impact of changes in costs and volume on the operating profit, and determine the Break-Even Point (BEP) under different sales volumes and cost structures. This makes the technique particularly useful for short-term economic decisions (Okpala & Osanebi, 2020).

The ultimate goal of most business ventures is to earn maximum profits (Nworie, Moedu, & Onyali, 2023; Nworie & Mba, 2022). The level of production, or volume of output, is a key factor that influences profits. CVP analysis examines the relationship between costs, volume, and profit with the aim of maximizing profits. Changes in the level of production, such as competition, introduction of new products, trade depression or boom, increased demand for a product, scarce resources, and changes in product prices, can all impact profits. In these cases, management must study the effect on profits due to the changing levels of production. Cost-volume-profit analysis (CVP analysis) is one of the techniques that can aid management in this regard (Abdullahi, Mukhtar, Sulaimon, & Musa, 2017).

Theoretical Framework

The Contingency Theory of management was first proposed by Burns and Stalker in 1961. This theory is commonly used in management studies and suggests that there is no one-size-fits-all management accounting technique that is applicable to all firms. Rather, each organization should develop its own unique management strategy to maximize shareholder wealth and promote organizational growth. The theory takes into account various factors that may influence a firm's choice of management accounting technique, such as firm size, technological changes, and the level of infrastructure (Ayaundu & Ogoun, 2020).

The effectiveness and efficiency of a technique, such as the cost-volume-profit (CVP) analysis, is a major determinant of whether it will be adopted by a firm. The Contingency Theory posits that the optimal growth of an organization depends on the management information system being able to meet the specific information needs of the firm (Maziriri & Miston, 2017; Gichaaga, 2014). The purpose of management accounting tools, like CVP analysis, is to provide relevant information for planning and controlling the economic resources of the firm. However, if the information produced does not meet the specific needs of the enterprise, it will lose its relevance.

Therefore, the Contingency Theory can be used to link the use of CVP analysis to effective decision-making. The primary goal of CVP analysis is to assist management in formulating pricing policies by projecting the impact of different price structures on cost and profit (Ndongolo, 2013). By helping in profit planning, production planning, and pricing decisions, CVP analysis has the potential to improve the decision-making process of small and medium-sized enterprises (SMEs). This is why the current study is based on the Contingency Theory.

Empirical Review

A number of studies have been conducted to explore the impact of Cost Volume Profit (CVP) analysis on various organizations and industries. Santhoshkumar (2021) conducted a descriptive study on the CVP analysis of Sri Jayashree Food Corn Products, using only secondary data from 2016 to 2020. The study found that CVP analysis has a significant impact on the financial strength of the company. In a similar study, Malarkodi and Ranjitha (2021) analyzed the determinants of CVP in E.I.D-Parry (India) Limited Pugalur and found that CVP analysis is used to increase production limit, minimize manufacturing costs, and make informed decisions for profit. Okpala and Osanebi (2020) used a cross-sectional survey research design to examine the impact of CVP on profit planning in manufacturing SMEs. The study

found a positive and statistically significant impact of CVP on profit planning, and recommended that SMEs should employ high-quality accountants and streamline their decision-making process for better results. Nguyen et al. (2020) studied the application of CVP analysis by public universities in Vietnam and found that universities were using simple, non-comprehensive, and non-coordinated methods for decision-making. Nguyen and Nguyen (2020) investigated the factors affecting industry and university cooperation in education in the hotel industry in Vietnam and found that the process factor has the most positive impact, followed by the contextual factor. Waihenya (2019) studied the effect of CVP analysis on the financial performance of manufacturing firms in Industrial Area Nairobi and found that CVP helps managers understand the relationship between selling price, amount sold, cost, and profit. Kavitha (2018) carried out a study on CVP analysis and its effect on the profitability of the Salem Steel Authority of India Limited in Tamilnadu. Using ten years of financial data, the study found that CVP analysis helped escalate production capacity, reduce cost of production and wage cost, and increase profitability, volume, and return for investors.

Arif (2018) studied the impact of CVP analysis on the profitability of small fast food shops in the Bangladeshi fast food industry. Using a descriptive survey design and a questionnaire administered to 15 small fast food businesses, the study found that CVP analysis has a significant effect on profitability. Lulaj and Iseni (2018) examined the use of CVP analysis in the business environment. The study found that CVP analysis contributes to growth profitability and break-even in the business environment, and has a positive effect on sales value for service companies and production for manufacturing businesses. The study recommended that CVP analysis should be used for decision making as it decreases the risk threshold. Agwu (2018) analyzed the impact of strategic management on the business performance of small and medium-sized enterprises (SMEs) in Nigeria. The study found that SME's competitive advantage and business strategies contribute to an increase in customers and market shares, but organizational structure has a positive but not significant influence on transaction volumes.

Pradhan, Swain, and Dash (2018) studied the relationship between the adoption of various management accounting practices and its impact on supply chain performance and firm financial performance. The study found that management accounting practices positively and significantly affect the supply chain activity and corporate performance.

The study by Abdullahi, Mukhtar, Sulaimon, and Musa (2017) aimed to determine the use of cost-volume-profit (CVP) analysis as a management tool in small business enterprises in Bayero University Kano. The study population was composed of all small businesses within the university. Structured questionnaires were used as the primary source of data, and the hypotheses were tested using Mann-Whitney U test and Pearson correlation coefficient. The results showed a weak relationship between having knowledge of management accounting tools and their application and that small business enterprises utilized CVP ignorantly. It was recommended that CVP analysis and other management accounting tools be introduced to improve productivity.

Okechukwu, Ekwunife, and Moneke (2016) looked into the application of cost-volume-profit analysis in the decision making of manufacturing organizations. Using a comparative survey design, primary data was collected through questionnaires with a sample size of 255 from a population of 700. The findings showed that CVP analysis is important in decision making and that manufacturing firms should consider unit variable cost, marginal cost, and other factors affecting production before making managerial decisions.

Ali and Moudud-Ul-Huq (2016) evaluated the performance of manufacturing companies in Bangladesh based on CVP analysis. The study surveyed 14 textile companies and found that the average contribution margin ratio and average margin of safety percentage increased in 2013 compared to 2012. The study

also showed that other indicators of CVP techniques have positively impacted performance, while degree of operation leverage and earnings per share have changed negatively.

Ihemeje, Okereafor, and Ogungbangbe (2015) studied the effect of CVP analysis in the decision making of manufacturing industries. Using a combination of survey and longitudinal research design, both primary and secondary data were collected and analyzed using regression and correlation techniques. The results showed that the sales value and quantity of a product positively impacted profit, and that there was a significant relationship between the cost of production and profit. It was recommended that manufacturing industries adopt CVP analysis in their decision making.

Olanipekun, Abioro, Akanni, Arulogun, and Rabiu (2015) evaluated the impact of strategic management on competitive advantage and organization performance in a Nigerian bottling company. The study used primary data collected through a structured questionnaire and analyzed using descriptive statistics and inferential statistics. The results showed that the adoption and implementation of strategic management practices leads to competitive advantage and sustainable performance. It was recommended that organizations maintain and improve strategic management practices.

Osazevbaru (2014) studied financial modeling in non-profit organizations using the CVP approach. Using a case study approach, primary data was collected through questionnaires and analyzed using frequency percentage. The study addressed the traditional technique of CVP analysis and its limitations and suggested the use of Activity-Based Costing to overcome limitations. The results revealed that non-profit organizations use CVP to find the best combination of prices, volume, variable costs, and fixed costs.

Ndongolo (2013) analyzed the performance of CVP analysis in manufacturing companies in Tanzania, using Tanzania Portland Cement Company as a case study. The study used a case study survey type of research and collected data through random probability sampling and non-random sampling methods. The results showed that CVP analysis was beneficial in decision making, but more research was needed to determine its full potential.

Method

Research design is the blueprint for the collection, measurement and analysis of data. The study adopted descriptive survey research method of study. Descriptive survey research helped the researcher to explore cost volume profit analysis as a management tool for decision-making in SMEs in Anambra state. A descriptive survey research is the most economic approach that allows for an efficient gathering of primary data from a relatively large number of cases (Waihenya, 2019; Onyeizugbe, 2017). The population of this study is made up of accounting academics, managers and accountants of small scale enterprises in Awka metropolis. A sample of 93 respondents filled and returned the online questionnaire administered. This research made use of primary data which were collected using structured questionnaires The questionnaire was structured using 5-point likert scale of strongly agree, agree, neutral, disagree and strongly disagree.

The research sought to establish whether the research questionnaires yields consistent results whenever the instrument is applied to the same group of the respondents repeatedly. This was done using Cronbach's Alpha test of internal consistency. This measures the internal consistency of the questions in the questionnaire when the instrument was used from one time to another of the same group of the respondents. Based on the pilot data from this study, the Cronbach's Alpha coefficient was computed. The Cronbach's Alpha coefficient of at least 0.7 was used to ascertain the reliability of the questionnaire that was used in the data collection. The study found an aggregate Cronbach's alpha coefficient of 0.815 with respect to the research instrument. Techniques used for the descriptive statistical analysis were mean, percentages and frequency counts. Student's t-test was applied to test the hypotheses of the study at 5% level of significance.

Results and Discussion

Analysis of Research Questions

To answer the research questions, the structured questionnaires were distributed to respondents who filled in their level of agreement to the statements using the scale: 5 = Very High Extent, 4 = High Extent, 3 = Some Extent, 2 = Low Extent, and 1 = Very Low Extent.

Research Question 1: To what extent does the use of CVP analysis enhance profit planning in small scale firms in Anambra state?

Table 1 Presentation of Mean Scores for Research Question I

S/N	Questionnaire Items	VHE	HE	SM	LE	VLE		
		5	4	3	2	1	Mean	Remark
1	CVP analysis helps managers determine the quantity of output needed to earn a target profit or to break even	26	52	3	3	9	3.89	Accept
2	CVP analysis is effectively helps to forecast future earnings at different levels of activity	31	46	0	2	14	3.84	Accept
3	CVP model effectively identifies the margin of operational safety in firms	35	20	4	18	16	3.43	Accept
4	Management decisions based on CVP analysis facilitates the achievement of the desired profit level	23	37	5	22	6	3.53	Accept
5	Earning of maximum profit is the ultimate goal of all business undertakings	27	35	2	18	11	3.52	Accept

Source: Field Survey, 2022

Table 1 above presents the mean scores of the construct that measured the extent to which the use of CVP analysis enhances profit planning in small scale firms in Anambra state. A mean score that is greater than 3.0 implies that the statement in the questionnaire is generally accepted on average. According to the table, more number of the respondents agreed that the use of CVP analysis enhances profit planning in small scale firms in Anambra state at least, to some extent.

Research Question 2: To what degree does the use of CVP analysis improve pricing decision of small scale firms in Anambra state?

Table 2 Presentation of Mean Scores for Research Question II

S/N	Questionnaire Items	VHE	HE	SM	LE	VLE		
		5	4	3	2	1	Mean	Remark
6	CVP model is a vital tool for determining how sales relate to cost components	23	42	5	13	10	3.59	Accept
7	The financial consequence of a wide range of strategic can be well appraised using CVP analysis	13	62	7	9	2	3.81	Accept
8	CVP analysis provides a good assessment of practical application of cost function	31	41	5	4	12	3.80	Accept
9	CVP analysis is also used to better evaluate the financial consequence of operational decisions of a firm	37	38	1	12	5	3.97	Accept
10	Successful pricing decision improves business profits	24	39	6	15	9	3.58	Accept

Source: Field Survey; 2022

Table 2 above presents the mean scores of the construct that measured the extent to which use of CVP analysis improves pricing decision of small scale firms in Anambra state. A mean score that is greater than 3.0 implies that the statement in the questionnaire is generally accepted on average. According to the table, more number of the respondents agreed that the use of CVP analysis improves pricing decision of small scale firms in Anambra state, at least, to some extent.

Research Question 3: To what magnitude does the use of CVP analysis facilitate production planning in small scale firms in Anambra state?

Table 3 Presentation of Mean Scores for Research Question III

S/N	Questionnaire Items	VHE	HE	SM	LE	VLE		
		5	4	3	2	1	Mean	Remark
11	Cost-volume-profit analysis effectively determines the contribution margin of a product	26	34	4	19	10	3.51	Accept
12	Analyzing the cost-volume-profit of a product helps managers to better understand why the production mix behaves in a certain way	29	33	6	15	10	3.62	Accept
13	Cost-volume-profit analysis simplifies the production planning process	15	78	0	0	0	4.16	Accept
14	Conducting cost-volume-profit analysis assists helps to maximize the efficiency of production	31	30	4	18	10	3.35	Accept
15	Production planning assists managers to combine the right mix of sold products	25	45	3	6	14	3.66	Accept

Source: Field Survey; 2022

Table 3 above presents the mean scores of the construct that measured the extent to which the use of CVP analysis facilitates production planning in small scale firms in Anambra state. A mean score that is greater than 3.0 implies that the statement in the questionnaire is generally accepted on average. According to the table, more number of the respondents agreed that the use of CVP analysis facilitates production planning in small scale firms in Anambra state, at least, to some extent.

Test of Null Hypotheses

Paired Sample Test was applied to test the hypotheses of the study. The test was conducted at 5% level of significance with the aid of Statistical Package for Social Sciences (SPSS) Version 22.

Test of Hypothesis I

H_{o1}: The use of CVP analysis does not significantly enhance profit planning in small scale firms in Anambra state.

Table 4 Group Statistics for Hypothesis I

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Use of CVP analysis enhances profit planning	3.7742	93	.78507	.08141
	Use of CVP analysis does not enhance profit planning	3.0983	93	.84908	.08805

Source: Researchers Computation Using SPSS V. 22, 2021

Table 5 Independent Sample Test Result for Hypothesis I

		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	Use of CVP analysis enhances profit planning - Use of CVP analysis does not enhance profit planning	.67588	1.17269	.12160	5.558	92	.000

Source: Researchers Computation Using SPSS V. 22, 2022

Tables 4 and 5 above show the test of hypothesis of the difference in the response of the respondents on whether use of CVP analysis enhances profit planning. Table 4 shows that the mean response that use of CVP analysis enhances profit planning is 3.7742 while the mean response that use of CVP analysis does not enhance profit planning is 3.0983. Thus, the mean response that use of CVP analysis enhances profit planning is by 0.6759 greater. More so, the result above shows that the difference in the responses is statistically significant (t = 5.558, *p-value* = 0.000). Since the p-value is less than 0.05, the null hypothesis was rejected while the alternate hypothesis was accepted. As a result, the researcher concluded that the use of CVP analysis significantly enhances profit planning in small scale firms in Anambra state (t = 5.558, *p-value* = 0.000).

Test of Hypothesis II

H_{o2}: The use of CVP analysis does not significantly improve pricing decision of small scale firms in Anambra state.

Table 6 Group Statistics for Hypothesis II

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Use of CVP analysis improves pricing decision	3.7650	93	.44763	.04642
	Use of CVP analysis does not improve pricing decision	3.5627	93	.85123	.08827

Source: Researchers Computation Using SPSS V. 22, 2022

Table 7 Independent Samples Test Result for Hypothesis II

		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	Use of CVP analysis improves pricing decision - Use of CVP analysis does not improve pricing decision	.20225	.88945	.09223	2.193	92	.031

Source: Researchers Computation Using SPSS V. 22, 2022

Tables 6 and 7 above show the test of hypothesis of the difference in the response of the respondents on whether use of CVP analysis improves pricing decision. Table 6 shows that the mean response that use of CVP analysis improves pricing decision is 3.765 while the mean response that use of CVP analysis does not improve pricing decision is 3.5627. Thus, the mean response that use of CVP analysis improves pricing decision is by 0.20225 greater. More so, the result above shows that the difference in the responses is statistically significant (t = 2.193, *p-value* = 0.031). Since the p-value is less than 0.05, the null hypothesis was rejected while the alternate hypothesis was accepted. As a result, the researcher concluded that the use of CVP analysis significantly improves the pricing decision of small scale firms in Anambra state (t = 2.193, *p-value* = 0.031).

Test of Hypothesis III

H_{o3}: The use of CVP analysis does not significantly facilitate production planning in small scale firms in Anambra state.

Table 8 Group Statistics for Hypothesis III

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Use of CVP analysis facilitates production planning	3.8602	93	.63383	.06573
	Use of CVP analysis does not facilitate production planning	3.7189	93	.46552	.04827

Source: Researchers Computation Using SPSS V. 22, 2022

Table 9 Paired Samples Test Result for Hypothesis III

		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	Use of CVP analysis facilitates production planning - Use of CVP analysis does not facilitate production planning	.14132	.71088	.07371	4.917	92	.028

Source: Researchers Computation Using SPSS V. 22, 2022

Tables 8 and 9 above show the test of hypothesis of the difference in the response of the respondents on whether use of CVP analysis facilitates production planning. Table 10 shows that the mean response that use of CVP analysis facilitates production planning is 3.8602 while the mean response that use of CVP analysis does not facilitate production planning is 3.7189. Thus, the mean response that use of CVP analysis facilitates production planning is by 0.14132 greater. More so, the result above shows that the difference in the responses is statistically significant (t = 4.917, *p-value* = 0.028). Since the p-value is less than 0.05, the null hypothesis was rejected while the alternate hypothesis was accepted. As a result, the researcher concluded that the use of CVP analysis significantly facilitates production planning in small scale firms in Anambra state (t = 4.917, *p-value* = 0.028). These findings are in agreement with those of Santhoshkumar (2021); Malarkodi and Ranjitha (2021); Okpala and Osanebi (2020); Sajedeh, Abekah and Rahim (2020); Nguyen, Oanh, Phong and Tran (2020); Waihenya (2019); Kavitha (2018); Arif (2018).

Conclusion

The main goal of CVP analysis is to determine the optimal level of production to maximize profitability of a company. It is vital for managers to understand how costs behave in order to conduct budgets and profit planning. Information acquired by CVP analysis can be used for evaluating the business profitability. Decision-making process is enhanced when appropriate models are used in providing information to increases the probabilities that managers will make the best choice out of many alternatives. This is why managers therefore use Cost-Volume-Profit analysis as a tool to understand the relationships between costs, prices, volume, and profits. However, while managers can control the volume of activity, certainty about costs and prices is elusive under the best of operating conditions. The findings of this study showed that CVP model can be adapted to the overall goal of maximizing expected profits.

In the absence of accurate cost information, managers encounter difficulties in making production, pricing, and pricing decisions. Cost Volume Profit analysis is therefore a vital planning device that effectively assesses the inherent relationship between Cost, Volume of production and the profit that is made. The study found that CVP analysis has become a powerful instrument in the hands of policy

makers to maximize business profits. Based on the findings of the study, the following recommendations are proffered:

1. Corporate managers should use cost-volume-profit analysis more in performance measurement, control, stock valuation and in the establishment of selling prices.
2. All small scale businesses should deploy cost volume-profit analysis in making vital and reasonable decision particularly when faced with managerial problems which have cost volume and profit implications.
3. To achieve the target profit of the firm, the management should frequently determine whether the expected revenues from the expected goods and services will cover the costs that will be necessary for the productive efforts before commencing goods production or service provision.

References

1. Abdullahi, S. R., Mukhtar, I. S., Sulaimon, B. A. & Musa, M. H. (2017). Cost-Volume-Profit Analysis as a Management Tool for Decision Making In Small Business Enterprise within Bayero University, Kano. *Journal of Business and Management, 19*(2), 40-45.
2. Agwu, E. (2018). Analysis of the impact of strategic management on the business performance of SMEs in Nigeria. *Academy of Strategic Management*, *17*(1), 1-20.
3. Ali, R. & Moudud-Ul-Huq, S. (2016). Textile Industry in Bangladesh: An Analysis of CVP. *Management Studies and Economic Systems*, *2*(4), 287-298.
4. Al-Tarawneh H. A., (2012). The main factors beyond decision making. *Journal of Management Research, 4*(1), 1-23.
5. Arif, A. (2018). Analyzing Cost Volume Profit Relationship on Small Fast Food Shop (A Study on Bangladeshi Fast Food Industry). *International Journal of Business and Management Invention, 7*(11), 6-17.
6. Ayaundu, S. O. & Ogoun, S. A. (2020). Firm Attributes Count and Management Accounting Practices in an Emerging Market. *International Journal of Business and Economics Research, 9*(3): 94-102.
7. Georgiev D. (2014), Application of „Cost-Volume-Profit" Analysis in the Hotel Industry (Based On Survey Data of High-Ranking Hotels in the North-East Region of Bulgaria). *Journal of University of Economics Varna*, *48*(1), 1-10.
8. Gichaaga, P. M. (2014). Effects of MAP on financial performance of manufacturing companies in Kenya. *Master of Science in Finance Dissertation*, School of Business, University of Nairobi.
9. Glautier, M. W. E & Underdown B. (2001). Accounting Theory and Practice. Pearson Education Limited. Harlow England.
10. Ihemeje, J. C., Okereafor, G. & Ogungbangbe, B. M. (2015). Cost-volume-profit Analysis and Decision Making in the Manufacturing Industries of Nigeria. *Journal of International Business Research and Marketing, 1*(1), 7-15.
11. Kallio, A. (2018). Using of cost-volume-profit analysis in a manufacturing company. An Unpublished Research Project Submitted to Tallinn University of Technology.
12. Kavitha, R. (2018). Cost Volume Profitability Analysis - An Empirical Study With Reference To Salem Steel Authority of India Limited (SAIL), Tamilnadu. *International Journal of Business and Management Invention, 7*(5), 46-51.

13. Kee, R. (2007). Cost-Volume-Profit Analysis Incorporating the Cost of Capital. *Journal of Managerial Issues, 19*(4), 478-493.

14. Lucey, Terry (2003). Costing. TJ international PadstowCornwacl.

15. Lulaj, E. & Iseni, E. (2018). Role of Analysis CVP (Cost-Volume-Profit) as Important Indicator for Planning and Making Decisions in the Business Environment. *European Journal of Economics and Business Studies, 4*(2), 99-114.

16. Malarkodi, K. & Ranjitha, M. (2021). A Determinant Analysis of Cost Volume Profit of E.I.D-Parry (India) Limited Pugalur. *Annals of R.S.C.B. 25*(5), 2315-2322.

17. Maziriri E. T. & Miston M. (2017) Impact of Management Accounting Practices (Maps) on the Business Performance of Small and Medium Enterprises within the Gauteng Province of South Africa. *Journal of Accounting and Management, 7*(2), 12-25.

18. Meshack, A., Nworie, G. O. & Orji, M. G. (2022). Poverty Reduction in Awka Metropolis: The Role of Entrepreneurship Productivity. *Economit Journal: Scientific Journal of Accountancy, Management and Finance, 2*(3), 244-262. DOI: 10.33258/economit.v2i3.794

19. Miller, G. J., & Whicker, M. L. (2017). Handbook of Research Methods in Public Administration, Second Edition. In *H*. United Kingdom: Aggarwal printing press.

20. Ndongolo, R. P. (2013). Analysis of performance of cost volume profit (CVP) analysis in manufacturing companies in Tanzania: a case of Tanzania Portland Cement Company (TPCC). Dodoma: The University of Dodoma. http://hdl.handle.net/20.500.12661/1751

21. Nguyen, C. V., Oanh, T. T., Phong, T. & Tran, T. V. (2020). Application of Cost-Volume-Profit Analysis in Decision-Making by Public Universities in Vietnam. *Journal of Asian Finance, Economics and Business, 7*(6), 305-316.

22. Nworie, G. O. & Mba, C. J. (2022). Modelling financial performance of food and beverages companies listed on Nigerian exchange group: the firm characteristics effect. *Journal of Global Accounting, 8*(3), 37 - 52. https://journals.unizik.edu.ng/index.php/joga/article/view/1418/1142

23. Nworie, G. O. & Oguejiofor, B. C. (2023). Management Information System and Performance of Cement Firms in Southeast Nigeria. *International Journal of Accounting and Management Information Systems, 1*(1), 1–15. https://doi.org/10.35912/ijamis.v1i1.1366

24. Nworie, G. O., Moedu, V. O. & Onyali, C. I. (2023). Contribution of Current Assets Management to the Financial Performance of Listed Consumer Goods Firms in Nigeria. International Journal of Trend in Scientific Research and Development, 7(1), 77-87, URL: www.ijtsrd.com/papers/ijtsrd52600.pdf

25. Okechukwu, A. E., Ekwunife, E. N. & Moneke, P. C. (2016). Cost volume profit analysis application in management decision of manufacturing companies in Nigeria: a comparative study. *Journal of Accounting, Business and Social Sciences, 1*(1), 1-28.

26. Okpala, K. E. & Osanebi, C. (2020). Cost volume profit analysis and profit planning in manufacturing SMEs in Nigeria. *Asia-Pacific Management Accounting Journal, 15*(2).

27. Olanipekun, W., Abioro, M., Akanni, L., Arulogun, O. & Rabiu, R. (2015). Impact of Strategic Management on Competitive Advantage and Organisational Performance – Evidence from Nigerian Bottling Company. *Journal of Policy and Development Studies Vol. 9*(2), 185-198.

28. Onyeizugbe, C. U. (2017) Practical Guide to Research Methodology in Management. Onitsha: Good Success Press.

29. Osazevbaru, H. O. (2014). Financial Modeling in Non-Profit Organizations: The Cost-Volume-Profit Approach. *Research Journal of Finance and Accounting, 5*(6), 64-71.

30. Sajedeh, B., Abekah, J. & Rahim, A. (2020). Integration of Cost Volume Profit Analysis under Uncertainty in Profit Planning: A Current Application. *Strategies in Accounting and Management, 2*(2), 1-7.

31. Santhoshkumar, B. (2021). A Study on Cost volume profit analysis of Sri Jayashree food corn Products. *International Journal of Innovative Research in Technology*, *7*(12), 145-149.

32. Stefan, D. (2012). Developing a cost-volume-profit model in production decision system based on MAD real options model. *Procedia Economics, 3*, 350-354.

33. Waihenya, C. (2019). *Effects of managerial accounting practices on financial performance: a case of manufacturing firms in industrial area, Nairobi*. Unpublished Research Project Submitted to United States International University – Africa.