ACTIVITY BASED COSTING AND FINANCIAL PERFORMANCE OF MANUFACTURING AND ALLIED COMPANIES LISTED ON NAIROBI SECURITIES EXCHANGE, KENYA

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D53/NKU/PT/33169/2014

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS, ECONOMICS AND TOURISM IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER OF BUSINESS ADMINISTRATION (FINANCE OPTION) OF KENYATTA UNIVERSITY
MAY, 2023

DECLARATION

Declaration
I declare that this research project is my original work and has not been presented for award of a degree or any other certificate in any other institution of learning.

Signed ______________________  Date____________________

Vandrose Arithi
Reg. No: D53/NKU/PT/33169/2014

Recommendation
I confirm that this research project has been carried out under my supervision.

Signed ______________________  Date____________________

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Kenyatta University
DEDICATION

I dedicate this work to my parents: Mr. and Mrs. Bundi, for their unconditional love, support and always encouraging me, not only throughout my course but in all aspects of life. They have always been there for me, they are my good friends, they always want the best for me, two people I can totally trust with my life. May God continue answering your prayers and bless you with healthy, long, happy lives.
ACKNOWLEDGEMENT

My sincere thanks go to Almighty God for His grace during my course. A lot of gratitude also to my supervisor, Dr. Joseph Theuri, for his professional assistance and guidance to me while I was doing this proposal. I acknowledge my classmates for their support and input to my entire course.
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# Abbreviations and Acronyms

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<th>Description</th>
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<tbody>
<tr>
<td>ABC</td>
<td>Activity-Based Costing</td>
</tr>
<tr>
<td>CGN</td>
<td>County Government of Nakuru</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HR</td>
<td>Human Resources</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>JKUAT</td>
<td>Jomo Kenyatta University of Agriculture &amp; Technology</td>
</tr>
<tr>
<td>KAM</td>
<td>Kenya Association of Manufactures</td>
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<tr>
<td>KNBS</td>
<td>Kenya National Bureau of Statistics</td>
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<tr>
<td>KU</td>
<td>Kenyatta University</td>
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<tr>
<td>NACOSTI</td>
<td>National Council for Science, Technology, and Innovation</td>
</tr>
<tr>
<td>PEFA</td>
<td>Public Expenditure and Financial Accountability</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Packages for Social Sciences</td>
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<tr>
<td>TOC</td>
<td>Theory of Constraints</td>
</tr>
<tr>
<td>TQM</td>
<td>Total Quality Management</td>
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<td>USA</td>
<td>United States of America</td>
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OPERATIONAL DEFINITION OF TERMS

Activities identification Refers to the process of identifying and breaking down the firms into discrete activities for the purposes of assigning costs.

Activity-based costing Refers to the costing technique that assigns costs to specific activities and tasks based on their consumption of resources. It identifies and allocate costs to the activities that drive those costs.

Cost driver Cost driver is a cause which is direct to the cost and it affects the total cost. It is usually measured by determining the ratio of total overheads to overall or total cost drivers.

Cost Driver Selection Refers to the process of identifying and choosing the factors that determine the costs incurred by a firm.

Cost Objects Refers to the ultimate results of the activities carried out by a company. Costs objects are measured by determining the product cost and objects of cost units such as quantities of material, labour hours and machine hours.

Cost Object Determination Refers to the alignment of resources and activities and linking them to their cost objects.

Manufacturing companies Refers to business entities engaged in the production of goods by transforming raw materials into finished products.

Financial Performance Refers to the evaluation and assessment of a company's financial health and measurement of its results against its financial goals.

Resource management Resource management is the practice by which businesses handle their different resources effectively. The required resources are allocated to the right tasks.
ABSTRACT

Activity-based costing is vital in cost information analysis for financial decision making hence has a link to the net returns of a firm. However, Kenya’s manufacturing companies are experiencing undesirable financial performance as demonstrated by inadequate profits and slow growth in overall net returns. It is against this challenge that the researcher examined the effect of activity-based costing on financial performance of manufacturing companies listed on the Nairobi Securities Exchange. The specific objectives of the study included; to determine the effect of resource management, cost activities determination, cost driver selection and cost objects on financial performance of listed manufacturing companies. The study was anchored on theories comprising positive accounting theory, theory of constraints, and profit maximization theory. Survey research design was employed. The study’s target population comprised all the eight manufacturing companies listed on the Nairobi Securities Exchange while the unit of analysis was the managers. Census technique was employed and structured questionnaire was used in collection of data. Data analysis was done through descriptive and inferential statistical methods via aid of Statistical Packages for Social Sciences (SPSS) version 24. Descriptive findings established that activity based costing parameters; resource management, cost activities determination, cost driver selection and cost objects determination affected the financial performance of listed on the Nairobi Securities Exchange. Correlation analysis results revealed that all the variables had a significant relationship with financial performance. Therefore, activity-based costing affected financial performance. Regression analysis results indicated that the coefficient of determination was 0.723 thus activity-based costing accounted for 72.3% variation in financial performance. The study concluded that appropriate management of resources enables manufacturing firms to plan, schedule, forecast and optimize costs and returns. Use of activity-based costing is a great way of managing the resources of manufacturing companies and promoting financial performance. It is also concluded that cost driver selection has a great relevance on the management of costs and enhancement of the Returns on Assets (ROA) for listed manufacturing companies. The study recommends that a comprehensive implementation guidelines and principles for adopting activity-based costing should be developed. Manufacturing companies should intensify the utilization of activity-based costing in the management of resources. It is also recommended that cost driver selection as part of activity-based costing should be integrated into the financial plans of listed manufacturing companies. This integration will lead to cost minimization and optimization of returns.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study
Manufacturing sector is a key pillar of economic growth and development (Dunay, Ayalew, & Abdissa, 2021). It has been pursued to enhance economic diversification, export promotion, and provision of employment. The manufacturing sector contributes significantly to job creation thereby increasing the overall employment that promotes economic stability. According to Chaurey, Kalpande, Gupta, and Toke (2023), manufacturing firms' financial performance provides insight into their overall financial performance. As such, higher levels of financial performance imply effective management of costs and competitiveness in the operating environment. Investment attraction and financing for manufacturing firms depend on financial performance trends (Lin & Guan, 2023). For instance, the lenders and the investors commit capital to the manufacturing firm based on the evaluation of financial health and performance.

Financial performance as indicated by consistent profits and stable margins enhances a manufacturing firm's ability to meet expenses, invest in growth and expansion, and increase net earnings (Chege, Wang, & Suntu, 2020). The financial performance also informs the long-term viability of the industry. However, the manufacturing sector, particularly in Sub-Saharan Africa is burdened by high production costs that lead to reduced net earnings and competitiveness for the manufacturers. Manufacturers also grapple with inefficient production processes that limit net earnings and overall financial performance (Nduati, 2020). Manufacturing firms also have significant problems in terms of illiquidity as they face difficulties to generate sufficient cash flow to meet short-term financial requirements and obligations.

Manufacturing firms lack robustness in financial planning and forecasting and thus cannot predict future cash flows, assess potential risks, and make sound financial decisions that contribute to poor financial performance (Macharia, Gathiaka, & Ngui (2022). Moreover, improper cost management practices have eroded manufacturing firms' performance. The aforesaid firms are associated with inefficiency in the use of resources, waste, cost of raw materials, and supply chain inefficiency (Ncube, Matsika, Mangori, & Ulgiati (2021). Cost inefficiency deter manufacturing firms from generating sufficient returns thereby hindering effective financial performance.
Manufacturing industry’s financial performance is usually impacted by cost management parameters and pricing aspects which present significant challenges to industry participants (Wagana & Karanja, 2017). These challenges majorly include the management of inventory costs, capital equipment costs, profit management, and cash flow problems. In Kenya, stock/inventory forecasting remains a major concern for manufacturers (Audax, 2018). Idle inventory inevitably ties up cash and increases the inventory costs to the companies. Efficient inventory management depend on ideal levels of inventories in terms of right quantities at the right to avoid unnecessary carrying costs/storage costs. Keinan and Karugu (2018) further noted that manufacturers are also grappling with over-investment capacity in capital assets.

Investment in factory equipment has been necessitated by need for increased production in expectation of huge demands (Audax, 2018). However, the expected huge demand turns to be low against the expectations thus manufacturers are left to incur huge operational and maintenance costs of the equipment without corresponding returns. These costs have contributed to significant cash flow problems and eventually inadequate financial performance. Moreover, Kenyan manufacturers have been forced by difficult economic circumstances into allowing their customers long-term payment terms (Keinan & Karugu, 2018). This has been intended to promote and maintain good customer relationship but has contributed to inadequate cash flows thus troubling the operations of the manufacturing companies. Kenya’s manufacturing industry has been a very high-volume enterprise with profit margins that are below their potential (Mutunga & Owino, 2017). Being a competitive industry, there exist pricing pressure that keeps the profit margins low. Competition against the products imported from more efficient countries has proved difficult hence cost management remains a major concern to the manufacturing firms (Keinan & Karugu, 2018).

Kenya’s manufacturing sector is working towards achieving 15% of the GDP contribution of the sector, by the year 2022 according to Kenya Association of Manufactures (KAM, 2018). However, the sector has faced significant performance challenges. For instance, in 2014, Eveready East Africa, a Nakuru-based manufacturing facility announced the closure of its operations due to low production capacity among other reasons. In the results released in September 2013, their sales from the previous year which was $784,783 had dropped to $493,237 a decrease of approximately 58.7%. The company’s production
capacity, which used to be around 180 million annually, had dropped to 50 million units (Kihara, 2016).

According to the Kenya Association of Manufacturers (KAM, 2018), there were 52 textile mills which were integrated and specialized in yarning and production of textiles before the industry declined in the early 1990s. As per registrar of industries, there were more 110 large manufacturers specializing in textile. Currently, out of the 52 companies manufacturing rope mills, only 15 are operational with an installed capacity of just 40-50%. Cost management is critical in financial performance of manufacturing firms. Therefore, it is highly critical for manufacturing companies to be efficient through effective management of capital equipment and appropriate application of activity-based costing.

Listed manufacturing companies have recently experienced decline in financial performance. British American Tobacco (BAT) 2020 annual report and financial statements indicated that revenues reduced by 2% between year 2019 and 2020. This was indicated by decline from Kshs.39.8b in 2019 to Kshs.38.8b in 2020. Moreover, the net cash generated from operations declined from 10.3b to 7.4b in the same period. The raw materials and manufacturing costs increased from Kshs.10.7 to Kshs.11.3b. East Africa Breweries Limited’s 2021 integrated report and financial statements showed that profits declined from Kshs.7.02b in 2020 to Kshs.6.96b in 2021. The cost of sales increased from Kshs.41.8b to Kshs.48.5b in the same period. Furthermore, profits of Kenya Orchards Plc reduced by 9.92% between year 2020 and 2021.

1.1.1 Activity Based Costing and Financial Performance

Activity-based costing (ABC) assigns operational costs and overheads in working out the cost of all the activities required in the production process (Barros & Da-Costa, 2017). ABC recognizes the relationship between material costs, labor costs, overheads and products thereby aiding the assigning of indirect costs in an effective manner. Barasa, Vermeulen, Knoben, Kinyanjui, and Kimuyu (2019) noted that Activity based costing comprises the elements of resource management, cost activities identification, cost driver selection and cost object determination. Effective management of financial resources is imperative for manufacturing companies since they are their high-priced investments (Zamrud & Abu, 2020). Activity based costing incorporates resource management contribute significantly to enhancement of overall efficiency and companies’ financial
performance. As such, the key elements of resource management; resource scheduling, resource forecasting and planning determines the levels of company’s net returns. According to Alsayegh (2020) manufacturing firms utilize cost-effective resources from low-cost scales to achieve optimal profits. Allocation of the right resources for the right activities enables manufacturing firms to control costs and maximize returns (Vetchagool, Augustyn, & Tayles, 2021).

Based on the operation of activity-based costing, costs are allocated and assigned to activities and not to products thus identification of such activities is vitally important (Jassem, 2019). Identification of cost activities lead to accurate allocation of resources and overhead costs in manufacturing firms. According to Kabinlapat and Sutthachai (2017) cost drivers trigger variations in activity costs and influence the overall financial performance of a company. Cost drivers, particularly the direct labour hours as well as machine hours are employed to attain overhead costs’ minimization. Khalaf (2019) opined that cost object determination is a crucial part of the product pricing process. Manufacturing companies assigns costs to the final product or service to come up with the total cost and appropriate pricing (Barros & Da-Costa, 2017). Costs objects are applied finding the overall cost, determination of profitability and price of the products. Therefore, they help in managing and controlling costs for sustainable financial performance.

Manufacturing companies’ managers have interest in understanding the position of the organization from a financial performance standpoint (Jassem, 2019). Financial performance describes the company’s overall fiscal health in regard to revenue growth, cash flow management and cost control (Vetchagool et al, 2021). The sensitivity of the manufacturing sector makes it necessary for the managers to build and maintain confidence to the consumer. This confidence is partly built through upward trends of financial performance. According to Tang et al (2018) ABC technique identifies accurate drivers of cost and overhead costs which streamlines the business processes to increase the overall financial performance of the company. Managers identify the performance of different products after allocation of direct and indirect costs thus the most efficient and profitable activities are prioritized in relation to allocation of resources. As such, manufacturing companies are able manage manufacturing processes to improve efficiency and quality of products through ABC technique (Zamrud & Abu, 2020). This enables them to establish accurate pricing of products while maximizing earnings for sustainable
financial performance. In the context of the current study, financial performance was measured using the return on assets of the listed manufacturing firms.
1.2 Statement of the Problem

Manufacturing companies are responsible for a significant share of Kenyan economic production and contribute to an estimate of 7.2% to the Gross Domestic Product according to Kenya Bureau of Statistics (KNBS, 2022). However, the contribution of manufacturing sector towards the GDP has been declining with an average of 3% annually. Wangui (2019) noted that manufacturing companies in Kenya are not able to achieve desired financial performance due to inability to operate optimally. They are not able to attain optimization as they are still using the outdated costing systems in their activities. Wangui (2019) further contended that only 11% of manufacturers are fully automated and use ABC system. 83% of the manufacturers are semi-automated and also apply ABC system partially. Performance of manufacturing companies mostly depend on effective management of cost and efficiency. Therefore, the current need for effective activity-based costing by manufacturing companies in Kenya cannot be overemphasized. Cost parameters are relatively important in manufacturing companies and a link exist between utilization of activity-based costing and return on assets. However, there is scanty information pertaining to the relationship between activity based costing and financial performance of manufacturing companies in the previous research works. For instance, Oranefo (2022) examined the effect of activity-based costing on performance of manufacturing organizations in Nigeria. Findings indicated that the application of ABC method significantly influenced the level of inventory management in production firms. Madwe, Stainbank, and Green (2020) assessed the factors affecting the adoption of activity-based costing at technical and vocational education and training colleges in KwaZulu-Natal, South Africa. Results showed that implementation of ABC is affected by lack of top management support, and the cost structure. Audax (2018) conducted a study on factors affecting financial performance of Kenya’s listed manufacturing firms. The study findings revealed that leverage, firm size and liquidity affects financial performance of manufacturing firms. Keta (2022) evaluated the effects of activity-based costing as aspect of inventory management practice on supply chain performance of Homa Bay County teaching and referral hospital. Findings revealed that activity-based costing inventory practice had a positive and significant effect on supply chain performance. The constructs of activity-based costing have not been discussed adequately in the previous studies. The present study examined the effect of activity-based costing on financial performance of manufacturing companies listed on the Nairobi Securities Exchange.
1.3 Objectives of the Study
The study was guided by general objective and specific objectives.

1.3.1 General Objective of the Study
The general objective of the study was to examine the effect of activity-based costing on financial performance of manufacturing companies listed on the Nairobi Securities Exchange.

1.3.2 Specific Objectives of the Study
i. To determine the effect of resource management on financial performance of manufacturing companies listed on the Nairobi Securities Exchange.

ii. To determine the effect of activities identification on financial performance of manufacturing companies listed on the Nairobi Securities Exchange.

iii. To establish the effect of cost driver selection on financial performance of manufacturing companies listed on the Nairobi Securities Exchange.

iv. To establish the effect of cost object determination on financial performance of manufacturing companies listed on the Nairobi Securities Exchange.

1.4 Hypotheses of the Study

H\textsubscript{01}: Resource management has no significant effect on financial performance of manufacturing companies listed on the Nairobi Securities Exchange.

H\textsubscript{02}: Cost activities identification has no significant effect on financial performance of manufacturing companies listed on the Nairobi Securities Exchange.

H\textsubscript{03}: Cost driver selection has no significant effect on financial performance of manufacturing companies listed on the Nairobi Securities Exchange.

H\textsubscript{04}: Cost object determination has no significant effect on financial performance of manufacturing companies listed on the Nairobi Securities Exchange.

1.5 Significance of the Study
The study will be beneficial to the manufacturing companies, government and other researchers.

1.5.1 Manufacturing Companies
The current study will provide manufacturing companies with information that guide on adoption of activity-based costing. This will improve the process of assigning costs to products identifying the specific activities and processes involved in their production.
1.5.2 Government
The current study will guide government in establishing and implementing policies that affect the operations of manufacturing firms.

1.5.3 Other Researchers
It will help to increase of the know-how of activity based costing technique and its effect on performance of manufacturing companies and will act as a benchmark for future researchers and scholars interested in similar studies.

1.6 Scope of the Study
The examined the relationship between activity based costing and financial performance of the eight manufacturing companies listed on the Nairobi Securities Exchange. Manufacturing companies listed on the Nairobi Securities Exchange were chosen since they publish their financial statements, which is important in analysis of financial performance. The variables under study were resource management, activities identification, cost driver selection, cost object determination, and financial performance. The study was conducted from from July to October, 2022.

1.7 Limitations of the Study
The researcher experienced challenges such as respondents’ reluctance to provide information. This limitation was addressed by first elaborating the purpose of the research and its academic value to the respondents. The instruments were designed in such a manner that they could be conveniently administered to the respondents. Also, different firms have different challenges hence it was difficult to directly establish a clear pattern of similar solutions and problems across the entire globe.

1.8 Organization of the Study
The present study consisted of five chapters. Chapter one outline the introduction containing the background of the study, problem statement, research objectives, hypotheses, significance, scope and limitations. Chapter two outline literature review comprising theoretical review, discussion on activity based costing, empirical review, research gaps and conceptual framework. The research methodology was covered in chapter three and included target population, research design, methods of data collection and analysis. have been outlined. Chapter four include the key findings and their discussions. Finally, chapter five outline the summary, conclusions, recommendations and suggestions for further research.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction
This chapter captures evaluation of literature on activity based costing and its effect on financial performance of manufacturing companies listed on the Nairobi Securities Exchange. The chapter incorporates the theoretical review, empirical review, research gaps, discussion on parameters of activity based costing, and conceptual framework.

2.2 Theoretical Review
This section outlines the theories that are related to activity based costing and financial performance. They include: positive accounting theory, theory of constraints and profit maximization theory.

2.2.1 Positive Accounting Theory
Positive accounting theory was propounded by Watts and Zimmerman in 1978. Positive accounting theory explains the actual accounting standard’ choices. The foundation of this theory is the exploration of determinants of management’s attitudes towards standards of accounting. These factors comprise plans of management compensation, bookkeeping based costs, taxes, and accounting regulations and influence the companies’ cashflows. Sari (2020) reviewed the positive accounting theory in establishing the relationship between financial distress and opportunities for firm growth on accounting conservatism among manufacturing companies. Adjustments and the changes in accounting standards affect the earnings of firms, particularly, the large firms (Kaya, 2017).

Positive accounting theory predicts the managerial choices based on the accounting policies’ choices (Osho & Ayorinde, 2018). They act and conduct themselves in a way that will lead to maximum benefits. However, the interests of the organization are prioritized more than those of the shareholders. As such, the managerial choices in regard to accounting are highly dependent on the nature of the industry that they operate in and the factors affecting the same industry (Sari, 2020). For instance, the organization’s contracts with stakeholders like suppliers, creditors, and employees are vital to their operations and financial performance. Positive accounting theory also contends that the costs associated with contracts should be kept at minimum levels so as to attain and improve net returns on a continuous and consistent basis (Srivastava & Baag, 2019).
Furthermore, PAT suggests that managers should be flexible in choosing the accounting policies that bring financial benefits to them (Kaya, 2017). In this sense, the accounting policies ought to have minimum costs and flexibility thus can be easily changed to conform to the needs of the dynamic business environment. According to Osho and Ayorinde (2018) this approach is built on bonus plan, political cost and debt covenant hypotheses. Bonus plan hypothesis states that organizational managers prefer accounting policies that shifts future accepted earnings to the current period. This implies reporting of high income that contribute to maximized personal compensations in terms of incentives and bonuses. The political cost hypothesis states that managers defer the current reported earnings from current periods to future periods under conditions of high political cost (Sari, 2020). High levels of earnings attract the attention of the public and the media which leads to intensified regulations on the firm and increase in taxes. Increase in taxes increases cost to the firm, reduces the net returns and financial performance. Managers prefer employing accounting policies that shift future earnings to current periods since probability of technical default on the debts are reduced by reported higher net earnings (Srivastava & Baag, 2020). Positive accounting theory relates to the study since the goal of activity based costing is to reduce operational costs and maximize returns for better financial performance. The theory is specifically applicable to resource management, cost activities identification, cost driver selection and cost object determination variables of the study.

2.2.2 Theory of Constraints

Theory of Constraints was developed by Eliyahu Goldratt in 1984. Theory of Constraints (TOC) focuses on the identification of activities that consume resources and create bottlenecks in processes (Gupta, Digalwar, Gupta, & Goyal, 2022). Therefore, integration of TOC with ABC help manufacturing companies to identify the activities that drive costs and affect the overall efficiency. Theory of constraints suggests that manufacturing companies should lay emphasis on managing and optimizing the constraints in their production processes to improve the performance (McCleskey, 2020). TOC enhances the understanding the costs associated with each activity and this enable managers to make sound decisions on resource allocation to alleviate bottlenecks and enhance efficiency. Additionally, theory of constraints emphasizes the significance of cost optimization in constrained production processes (Gupta et al., 2022). It guides on identification of non-value-added activities with excessive costs that contribute to constraints. This insight
enables managers to eliminate such activities, thereby improving efficiency and financial performance.

**2.2.3 Profit Maximization Theory**
Profit maximization theory was propounded by William Baumol in 1962. Profit maximization theory posits that firms aim to maximize profits as the main goal. Based on the theory, the firm’s financial performance is closely linked to the ability to generate adequate returns, control costs, and optimize the allocation of resources to maximize profits (Raucci, Lepore, & Sabatiello, 2020). When manufacturing companies increase their returns consistently, they enhance the profitability and the financial performance at large. Profit maximization theory describes the significance of resource allocation optimization for the purposes of attaining the financial performance goals.

According to Susilo, Wahyudi, and Demi-Pangestuti (2020) efficient utilization of financial resources contribute to improved financial performance through waste minimization and productivity enhancement. The theory contends that firms strive to manage and minimize costs to improve profit margins. This encompasses control of expenses regarding production, materials, overheads, and other costs. Profit maximization theory guides activity based theory by explaining resource management and cost control. It also explains profit maximization and financial performance, which is the response variable of the study.

**2.3 Activity Based Costing**

**2.3.1 Resource Management and Financial Performance**
Resource management entails acquisition, allocation and planning for resources in a company (Yong, Yusliza, Sehnem, & Mani, 2020). Organizational resources comprise financial, physical, human, technology and intellectual resources. They can further be categorized into Firm resources include land, machinery, personnel (from senior management and personnel capacity and knowledge), as well as the capital (tangible, intangible and organizational), where these groups can be categorized by the near-problem utility (Chouhan, Soral, & Chandra, 2017). Intangible resources are those assets that the firm legally owns, and include confidential data, intellectual property rights and contracts. Reputation is among other intangible resources and we would like to focus on it. There are different reputation types, for example, reputation and customers with branding and brand ownership; customer relationships-built reputation; the company's reliability and quality of
its products or services reputation; the firm and suppliers’ reputation (comprising banks, suppliers and sponsors, staffs, and probable staffs) and government and communities’ reputation (Yang et al, 2020).

Financial resources are external finances and the allocation of its internal financial resources aimed at maximizing investment (Marinho-Neto, Agostinho, Almeida, Moreno-García, & Giannetti, 2018). Location (buildings and land), size, modern technology, stock of materials, equipment and plant comprise the physical resources. Organization resources are the policies of the firm in planning, reporting and communicating relationships between the company and relationships with other firms and the larger community (Essel, Adams & Amankwah, 2019) and contributing to their development and growth (Marinho-Neto et al, 2018). Organizational strengths such as staff skills, people and processes also contribute to organizational performance. Such resources include organizational planning, organizational structure, organizational culture, networking and control systems, building networks, stakeholder relationships with customers and reputation (Nganga, Waiganjo, &Njeru, 2019).

An appropriate management of resources lead to effective use of resources, cost reduction and optimal returns for the company (Chouhan et al, 2017). Effective use of limited resources depends on the resource demands planning and reporting effectiveness. These involves procedures and processes standardization whose aim is to minimize wastages and unnecessary expenses. Resource management is therefore important part of activity based costing that improves financial performance of companies (Schrijvers, Hool, Blengini, Chen, Dewulf, Eggert, & Wäger, 2020). Resources are managed through allocation, aggregation and scheduling methods. Resource management through allocation process involve identification of resources required in particular tasks or works in an organization, for instance, the quantity of materials needed in production of products (Hassan, Zailani, & Hasan, 2019). Activity based costing advocates for establishment of proper standard quantities and prices. Companies are able to cut costs when actual quantities and actual prices are below the standard levels. This leads to improved financial performance.

Resource aggregation involve gathering of resources, describing their structure and fitting them together in a coherent manner (Obi, Slay, & Bass, 2020). Resource scheduling involve processes of efficient allocation of resources to various activities according to availability, time and production capacity. Resource scheduling incorporates decisions
based on time-constrained dimension and resource-constrained dimension. Resource-constrained dimension focuses on scarcity and limited capacity of resources hence cost control and avoidance of wastages are of great essence and promote financial performance (Hassan, Zailani, & Hasan, 2019).

2.3.2 Activities Identification and Financial Performance
Zamrud and Abu (2020) noted that the ABC's system of costing focuses on priorities to identify activities done by the resources of the organization. It then tracks the resources’ cost to the operations, concluding with the total cost of carrying out each of the functions of organizational support. Kabinlapat and Sutthachai (2017) advises that in choosing a work foundation, the goal is to choose a different input to a pattern that is very similar to a pattern where the divine costs vary.

Understanding of product/customer benefits and accurate product prices for decision-making remain a well-known reason for launching ABC (Khalaf, 2019). Unit-level tasks are activities related to the tasks done with each performed unit. These processes are variable or direct costs, as operations are performed when a single product is manufactured only. Group-level operations are only possible if a group of product groups are created differently for each product (Kabinlapat & Sutthachai, 2017). While the work is actually a flexible activity that occurs every time a product is made, it is a fixed cost per product. Batch-level operations with set costs and sales orders for each process of production are examples.

Product-level operations occur where product lines include activities where costs are composed (Tang et al., 2018). These activities are in product line development or support activities and do not take place in the production phase. In the department of planning, each engineer can be given the task of focusing on improving the family of a particular product or changing the construction debt (Keinan & Karugu, 2018). Every time any product-related work is done by an engineer; they are considered as productive activities. Plant level activities are related to the organizational support functions. These activities’ associated costs are fixed, because they are not affected by volume of production (Wegmann, 2019).

2.3.3 Cost Driver Selection and Financial Performance
Cost drivers derive expenses and forms the basis for allocating costs in different sections or departments of manufacturing companies (Roca, Vaishnav, Laureijs, Mendonça,
Fuchs, 2019). Therefore, cost drivers are determinants of activities leading to costs and cost behaviors. According to Plotkin, Robinson, Cunningham, Iqbal, and Larsen (2017) cost driver selection involve identification of activities from where costs are incurred. Additionally, the cost driver explains the cause-effect relationship between the total cost of production and the level of activity. Types of activities performed in a manufacturing company determines the cost drivers and the total cost (Drury, 2018). The main types of cost drivers include material inputs, labour hours and machine hours.

Following the identification of jobs, the next step in ABC's plans is to track the cost of labor in products by identifying the driver for each labor cost, calculating the driver's cost of labor, and using this standard to drive labor costs on products (Plotkin et al, 2017). They concluded that production cost center types used to pull together costs are increased by ABC programs. Instead of focusing solely on the organization or location of responsible institutions, ABC programs concentrate on the organizational resource’s actual performed activities (Drury, 2018).

Products that indirectly cause a large amount of overhead costs should also require a high cost driver cost, and vice versa (Sellitto, Murakami, Butturi, Marinelli, Kadel, & Rimini, 2021). In cases where cost sharing is low, the cost involved should be lower. Therefore, there should be an association between the occurrence of higher costs and a cost driver use. Drivers estimate costs associated with each job. Each time a project is completed, costs are suffered, and the cost is allotted to the project. Cost drivers ’examples are the sales orders numbers (batch rate) and gas used up (level-unit) (Yadav, Luthra, Huisingh, Mangla, Narkhede, & Liu, 2020). These drivers are first-class drivers and the tracking cost in cost pools or cost centers. Second-class drivers greatly affect ABC accuracy and are drivers that are cost-effective to allocate cost centers to products or costs from cost pools (Vogel & Lasch, 2016).

2.3.4 Cost Object Determination and Financial Performance
Cost objects assigns costs to all items where costs have been incurred in manufacturing companies (Drury, 2018). The inability to trace some costs of producing, designing, and distributing to the final product deters effective production planning to some extent. As such, cost objects determination is important in cost analysis and planning. The costs objects comprise all the material, labour and overhead cost. Zhang, Bai, Winiwarter, Ledgard, Luo, Liu, and Ma (2019) asserted that analysis of cost objects guide the
allocation of both direct and indirect costs which are determined through apportionment. The products and services as outputs are most visible cost objects and forms the basis for price establishments and profitability analysis (Setti, Junior, & Estorilio, 2021).

Organizational operations play a major role in identifying the cost objects in manufacturing companies (Drury, 2018). The functional areas; departments, sections such as production guide in tracking of costs like product costs, service costs, introduction of new products among others. Zhang et al (2019) opined that business relations with stakeholder contribute to costs hence such relationships are cost objects subject to analysis. Manufacturing companies employ effective cost apportionment practices to identify source and justifying expenses. This help in keeping track of costs and identifying areas of cost cutting with aim of maximizing returns. Cost apportionment is further necessary in budgeting of organizational resources and financial reporting purposes (Prado, Glaspie, Waymire, & Laurin, 2020).

Collected expenses need to be allocated to the cost-effective item using the selected process (Roca et al, 2019). There are two methods of pricing items in manufacturing companies are directly cost-effective and indirectly cost-effective. Under direct costs, only those production costs that directly differ from the work are considered to be the cost of the product (Tran & Thao, 2020). These costs include direct, personnel, and flexible component of over-production. All production costs are costed as product costs by absolute absorption, whether they are naturally adjusted or variable (Tran & Thao, 2020). If there is a cost to be distinguished between multiple cost items, and there is no causal or mathematical relationship to make this difference, the division of such costs is the assignment.

According to Drury (2018), in order to effectively and efficiently share indirect costs, it is required to categorize and classify costs as indirect or indirect first, called cost reservoirs. When indirect costs are grouped together into natural resource reservoirs, and depending on their limited contribution to specific cost aims, the next phase is to allot these costs properly using a technique that is acceptable. Expenditure allocation is a three-step process of selecting cost items, combining costs that are more closely related and deciding on the bases of cost to link the aims to the combined costs (Yadav et al, 2020).
2.3.5 Financial Performance of Listed Manufacturing Companies

Financial performance is crucially important as it evaluates the organization’s overall standing in terms of assets, liabilities, equity, debts, revenues and profitability (Shabbir & Wisdom, 2020). Short-term and long-term forecasting and growth prospects of manufacturing companies depend financial performance results. An evaluation system for good financial performance uses metrics over which they can be controlled by the manager, provides consistent and timely response, matches the measures to standards set, has measures that are both short- and long-term, and equally considers the business goals and individuals’ (Graybeal, Franklin & Cooper, 2019).

According to MRP Easy (2019), a variety of factors can measure the organizational performance such as the cost of producing each unit. To calculate this, the total number of units produced is divided by their cost of production, not including capital expenditure.

How well the existing resources are being used is shown by the number, even if the cost of using staff and resources is on track (Alsoba, Ghazzawi, & Joudeh, 2015). Another metric is the rest time equal to the working time which is determined as the ratio between the time production lines is set by the time at which they work (Gehinger, 2021). This measure is a direct indication of the availability of goods in production. Efficient production equipment is used in decreasing numbers. The production line is suspended for half an hour if the ratio is 0.5.

Capacity utilization is yet another alternative metric that depicts the manufacturing facility rate in using its capacity of production (Sunday, Ogbuu, & Igwe, 2018). It indicates if its capacity of production is used successfully or not. The actual output’s relationship is what is really manufactured with embedded machines and the same equipment can produce the highest output. Inventory control is also important as additional innovation means tying important financial and physical resources (Effiong & Akpan, 2019). The higher the rate of return of inventory, then the better and the more productive is the supply chain. The level of revenue can be calculated as the amount of material used does not move from storage to production (Reynolds & Van der Poll, 2015).

2.4 Empirical Review

2.4.1 Resource Management

Njue (2014) sought to establish the relationship between overhead allocation techniques and financial performance of manufacturing companies. Results show that manufacturing
companies’ financial performance is predictable from variations techniques of overhead allocation. The $R^2 = 0.830$ implied that techniques of overhead allocation explained 83% of variation in manufacturing companies’ financial performance. The study also indicated that financial performance is influenced by application ABC system, step down and reciprocal allocation techniques. Research by Njue (2014) describes activity based costing as a technique of allocating overheads. Its elements have not been adequately explained to fully establish its effect on manufacturing companies’ financial performance. Moreover, the concept of resource management in relation to activity based costing was not discussed. Pham, Nguyen, Doan, Ta, & Pham (2021) researched on the influence of activity-based costing implementation on firm performance. Findings showed that effective implementation of ABC system depended on environmental uncertainty and market orientation. Performance of manufacturing firms is determined by effective implementation of activity based system.

2.4.2 Activities Identification

Asikogu, Mithiria, and Omurwa (2021) examined the association between management accounting techniques and firm performance of major construction companies in Nigeria. Findings revealed that budgeting practices, strategic analysis and activity based costing system affect firm performance. However, firm size and financial leverage affected return on assets negatively. The element of activity based costing system was scantly explained and the component of activities identification did not come out clearly.

2.4.3 Cost Driver Selection
Reynolds and Van-der Poll (2015) investigated the implementation of Nelson Mandela’s Bay Metropole ABC in South Africa. Findings established that wide cost drivers’ selection is beneficial to the point that the product and the high cost lose their relationship.

Waihenya (2018) conducted a study on the effects of managerial accounting practices on financial performance. The results revealed that activity based costing has a significant effect on financial performance. ABC specifically provided budgeting and benchmarking insights for the manufacturing companies. Moreover, ABC system enabled companies to allocate resources to activities and products that more profitable thus enhanced financial performance. The research by Waihenya (2018) employed standard costing, lifecycle
costing and target costing as key parameters for activity based costing. However, the study did not address the aspect of cost drivers and how they affect manufacturing firms’ performance. Audax (2018) examined the factors affecting financial performance of Kenya’s listed manufacturing firms. Findings revealed that leverage, firm size and liquidity affects financial performance of manufacturing firms. The above variables have not been linked to cost driver selection.

2.4.4 Cost Object Determination
Alsoboa, Ghazzawi, and Joudeh (2015) researched on the effect of strategic costing methods on the Jordanian listed manufacturing companies’ performance. The three descriptive variables, ABC, COQ and TC have a statistically important influence on the total JLMC Performance, market performance and financial performance. Further descriptive variables, adjective pronouns, VCC, and LCC did not have a statistically important influence on the stated JLMC operations categories.
Keta (2022) evaluated the effects of activity based costing as aspect of inventory management practice on supply chain performance of Homa Bay County teaching and referral hospital. Findings revealed that activity based costing inventory practice had a positive and significant effect on supply chain performance. Oranefo (2022) conducted a study on the effect of activity based costing on performance of manufacturing organizations in Nigeria. Results indicated that the application of ABC method significantly influenced the level of inventory management in production firms. Madwe, Stainbank, and Green (2020) investigated the factors affecting the adoption of activity-based costing at technical and vocational education and training colleges in KwaZulu-Natal, South Africa. The findings showed that implementation of ABC is affected by lack of top management support, and the cost structure. Keta (2022); Orafeno (2022) and madwe et al (2020) focused on activity based costing but their research works did address the aspect of cost object determination adequately.
Table 2.1: Summary and Research Gaps

<table>
<thead>
<tr>
<th>Author &amp; Year</th>
<th>Title</th>
<th>Findings</th>
<th>Research Gaps</th>
<th>Areas for Further Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reynolds and Van-der Poll (2015).</td>
<td>Implementation of Nelson Mandela’s Bay Metropole ABC: How far should manufacturing organizations go?</td>
<td>The wide cost drivers selection is beneficial to the point that the product and the high cost lose their relationship. Thinking of ABC’s more indirect heads is not always beneficial to the production organization unless there is a clear connection of the final</td>
<td>This study looked at cost driver selection but did not investigate the other variables resource management, activities identification, and cost object determination.</td>
<td>The researcher investigated the effect of ABC system’s constructs on financial performance.</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Summary</td>
<td>Notes</td>
<td></td>
</tr>
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<td></td>
</tr>
<tr>
<td>Effiong, and Akpan (2019).</td>
<td>How Productivity of Manufacturing Company is affected by Activity Based Costing (ABC).</td>
<td>The results showed that ABC technique considerably affect the production process efficiency positively. Categorically, rather than assigning overhead on one variable basis, like direct labor, ABC successfully uses numerous cost drivers for presenting a basis for overhead costs allocation that is more accurate.</td>
<td>This study looked at cost drivers but did not investigate the other variables such as resource management, activities identification, and cost object determination.</td>
<td></td>
</tr>
<tr>
<td>Wasike, Onsiro, Mindila, and Mwiti (2017)</td>
<td>Evaluation of activity based cost analysis as a tool on financial performance in selected public sugar firms in Kenya.</td>
<td>The relationship between activity based costing and financial performance is insignificant. Activity Based Costing analysis is partially applied by public</td>
<td>The research revealed insignificant relation between ABC analysis and performance. Only the sugar manufacturing firms were part of the study.</td>
<td></td>
</tr>
</tbody>
</table>

“The present study focused on financial performance rather than manufacturing companies’ productivity.”
<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
<th>Findings</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asikogu, M’Ithiria, and Omurwa (2021)</td>
<td>Management Accounting Techniques and Firm Performance of Major Construction Companies in Nigeria.</td>
<td>Findings revealed that budgeting practices, strategic analysis and activity based costing system affect firm performance.</td>
<td>The element of activity based costing system was scantly explained and the component of activities identification did not come out clearly.</td>
</tr>
<tr>
<td>Alsoboa, Ghazzawi, and Joudeh (2015)</td>
<td>The effect of strategic costing methods on the Jordanian listed manufacturing companies’ performance.</td>
<td>The three descriptive variables, ABC, COQ and TC have a statistically important influence on the total JLMC Performance, market performance and financial performance. Further descriptive variables, adjective pronouns, VCC, and LCC did not have a statistically important influence on the stated</td>
<td>The study looked at strategic costing techniques including ABC but did not go into the specific variables that are currently under study.</td>
</tr>
</tbody>
</table>

The study took a specific rather than general approach to examining financial performance. The specific predictor variable was activity based costing.
| Study (2014) | The relationship between overhead allocation techniques and financial performance of manufacturing companies in Kenya. | Findings indicated that manufacturing companies’ financial performance is predictable from variations of techniques of overhead allocation. The $R^2 = 0.830$ implies that techniques of overhead allocation explained 83% of variation in manufacturing companies’ financial performance. | Research by Njue (2014) described activity based costing as a technique of allocating overheads. The concept of resource management in relation to activity based costing was not discussed. | Analysis of the effect of resource management as an element of activity based costing was covered in the current study. |
2.5 Conceptual Framework

Figure 2.1 illustrates conceptual framework depicting the association between independent variables and dependent variable. The independent variables include; Activity based costing parameters namely, resource management, activities identification, cost driver selection, and cost object determination. The dependent variable is the financial performance of listed manufacturing firms.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resource Management</strong></td>
<td><strong>Financial Performance</strong></td>
</tr>
<tr>
<td>• Resource allocation efficiency</td>
<td>• Return on Assets</td>
</tr>
<tr>
<td>• Resource Utilization Outcomes</td>
<td></td>
</tr>
<tr>
<td>• Resources Aggregation</td>
<td></td>
</tr>
<tr>
<td>• Resource Scheduling</td>
<td></td>
</tr>
<tr>
<td><strong>Activities Identification</strong></td>
<td></td>
</tr>
<tr>
<td>• Cost Centres</td>
<td></td>
</tr>
<tr>
<td>• Monitoring Activity Expenses</td>
<td></td>
</tr>
<tr>
<td>• Activity Change Control Systems</td>
<td></td>
</tr>
<tr>
<td><strong>Cost Driver Selection</strong></td>
<td></td>
</tr>
<tr>
<td>• Material Inputs</td>
<td></td>
</tr>
<tr>
<td>• Labour Hours</td>
<td></td>
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<tr>
<td>• Machine Hours</td>
<td></td>
</tr>
<tr>
<td>• Number of Set-ups</td>
<td></td>
</tr>
<tr>
<td><strong>Cost Object Determination</strong></td>
<td></td>
</tr>
<tr>
<td>• Products Line</td>
<td></td>
</tr>
<tr>
<td>• Cost Apportionment Practice.</td>
<td></td>
</tr>
<tr>
<td>• Cost Tracking System.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2.1: Conceptual Framework

Source: Author (2022)
Activity based costing enable manufacturing companies to identify specific activities and processes that consume resources. Effective resource management ensure optimal allocation of resources thereby minimizing waste and improving efficiency and financial performance. Therefore, there is a direct relationship between resource management and financial management. Activities identification determine the specific costs associated with each activity and this provides a better understanding of the true costs of producing goods and delivering services, leading to improved earnings. As such, there an expected direct relationship between activities identification and financial performance. There is a direct relationship between Cost driver selection and financial performance. Cost driver selection plays a crucial role in cost control and reduction efforts. By identifying the cost drivers that have a significant impact on overall costs, manufacturing companies can focus their cost management efforts on those drivers, increase efficiency and optimize returns. There is a direct relationship between cost object determination and financial performance. Cost object determination enhances financial performance by providing reliable cost information for decision-making.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
This section outlines the methodology that was employed in undertaking the current study. It covers the research design, target population, sampling procedures and sample size, data collection instruments, pilot study, data collection procedure, data analysis, ethical considerations and diagnostic tests.

3.2 Research Design
Research design is a framework that logically and coherently integrate the components of a research (Mishra & Alok, 2017). This integration addresses the research problem, ways of collecting data, measurement and analysis. The current study employed survey research design. Descriptive research design allows a researcher to describe the attributes of a population and provide a comprehensive account for each of the research item thus enhancing a deeper understanding of the research topic. This design aided collection of detailed information pertaining to activity based costing and listed manufacturing companies’ financial performance.

3.3 Target Population
The target population refers to a group of people or items from where the researcher intends to obtain data (Novikov & Novikov, 2019). Target population is the focal point of business research hence must possess the information that fits the research variables and the problem leading to undertaking of the study. The target population of this study comprised of the eight manufacturing firms listed in the NSE as at 31st December 2021. The unit of analysis was the 54 top managers comprising the finance managers, risk managers, accountants, inventory managers and operations managers as shown on Table 3.1.
Table 3.1: Target Population

<table>
<thead>
<tr>
<th>No.</th>
<th>Company</th>
<th>Number of Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>B.O.C Kenya Plc</td>
<td>7</td>
</tr>
<tr>
<td>2.</td>
<td>British American Tobacco Kenya Plc</td>
<td>9</td>
</tr>
<tr>
<td>3.</td>
<td>Carbacid Investments Plc</td>
<td>6</td>
</tr>
<tr>
<td>4.</td>
<td>East African Breweries Ltd</td>
<td>8</td>
</tr>
<tr>
<td>5.</td>
<td>Unga Group Ltd</td>
<td>6</td>
</tr>
<tr>
<td>6.</td>
<td>Eveready East Africa Ltd</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>Kenya Orchards Ltd</td>
<td>7</td>
</tr>
<tr>
<td>8.</td>
<td>Flame Tree Group Holdings Ltd</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>54</td>
</tr>
</tbody>
</table>

*Source: NSE (2021)*

3.4 Sampling Procedures and Sample Size
Sample refers to a subset of the population to be studied (Bell, Bryman, & Harley, 2018). Sample depicts a true representation of the population. Sampling process involve selection of people or items that possess population characteristics for the purpose of saving time and minimizing cost in research. The current study applied census technique where all the listed manufacturing companies participated in the study.

3.5 Data Collection Instruments
Data Collection Instrument is used to obtain data from respondents for analysis (Bell et al, 2018). In the present study, questionnaire was employed in collection of primary data. Closed questions were used and respondents were provided with a list of pre-determined answers from which to choose answers. According to Novikov and Novikov (2019) closed-ended questions are often selected in the survey research because of the ease of calculating the frequency of each response.

3.6 Pilot Study
Pilot study is a preliminary study undertaken to test the suitability of the instrument for data collection in preparation for the main study. A pilot study was conducted from 5 manufacturing companies operating in Kiambu County which included Bidco Africa Ltd, Devki Group, Kenya Nut Company, Kenpoly Manufacturers limited, and Chai Bora Limited. The purpose of the study was to determine the data collection instrument’s validity as well as its reliability.
3.6.1 Validity
Validity refers to the ability of data collection instrument to measure what it is intended to measure (Easterby-Smith, Jaspersen, Thorpe, & Valizade, 2021). It assesses the extent to which data collection measures what is designed to measure. Since validity cannot be established statistically, the researcher sought expert advice from the supervisor. The interest of the researcher was in assessing the views and opinions of the respondents (managers of manufacturing companies) on the statements (data items) in the questionnaire under each of the aforementioned study variable. The validity was determined by engaging the supervisor who had been assigned by the university (Kenyatta University). Eventually, after examining the content of the questionnaire, the supervisor agreed that the data items were properly stated in conformity to the study variables that they were intended to measure.

3.6.2 Reliability
Reliability determines the consistency of data collection instrument after different tests (Peterson, Arregle, & Martin, 2020). The study tested for internal consistency to check the research instruments’ reliability. The cronbach alpha was utilized in determination of reliability of the questionnaire. The threshold was $\alpha=0.7$. All the variables reached the threshold hence the questionnaire was reliable and suitable for data collection in the main study.

3.7 Data Collection Procedure
The researcher obtained approval before initiating the study itself in both legal and ethical considerations. This was done at Kenyatta University and NACOSTI. The researcher also sought permission of manufacturing companies’ management. The respondents were given the questionnaire to fill on their own time. Collection of questionnaires was done on a specific date stated by the respondent.

3.8 Data Analysis and Presentation
Data analysis entails the use of logical and systematic techniques to process and evaluate data (Peterson et al, 2020). The current study incorporated descriptive and inferential statistical methods of data analysis. Means and percentages were applied in descriptive data analysis while inferential analysis employed correlation and regression analysis methods. According to Easterby-Smith et al (2021) descriptive statistics allows easier visualization of the phenomenon under study and simpler interpretation of the data.
Inferential analysis statistics comprising the correlation coefficient, beta coefficients, standard errors, t-values and p-values established the relationship between predictors (activity based costing parameters) and response variable (manufacturing companies’ financial performance). Analysis was conducted through use of Statistical Packages for Social Sciences (SPSS) version 24 and tables were used in presentation of research results/findings. Multiple regression was assumed to hold;

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon \]

Where;

- \( Y \) = Financial Performance
- \( \beta_0 \) = Constant
- \( X_1 \) = Resource Management
- \( X_2 \) = Activities Identification
- \( X_3 \) = Cost Driver Selection
- \( X_4 \) = Cost Object Determination
- \( \beta_1, \beta_2, \beta_3, \beta_4 \) = Beta Coefficients
- \( \varepsilon \) = Error margin
3.8.1 Operationalization and Measurement of Study Variables

Table 3.2: Operationalization of Study Variables

<table>
<thead>
<tr>
<th>Study Variables</th>
<th>Selected Indicators</th>
<th>Measurement Scale</th>
</tr>
</thead>
</table>
| Resource Management    | • Resource allocation efficiency  
                        | • Resource Utilization Outcomes  
                        | • Resources Aggregation  
                        | • Resource Scheduling  | Ordinal |
| Cost Activities        | • Cost Centers  
                        | • Monitoring Activity Expenses  
                        | • Activity Change Control Systems  | Ordinal |
| Identification         |                                                                                   |                   |
| Cost Drivers Selection | • Material Inputs  
                        | • Labour Hours  
                        | • Machine Hours  
                        | • Number of Set-ups  | Ordinal |
| Cost Objects           | • Products Line  
                        | • Cost Apportionment Practice.  
                        | • Cost Tracking System.  | Ordinal |
| Financial Performance  | • Return on Assets  | Ordinal |

3.9 Diagnostic Tests

Diagnostic tests are undertaken to determine the suitability and dependability research data for analysis (Gunst & Mason, 2018). Before commencement of descriptive and inferential analysis, diagnostic tests comprising multicollinearity, normality, linearity, and homoscedasticity tests were conducted.
3.9.1 Multicollinearity Test
Multicollinearity is a situation of multiple correlations among the independent variables (Seo, Kim, & Kim, 2019). Statistical significance of the independent variables is undermined when they correlate as they are supposed to be independent. Multicollinearity problem leads to unreliable regression results. The current study employed the variance inflation factor in testing for multicollinearity. VIF values of between 1-10 mean insignificant correlations among predictors thus data has no multicollinearity problem (Wang & Lee, 2020).

3.9.2 Normality Test
Normality test determines whether the research data is normally distributed (Kadim, Sunardi, & Husain, 2020). A set of data that is normally distributed usually clusters around the mean with more occurrences than those far from the mean and its frequency distribution curve is bell-shaped. Normality test was conducted for the study to determine whether the data was well modeled for descriptive analysis. At 95% level of confidence, data is normally distributed if the p-value>0.05.

3.9.3 Linearity Test
Linearity test determines the linear relationship between the predictor variables and the response variable (Kadim et al., 2020). Linear relationship between predictors and dependent variable is a requirement as well as a major assumption of multiple regressions. The dependent variable’s expected value ought to be a straight line function each predictor variable (Jelito & Pitera, 2020). However, errors will occur if the data is non-additively or non-linearly related. This will compromise the regression results of the study due to extrapolation of the data. Linearity test was conducted since the study applied multiple regression model.Linear relationship exist when the p-value>0.05 at 95% level of confidence. Values below less than 0.05 implies extrapolation and non-linearity (Gunst & Mason, 2018).

3.9.4 Homoscedasticity Test
Homoscedasticity means that the residuals or error terms in a data are constant (Kadim et al., 2020). This suggests that the data set is consistent for regression analysis. Violation of homoscedasticity leads to heteroscedasticity problem. Heteroscedasticity problem occurs due to larger discrepancies between the largest observed values and the smallest observed
values of the data set. Heteroscedasticity leads covariance matrix’s inconsistency thus making hypotheses tests and regression coefficients invalid.

3.10 Ethical Considerations
Observing ethical considerations is very crucial in a research work. The researcher obtained data collection authorization letter from the University as well as NACOSTI Permit and were presented to the management of the manufacturing companies as a procedure of data collection. As such, information collected by the researcher is subject to confidentiality and the identity of the respondent would not be revealed.
CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction
This chapter outlines the descriptive and inferential findings and discussions on the activity based costing and its effect on financial performance of listed manufacturing companies in Kenya. The main elements of activity based costing which have been discussed include resource management, cost activities’ identification, cost driver selection and cost object determination. The chapter also outlines the response rate, pilot test results and diagnostic test results.

4.2 Response Rate
The researcher achieved a response rate of 72.2% since 39 out of 54 issued questionnaires were fully filled and returned. Mugenda and Mugenda (2012) noted that response rate of 70% and above is sufficient for a research study. Therefore, 72.2% was sufficient for the present study. Results on response rate are presented in Table 4.1.

Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Response</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of issued questionnaires</td>
<td>54</td>
</tr>
<tr>
<td>Fully filled and returned questionnaires</td>
<td>39</td>
</tr>
<tr>
<td>Unfilled and partially filled questionnaires</td>
<td>15</td>
</tr>
<tr>
<td>Response rate</td>
<td>72.2%</td>
</tr>
</tbody>
</table>

4.3 Pilot Study Results
Pilot study was conducted to determine the validity and reliability of the data collection instrument. A summary of the reliability testing results is presented in Table 4.2.

Table 4.2: Reliability Test Results

<table>
<thead>
<tr>
<th>Study Variable</th>
<th>Number of Test Items</th>
<th>Cronbach’s Alpha Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Management</td>
<td>5</td>
<td>0.774</td>
</tr>
<tr>
<td>Cost Activities</td>
<td>4</td>
<td>0.808</td>
</tr>
<tr>
<td>Identification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost Driver Selection</td>
<td>5</td>
<td>0.845</td>
</tr>
<tr>
<td>Cost Object Determination</td>
<td>4</td>
<td>0.762</td>
</tr>
<tr>
<td>Financial Performance</td>
<td>5</td>
<td>0.889</td>
</tr>
</tbody>
</table>
It is apparent from the results shown in Table 4.2 that resource management ($\alpha = 0.774$), cost activities identification ($\alpha = 0.808$), cost driver selection ($\alpha = 0.845$), cost object determination ($\alpha = 0.762$), and financial performance ($\alpha = 0.889$), had alpha values greater than the minimum acceptable Cronbach’s alpha value of 0.7. Therefore, it was concluded that the research questionnaire was reliable enough for use in the collection of data for the main study.

### 4.4 Diagnostic Tests Results

Diagnostic tests were undertaken to determine the suitability of research data for analysis. They included multicollinearity, normality, linearity, and homoscedasticity tests.

#### 4.4.1 Linearity Test

Linearity test was done to establish the linear relationship between each predictor and the response variable. The results of linearity tests are presented in Tables 4.3, 4.4, 4.5 and 4.6.

<table>
<thead>
<tr>
<th>Sum of Squares (Combined)</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td></td>
<td>Linearity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource Management</td>
<td></td>
<td>Deviation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td></td>
<td>Linear</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Within Groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.231</td>
<td>.353</td>
<td>.1889</td>
<td>.085</td>
</tr>
<tr>
<td></td>
<td>2.466</td>
<td>2.466</td>
<td>13.21</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>1.765</td>
<td>.160</td>
<td>.860</td>
<td>.587</td>
</tr>
<tr>
<td></td>
<td>4.852</td>
<td>.187</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.083</td>
<td>9.083</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Apparently, as shown in Table 4.3, there is a linear relationship between resource management and financial performance since the deviation from linearity was $0.587 > 0.05$. This implies that the expected values of financial performance are a straight-line function of the resource management parameter.
Table 4.4: Linearity between Cost Activities Identification and Financial Performance

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Combined)</td>
<td>3.310</td>
<td>10</td>
<td>.331</td>
<td>1.606</td>
<td>.156</td>
</tr>
<tr>
<td>Between Groups</td>
<td>1.155</td>
<td>1</td>
<td>1.155</td>
<td>5.603</td>
<td>.025</td>
</tr>
<tr>
<td>Financial Performance</td>
<td>2.155</td>
<td>9</td>
<td>.239</td>
<td>1.161</td>
<td>.356</td>
</tr>
<tr>
<td>Cost Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identification</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Groups</td>
<td>5.773</td>
<td>28</td>
<td>.206</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.083</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to the results shown in Table 4.4, the deviation from linearity was 0.356>0.05, a fact that signifies a linear relationship between the two variables (cost activities identification and financial performance).

Table 4.5: Linearity between Cost Driver Selection and Financial Performance

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Combined)</td>
<td>5.679</td>
<td>12</td>
<td>.473</td>
<td>3.615</td>
<td>.003</td>
</tr>
<tr>
<td>Between Groups</td>
<td>4.941</td>
<td>1</td>
<td>4.941</td>
<td>37.743</td>
<td>.000</td>
</tr>
<tr>
<td>Financial Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Cost Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selection</td>
<td>.738</td>
<td>11</td>
<td>.067</td>
<td>.513</td>
<td>.877</td>
</tr>
<tr>
<td>Within Groups</td>
<td>3.404</td>
<td>26</td>
<td>.131</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.083</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 4.5, there is a linear relationship between cost driver selection and financial performance since the deviation from linearity was 0.877>0.05. This implies that the expected values of financial performance are a straight-line function of the cost driver selection parameter.
Table 4.6: Linearity between Cost Object Determination Selection and Financial Performance

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Combined)</td>
<td>4.146</td>
<td>11</td>
<td>.377</td>
<td>2.062</td>
<td>.062</td>
</tr>
<tr>
<td>Between Groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Performance *</td>
<td>2.778</td>
<td>1</td>
<td>2.778</td>
<td>15.194</td>
<td>.001</td>
</tr>
<tr>
<td>Cost Object Determination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deviation from Linearity</td>
<td>1.368</td>
<td>10</td>
<td>.137</td>
<td>.748</td>
<td>.674</td>
</tr>
<tr>
<td>Within Groups</td>
<td>4.937</td>
<td>27</td>
<td>.183</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.083</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.6 illustrates the relationship between cost object determination and financial performance of manufacturing firms since the p-value for deviation from linearity was 0.674>0.05. This means that the expected values of performance are a straight-line function of the cost object determination. In conclusion, all the four independent variables (resource management, cost activities’ identification, cost driver selection and cost object determination) had a linear relationship with financial performance. Therefore, the assumption of linearity was inferred to be true.

4.4.2 Normality Test

Normality test was done to establish whether the research data was normally distributed. Normality test results are presented on Table 4.7.

Table 4.7: Tests of Normality

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Financial Performance</td>
<td>.115</td>
<td>39</td>
</tr>
</tbody>
</table>

*. This is a lower bound of the true significance.

<sup>a</sup> Lilliefors Significance Correction

The findings show the Shapiro-Wilk test with p-value of 0.215 which is greater than 5% level of significance. This implies that the data was normally distributed.

4.4.3 Multicollinearity Test

Multicollinearity test was undertaken to determine the multiple correlations among the independent variables. The results of multicollinearity test are shown in Table 4.8.
Table 4.8: Results of Multicollinearity Test

<table>
<thead>
<tr>
<th>Explanatory Variables</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Management</td>
<td>.842</td>
<td>1.188</td>
</tr>
<tr>
<td>Cost Activities Identification</td>
<td>.869</td>
<td>1.150</td>
</tr>
<tr>
<td>Cost Driver Selection</td>
<td>.844</td>
<td>1.185</td>
</tr>
<tr>
<td>Cost Object Determination</td>
<td>.810</td>
<td>1.234</td>
</tr>
</tbody>
</table>

**Dependent Variable: Organizational Performance**

Evidently as shown in Table 4.8, resource management (VIF = 1.188), cost activities identification (VIF = 1.150), cost driver selection (VIF = 1.185), and cost objection determination (VIF = 1.234) were established to return VIF values less than the maximum acceptable value of 10. Therefore, it was concluded that multicollinearity was minimal. This implies that the associated standard errors were too small to compromise the t-statistic and/or the regression model parameters.

**4.4.4 Homoscedasticity tests**

Homoscedasticity test was conducted to establish the homogeneity of the residuals. Table 4.9 illustrates homoscedasticity test results of resource management, cost activities’ identification, cost driver selection and cost object determination.

Table 4.9: Homoscedasticity Test Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.600</td>
<td>.219</td>
<td></td>
<td>2.739</td>
</tr>
<tr>
<td>Resource Management</td>
<td>.003</td>
<td>.047</td>
<td>.012</td>
<td>.071</td>
</tr>
<tr>
<td>Cost Activities Identification</td>
<td>-.003</td>
<td>.043</td>
<td>-.012</td>
<td>-.072</td>
</tr>
<tr>
<td>Cost Driver Selection</td>
<td>-.058</td>
<td>.044</td>
<td>-.228</td>
<td>-1.323</td>
</tr>
<tr>
<td>Cost Object Determination</td>
<td>-.048</td>
<td>.034</td>
<td>-.244</td>
<td>-1.386</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Performance

The findings on Table 4.9 shows that all the variables had p-values greater than 0.05. Resource management, cost activities’ identification, cost driver selection and cost object determination had P-values of 0.944, 0.943, 0.195 and 0.175 respectively. This implies that there was no heteroscedasticity problem in the data.
4.5 Descriptive Findings and Discussions

The study sought to establish the effect of activity based costing elements comprising resource management, cost activities identification, cost driver selection and cost object determination on financial performance of listed manufacturing companies. Descriptive findings are presented on Tables 4.10, 4.11, 4.12, 4.13 and 4.14. In the presentation of results: 5 represents ‘Strongly Agree (SA)’; 4 represents ‘Agree (A)’; 3 represents ‘Neutral (N)’; 2 represents ‘Disagree (D)’; 1 represents ‘Strongly Disagree (SD)’.

4.5.1 Resource Management

The study aimed at determining the effect of resource management on financial performance of listed manufacturing companies. Descriptive findings are illustrated on Table 4.10.

Table 4.10: Effect of Resource Management on Financial Performance

<table>
<thead>
<tr>
<th>Resource Management</th>
<th>N</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource allocation efficiency minimizes costs and optimizes net returns of manufacturing companies.</td>
<td>39</td>
<td>33.3%</td>
<td>56.4%</td>
<td>2.6%</td>
<td>5.1%</td>
<td>2.6%</td>
<td>4.13</td>
<td>0.894</td>
</tr>
<tr>
<td>Efficient utilization of resources generates value propositions and adequate earnings.</td>
<td>39</td>
<td>20.5%</td>
<td>20.5%</td>
<td>15.4%</td>
<td>28.2%</td>
<td>15.4%</td>
<td>3.03</td>
<td>1.405</td>
</tr>
<tr>
<td>Proper resource aggregation leads to maximum profits with minimum costs.</td>
<td>39</td>
<td>43.6%</td>
<td>41%</td>
<td>7.7%</td>
<td>5.1%</td>
<td>2.6%</td>
<td>4.18</td>
<td>0.970</td>
</tr>
<tr>
<td>Effective resource scheduling leads to cost minimization in the production process.</td>
<td>39</td>
<td>7.7%</td>
<td>38.5%</td>
<td>23.1%</td>
<td>17.9%</td>
<td>12.8%</td>
<td>3.10</td>
<td>1.188</td>
</tr>
<tr>
<td>The cost of managing our resources is sustainable.</td>
<td>39</td>
<td>25.6%</td>
<td>5.9%</td>
<td>12.8%</td>
<td>2.6%</td>
<td>-</td>
<td>4.08</td>
<td>0.703</td>
</tr>
</tbody>
</table>

*Source: Author (2022)*
Descriptive findings established that resource management affect financial performance of listed manufacturing firms in Kenya. Activity based costing is applied in managing the resources of manufacturing firms to minimize costs and optimize the overall returns. 33.3% of respondents strongly agreed and 56.4% also concurred which means 89% at least agreed (mean=4.13; std.dev. =0.894) that resource allocation efficiency minimizes costs and optimizes net returns. This ensures that manufacturing firms are able to achieve stable financial performance in the long-run. However, majority (28.2%) of the managers were indifferent (mean=3.03; std.dev. =1.405) on whether efficient utilization of resources generate value propositions and adequate earnings. The standard deviation 1.405 implies a deviation from the mean responses hence managers were unclear on efficiency in resource utilization. On the same point, 40.1% of the managers at least agreed that efficiency in use of resources enhance value and adequacy of earnings among the manufacturing firms. Findings indicated that 43.6% of the managers strongly agreed (mean=4.18; std.dev. =0.970) that proper resource aggregation leads to maximum profits with minimum costs. This is an indicator of improved financial performance among manufacturing companies. The respondents had differing opinions (mean=3.10; std.dev. =1.188) that effective resource scheduling led to cost minimization in the production process. Nevertheless, 38.5% agreed that cost minimization depend on effectiveness of resource scheduling. Moreover, 59% of managers strongly agreed (mean=4.08; std.dev. =0.703) that the cost of managing manufacturing companies was sustainable resources is sustainable. This was an indication that they focus on cost efficiency which enhance financial performance.

Findings shows that effective resource management as an aspect of activity based costing minimize cost through efficiency allocation and utilization of resources. This promotes financial performance of manufacturing companies by cost control, efficiency, and optimized resource allocation. Therefore, resource management within the context of activity based costing enhance manufacturing companies’ financial performance. The findings concur with findings of Effiong and Akpan (2019). Their research findings revealed that ABC technique affect the production process efficiency positively.

4.5.2 Cost Activities Identification
The study aimed to establish the effect of activities identification on financial performance of listed manufacturing companies. Descriptive findings are shown on Table 4.11.
Table 4.11: Effect of Cost Activities Identification on Financial Performance

<table>
<thead>
<tr>
<th>Cost Driver Selection</th>
<th>N</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our costs centers effectively track expenses and ensures that actual costs are in line with standard costs.</td>
<td>39</td>
<td>30.8%</td>
<td>53.8%</td>
<td>10.3%</td>
<td>5.1%</td>
<td>-</td>
<td>4.10</td>
<td>0.788</td>
</tr>
<tr>
<td>Identification of the activities leads to determination of the total cost of performing each of the organization’s support activities</td>
<td>39</td>
<td>53.8%</td>
<td>23.1%</td>
<td>17.9%</td>
<td>5.1%</td>
<td>-</td>
<td>4.26</td>
<td>0.938</td>
</tr>
<tr>
<td>Our activity change control systems monitor all changes made to the activities for effective adjustments to the budget.</td>
<td>39</td>
<td>17.9%</td>
<td>17.9%</td>
<td>25.6%</td>
<td>25.6%</td>
<td>12.8%</td>
<td>3.03</td>
<td>1.308</td>
</tr>
<tr>
<td>We monitor all activity expenses using checkpoints to ensure that budgets are followed correctly.</td>
<td>39</td>
<td>15.4%</td>
<td>35.9%</td>
<td>28.2%</td>
<td>10.3%</td>
<td>10.3%</td>
<td>3.36</td>
<td>1.181</td>
</tr>
</tbody>
</table>

*Source: Author (2022)*

Findings revealed that cost activities identification affect financial performance of listed manufacturing firms. 30.8% of the respondents strongly agreed, 53.8% agreed thus 84.6% at least agreed (mean=4.10; std.dev. =0.788) that manufacturing companies’ costs centers effectively tracks expenses and ensures that actual costs are in line with standard costs. 53.8% of the managers strongly agreed (mean=4.26; std.dev. =0.938) that identification of the activities leads to determination of the total cost of performing each of the organization’s support activities. However, 25.6% of the respondents were indifferent (mean=3.03; std.dev. =1.308) on whether activity change control systems monitored all changes made to the activities for effective adjustments to the budget. Similarly, the respondents had differing opinions (mean=3.36; std.dev. =1.181) that manufacturing
companies monitor all activity expenses using checkpoints to ensure that budgets are followed correctly.

According to the study findings, cost activities identification as an element activity based costing is indicated by cost centers, monitoring activity expenses and activity change control systems. These parameters affect the financial performance of listed manufacturing companies. The findings concur with Waihenya (2018) who found that activity based costing has a significant effect on financial performance. ABC specifically provided budgeting and benchmarking insights for the manufacturing companies.

### 4.5.3 Cost Driver Selection

The study sought to establish the effect of cost driver selection on financial performance of listed manufacturing companies. Descriptive findings are shown on Table 4.12.

<table>
<thead>
<tr>
<th>Cost Selection</th>
<th>Driver</th>
<th>N</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>We use activity cost driver rate to assign material costs to products.</td>
<td></td>
<td>39</td>
<td>59%</td>
<td>17.9%</td>
<td>15.4%</td>
<td>5.1%</td>
<td>2.6%</td>
<td>4.26</td>
<td>1.069</td>
</tr>
<tr>
<td>Our company has a proper system of managing machine hours for optimal utilization.</td>
<td></td>
<td>39</td>
<td>30.8%</td>
<td>48.7%</td>
<td>10.3%</td>
<td>10.3%</td>
<td>-</td>
<td>4.00</td>
<td>0.918</td>
</tr>
<tr>
<td>Analysis of labour hours enables our company to take a measured approach to rein in cutting labour-related expenses.</td>
<td></td>
<td>39</td>
<td>20.5%</td>
<td>12.8%</td>
<td>43.8%</td>
<td>15.4%</td>
<td>7.7%</td>
<td>3.23</td>
<td>1.180</td>
</tr>
<tr>
<td>The costs based on number of set-ups in our company are economical and sustainable.</td>
<td></td>
<td>39</td>
<td>61.5%</td>
<td>15.4%</td>
<td>20.5%</td>
<td>2.6%</td>
<td>-</td>
<td>4.36</td>
<td>1.103</td>
</tr>
<tr>
<td>There is an association between overhead costs incurrence and the</td>
<td></td>
<td>39</td>
<td>25.6%</td>
<td>25.6%</td>
<td>23.1%</td>
<td>15.4%</td>
<td>10.3%</td>
<td>3.41</td>
<td>1.312</td>
</tr>
</tbody>
</table>

40
According to descriptive findings, financial performance of listed manufacturing companies is determined by cost driver selection. Majority (59%) of the respondents strongly agreed (mean=4.26; std.dev. =1.069) that manufacturing companies use activity cost driver rate to assign material costs to products. Additionally, 79.5% of the managers at least agreed (mean=4.00; std.dev. =0.918) that their respective manufacturing companies have a proper system of managing machine hours for optimal utilization. This contributes to stable net returns for manufacturing companies. However, the respondents were unclear (mean=3.23; std.dev. =1.180) on whether analysis of labour hours enables manufacturing company to take a measured approach to rein in cutting labour-related expenses. Moreover, findings showed that majority (61.5%) of the respondents strongly agreed (mean=4.36; std.dev. =1.103) that the costs based on number of set-ups in manufacturing companies are economical and sustainable. Further, 25.6% of the managers agreed that there is an association between overhead costs incurrence and the use of the cost driver in our company.

According to the findings, the manufacturing companies’ financial performance is evaluated by cost drivers where resources are allocation to most profitable areas. On the same breath, the areas that are associated low earnings or losses are eliminated. As such cost driver selection in activity based costing processes affect the financial performance of manufacturing companies. Cost deriver selection led to more accurate cost allocation and provides a better understanding of the cost structure associated with different activities and products. This helps in evaluating the profitability of various cost objects and promote cost control. The findings relate to Omurwa (2021). He found firm performance depend on activity based costing system.

4.5.4 Cost Object Determination
The study aimed at determining the effect of cost object determination on financial performance of listed manufacturing companies. Descriptive findings are illustrated on Table 4.13.
Table 4.13: Effect of Cost Object Determination on Financial Performance

<table>
<thead>
<tr>
<th>Cost Object Determination</th>
<th>N</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our company maintains sustainable operational efficiency in product lines.</td>
<td>39</td>
<td>17.9%</td>
<td>23.1%</td>
<td>23.1%</td>
<td>28.2%</td>
<td>7.7%</td>
<td>3.15</td>
<td>1.247</td>
</tr>
<tr>
<td>An appropriate cost apportionment practice enhances financial reporting and profit planning.</td>
<td>39</td>
<td>38.5%</td>
<td>41%</td>
<td>7.7%</td>
<td>12.8%</td>
<td>-</td>
<td>4.05</td>
<td>0.999</td>
</tr>
<tr>
<td>Our company has an effective financial planning system for tracking Costs.</td>
<td>39</td>
<td>48.7%</td>
<td>33.3%</td>
<td>10.3%</td>
<td>2.6%</td>
<td>5.1%</td>
<td>4.18</td>
<td>1.073</td>
</tr>
<tr>
<td>Allocation efficiency minimizes product/service costs in our company.</td>
<td>39</td>
<td>25.6%</td>
<td>20.5%</td>
<td>33.3%</td>
<td>17.9%</td>
<td>2.6%</td>
<td>3.49</td>
<td>1.144</td>
</tr>
</tbody>
</table>

Source: Author (2022)

Findings on Table 4.13 shows that the respondents agreed (mean=4.05; std.dev. =0.999) that an appropriate cost apportionment practice enhances financial reporting and profit planning. However, they were had differing opinions (mean=3.15; std.dev. =1.247) on whether their respective manufacturing companies maintained sustainable operational efficiency in product lines. The result mean that some manufacturing companies have sustainable operational efficiency in product lines while others lack the same. Moreover, the managers of the manufacturing companies agreed (mean=4.18; std.dev. = 1.073) that their respective organizations had an effective financial planning system for tracking costs. Additionally, 25.6% of the respondents strongly agreed that allocation efficiency minimizes product/service costs in manufacturing companies. However, 33.3% of the respondents had differing views (mean=3.49; std.dev. =1.144) pertaining to allocation efficiency and cost minimization in their companies. Cost object determine the product/service cost and this help in establishing the right prices that lead to effective returns for the manufacturing companies.

Apparently, the findings shows that cost object determination cost object determination enhance the analysis of costs on individual products, services, process and activities. Appropriate cost apportionment promote cost minimization and efficiency. The findings
also shows that operational and allocation efficiency among manufacturing companies determine their performance to a great extent. By assigning costs to specific cost objects, manufacturing companies can determine the profitability contribution for each cost object. This analysis is critical in identifying high-profit products and those that are not financially viable. Manufacturing companies can thus focus on optimizing the profitability of high-performing cost objects to enhance financial performance. The findings differ with findings of Wasike, Onsiro, Mindila, and Mwiti, (2017). They found insignificant relationship between activities based costing and financial performance.

4.5.5 Financial Performance

The research sought the views of the respondents regarding the financial performance of listed manufacturing firms. Relevant findings are illustrated on Table 4.14.

Table 4.14: Descriptive Statistics for Financial Performance

<table>
<thead>
<tr>
<th>Financial Performance</th>
<th>N</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our company’s net profit margins have increased for the past five years</td>
<td>39</td>
<td>48.7%</td>
<td>35.9%</td>
<td>12.8%</td>
<td>2.6%</td>
<td>-</td>
<td>4.31</td>
<td>0.800</td>
</tr>
<tr>
<td>Our company’s return on assets have been on upward trend.</td>
<td>39</td>
<td>48.7%</td>
<td>33.3%</td>
<td>12.8%</td>
<td>5.1%</td>
<td>-</td>
<td>4.26</td>
<td>0.880</td>
</tr>
<tr>
<td>Our operational costs are sustainable.</td>
<td>39</td>
<td>46.1%</td>
<td>35.9%</td>
<td>5.1%</td>
<td>10.3%</td>
<td>2.6%</td>
<td>4.13</td>
<td>1.080</td>
</tr>
<tr>
<td>Our returns on investment are adequate.</td>
<td>39</td>
<td>43.6%</td>
<td>35.9%</td>
<td>12.8%</td>
<td>7.7%</td>
<td>-</td>
<td>4.15</td>
<td>0.933</td>
</tr>
<tr>
<td>The company’s return on equity meets the operational sustainability needs.</td>
<td>39</td>
<td>41%</td>
<td>33.3%</td>
<td>15.4%</td>
<td>5.1%</td>
<td>5.1%</td>
<td>4.00</td>
<td>1.124</td>
</tr>
</tbody>
</table>

Source: Author (2022)

Descriptive findings showed that financial performance of manufacturing companies is indicated by the net profit margins, return on assets, operational costs, returns on investments, and returns on assets. 84.6% of the respondents agreed (mean=4.31; std.dev. =0.800) that manufacturing companies’ net profit margins have increased for the past five years. 82.1% of the managers also concurred (mean=4.26; std.dev. =0.880) that that manufacturing companies’ return on assets have been on upward trend. Additionally,
majority (46.1%) of the respondents admitted (mean=4.13; std.dev. =1.080) that their companies’ operational costs were sustainable. They also agreed (mean=4.15; std.dev. =0.933) the returns on investment are adequate and the companies’ return on equity meets the operational sustainability needs. Overall, activity based costing; resource management, cost activities identification, cost driver selection and cost object determination affect manufacturing firms’ financial performance. The findings relate to Oranefo (2022). He found that the application of ABC method significantly influenced the level of inventory management in production firms.

4.6 Inferential Findings and Discussions

Inferential analysis includes correlation and regression analysis. They were carried out to establish the relationship between activity-based costing and financial performance of manufacturing companies.

4.6.1 Correlation Analysis

Correlation analysis was undertaken to determine the relationship between the activity-based costing elements of resource management, cost activities’ identification, cost driver selection and cost object determination and financial performance. Findings are shown in the correlation’s matrix on Table 4.15.
Table 4.15: Correlations Matrix

<table>
<thead>
<tr>
<th></th>
<th>Financial Performance</th>
<th>Resource Management</th>
<th>Activities Identification</th>
<th>Cost Driver Selection</th>
<th>Cost Object Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Performance</strong></td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.521**</td>
<td>.357*</td>
<td>.738**</td>
</tr>
<tr>
<td>N</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.521**</td>
<td>1</td>
<td>.236</td>
<td>.305</td>
<td>.311</td>
</tr>
<tr>
<td><strong>Resource Management</strong></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.148</td>
<td>.059</td>
<td>.054</td>
</tr>
<tr>
<td>N</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.357*</td>
<td>.236</td>
<td>1</td>
<td>.234</td>
<td>.310</td>
</tr>
<tr>
<td><strong>Activities Identification</strong></td>
<td>Sig. (2-tailed)</td>
<td>.026</td>
<td>.148</td>
<td>.152</td>
<td>.055</td>
</tr>
<tr>
<td>N</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.738**</td>
<td>.305</td>
<td>.234</td>
<td>1</td>
<td>.308</td>
</tr>
<tr>
<td><strong>Cost Driver Selection</strong></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.059</td>
<td>.152</td>
<td>.057</td>
</tr>
<tr>
<td>N</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.553**</td>
<td>.311</td>
<td>.310</td>
<td>.308</td>
<td>1</td>
</tr>
<tr>
<td><strong>Cost Objects Determination</strong></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.054</td>
<td>.055</td>
<td>.057</td>
</tr>
<tr>
<td>N</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>39</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Table 4.15 presents correlation analysis findings. The findings shows that correction coefficient (r=0.521**; P= 0.001) indicating the relationship between resource management and financial performance of listed manufacturing companies was positive, moderate and significant at 1% significance level. The finding implies that resource allocation efficiency, resource utilization outcomes, resources aggregation, and resource scheduling as indicators of resource management affect financial performance.

According to correlation analysis results, the relationship between cost activities identification and financial performance of manufacturing companies was positive and significant (r=0.357*; P= 0.026) at 5% significance level. This means that cost activities identification affects the financial performance of listed manufacturing companies. The relationship between cost driver selection and financial performance was strong, positive and significant (r=0.738**; P= 0.000) at 1% significance level. The finding implies that financial performance of manufacturing companies depends on cost driver selection. Therefore, the indicators of cost driver selection including material inputs, labour hours, machine hours, and number of set-ups affect return on assets of listed manufacturing companies.

The findings further showed that the correction coefficient (r=0.553**; P= 0.000) depicting the relationship between cost object determination and financial performance of listed manufacturing companies was positive, moderate and significant at 1% significance level. The finding implies that products line, cost apportionment practice and cost tracking system affect the manufacturing companies’ financial performance.

4.6.2 Regression Analysis

Regression analysis was undertaken to establish the relationship between the independent variables and dependent variable by predicting financial performance from changes in the activity based costing elements that comprised the resource management, cost activities’ identification, cost driver selection and cost object determination. The findings are shown on Tables 4.16, 4.17 and 4.18.
The model summary shows that Correlation coefficient was $R=0.850$ with coefficient of determination $R^2=0.723$. The results revealed that the relationship between activity based costing and financial performance of manufacturing companies was significant. The results further reveal that changes in resource management, cost activities’ identification, cost driver selection and cost object determination accounted for 72.3% variation in the manufacturing companies’ financial performance. Based on the results, activity based costing affect financial performance.

**Table 4.17: ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regression</td>
<td>6.565</td>
<td>4</td>
<td>1.641</td>
<td>22.166</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>2.518</td>
<td>34</td>
<td>.074</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>9.083</td>
<td>38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Performance
b. Predictors: (Constant), Cost Object Determination, Cost Driver Selection, Cost Activities Identification, Resource Management

Source: Author (2022)

Analysis of Variance (ANOVA) was performed to determine the model fitness and overall significance. The F-value= 22.166; p=0.000 indicates the overall model was significant at 95% confidence level. Results revealed that activity based costing elements; resource management, cost activities’ identification, cost driver selection and cost object determination affected financial performance of manufacturing companies.
Table 4.18: Regression Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.808</td>
<td>.391</td>
<td></td>
<td>2.067</td>
</tr>
<tr>
<td>Resource Management</td>
<td>.208</td>
<td>.084</td>
<td>.244</td>
<td>2.484</td>
</tr>
<tr>
<td>Cost Activities</td>
<td>.064</td>
<td>.076</td>
<td>.082</td>
<td>.846</td>
</tr>
<tr>
<td>Identification</td>
<td>.446</td>
<td>.079</td>
<td>.558</td>
<td>5.675</td>
</tr>
<tr>
<td>Cost Driver Selection</td>
<td>.171</td>
<td>.061</td>
<td>.280</td>
<td>2.792</td>
</tr>
<tr>
<td>Cost Object Determination</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Performance

Source: Author (2022)

The following regression model was applied:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \]

Where;

\( Y = \) Financial Performance of Listed Manufacturing Companies  
\( \beta_0 = \) Constant  
\( X_1 = \) Resource Management;  
\( X_2 = \) Cost Activities Identification  
\( X_3 = \) Cost Driver Selection  
\( X_4 = \) Cost Object Determination  
\( \beta_1, \beta_2, \beta_3, \beta_4, = \) Beta Coefficients  
\( \varepsilon = \) Error margin

According to results on Table 4.16, the model was interpreted as;

\[ Y=0.808+0.208X_1+0.064X_2+0.446X_3 +0.171X_4 + \varepsilon. \]

The findings shows that the beta coefficient for resource management was (\( \beta=0.208 \)). It implies that an increase in resource management variable by one unit led to increase in financial performance by 0.208 unit. Regression analysis shows that cost activities identification had beta coefficient (\( \beta=0.064 \)) which implied that financial performance increased by 0.064 unit when cost activities identification increased by one unit. An increase in cost driver selection by one unit contributed to 0.446 increase in financial performance of listed manufacturing companies. The findings also shows that the beta coefficient for cost object determination was (\( \beta=0.171 \)). It implied that an increase in cost
object determination variable by one unit led to increase financial performance by 0.171 unit.

4.6.3 Hypotheses Testing

Hypotheses testing was done on basis of regression coefficients. The first null hypothesis was stated as $H_{01}$: Resource management has no significant effect on financial performance of listed manufacturing companies. Regression analysis results showed that resource management had t-value=2.484 and beta coefficient ($\beta$=0.208; $P=0.018<0.05$). The result means that the relationship between resource management and financial performance was significant at 95% confidence level. Therefore, the first null hypothesis was rejected and the researcher concluded that resource management affects the financial performance of manufacturing companies.

The second null hypothesis was stated as $H_{02}$: Cost activities identification has no significant effect on financial performance of listed manufacturing companies. Findings indicated that financing sources had t-value=.846 and beta coefficient ($\beta$=0.064; $P=0.404>0.05$). The finding means that the relationship between cost activities identification and financial performance was insignificant. Therefore, the second null hypothesis was not rejected and the researcher concluded that there was no enough statistical evidence to show that cost activities identification affects the financial performance.

The third null hypothesis was stated as $H_{03}$: Cost driver selection has no significant effect on financial performance of listed manufacturing companies. Findings shows that the t-value=5.675 and beta coefficient ($\beta$=0.446; $P=0.000<0.05$). This implies that the relationship between cost driver selection and financial performance was significant at 95% confidence level. Therefore, cost driver selection affects financial performance of manufacturing companies.

The fourth null hypothesis was stated as $H_{04}$: Cost object determination has no significant effect on financial performance of listed manufacturing companies. Findings shows that the t-value=2.792 and beta coefficient ($\beta$=0.171; $P=0.009<0.05$). This implies that the relationship between cost object determination and financial performance was significant at 95% confidence level. Therefore, cost object determination affects financial performance of manufacturing companies.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
This section outlines the summary, conclusions and recommendations regarding effect of activity based costing; resource management, cost activities identification, cost driver selection and cost object determination on financial performance of listed manufacturing companies. Suggestions for further research have also been outlined in this chapter. This includes extension to the current study for the purposes of adding more knowledge.

5.2 Summary of Findings
This section outlines the summary of findings pertaining to the effect of activity based costing; resource management, cost activities identification, cost driver selection and cost object determination on financial performance of listed manufacturing companies. The study employed survey research design which enhanced the interpretation of the findings in the context of research objectives. This methodology also facilitated the identification of relationships that emerged from the data analysis. It further helped in relating the research findings to the existing empirical literature.

5.2.1 Resource Management
Descriptive findings established that use of activity based costing leads to significant improvement in management of resources among the manufacturing companies listed on the Nairobi Securities Exchange. Effective resource management enhance cost minimization and return optimization thus affect the financial performance. The respondents strongly agreed that resource allocation efficiency minimizes costs and optimizes net returns. It was also revealed that efficient utilization of resources generates value propositions and adequate earnings. According to the findings, proper resource aggregation leads to maximum profits with minimum costs thereby promoting desirable financial performance. Further, effective resource scheduling contributes to cost minimization in the production processes. In correlation analysis, the results established that the relationship between resource management and financial performance of listed manufacturing companies was positive and significant (p=0.001) at 1% significance level. Based on the results, resource allocation efficiency, resource utilization outcomes, resources aggregation, and resource scheduling as indicators of resource management affect financial performance. Regression analysis results showed that financial performance of manufacturing companies could be predicted from variation in resource
management. The relationship between resource management and financial performance was significant \((p=0.018)\) at 95% confidence level. Therefore, resource management, as a component of activity based costing affect the performance of manufacturing firms listed on the Nairobi Securities Exchange.

5.2.2 Cost Activities Identification

The study aimed to establish the effect of activities identification on financial performance of manufacturing companies listed on the Nairobi Securities Exchange. Findings revealed that cost activities identification is essential in analysis and minimization of costs thus affect financial performance. The respondents agreed that manufacturing companies’ costs centers effectively tracks expenses and ensures that actual costs are in line with standard costs. Proper identification of the activities facilitates correct determination of the total cost of performing each of the organization’s support activities. Moreover, activity change control systems track changes made to the activities which promotes effectiveness in budgeting among the manufacturing companies. Correlation analysis results established a significant relationship \((p=0.026)\) between cost activities identification and financial performance. This means that cost activities identification as an element of activity based costing affect the financial performance of listed manufacturing companies. However, the regression analysis results showed that the relationship between cost activities identification and financial performance was insignificant \((p=0.404)\). The implication of the result is that there was no adequate statistical evidence to show whether cost activities identification affect financial performance.

5.2.3 Cost Driver Selection

Findings indicated that financial performance of manufacturing companies listed on the Nairobi Securities Exchange is determined by cost driver selection. The respondents strongly agreed that manufacturing companies use activity cost driver rate to assign material costs to products. They also noted that their respective manufacturing companies have a proper system of managing machine hours for optimal utilization. Furthermore, it was established that an analysis of labour hours enables manufacturing company to take a measured approach to rein in cutting labour-related expenses. The costs based on number of set-ups in manufacturing companies ought to be economical and sustainable for them to achieve better results. According to correlation analysis findings, the association between cost driver selection and manufacturing companies’ financial performance was significant \((p=0.000)\). Similarly, regression analysis findings indicated that the relationship between
cost driver selection and financial performance was significant \((p=0.000)\) at 95\% confidence level. Therefore, cost drivers including material inputs, labour hours and machine hours determines the level of costs. Activity based costing helped to manage costs and contribute to manufacturing companies’ financial performance.

5.2.4 Cost Object Determination
Findings revealed that an appropriate cost object determination practice enhance financial reporting and profit planning. As such, the manufacturing companies that maintain sustainable operational efficiency in product lines are able to generate sustainable results. It is also imperative for the manufacturing companies to establish and maintain an effective financial planning system for tracking costs. This enhances allocation efficiency by minimizing product costs in the production process. In correlation analysis, the results established that the relationship between cost object determination and financial performance of manufacturing companies listed on the Nairobi Securities Exchange was positive and significant \((p=0.000)\) at 1\% significance level. The regression analysis findings indicated that the relationship between cost object determination and financial performance was significant \((p=0.009)\) at 95\% confidence level. This finding implies that the elements of cost object determination comprising the products line, cost apportionment practice and cost tracking system affected the financial performance.

5.2.5 Financial Performance of Listed Manufacturing Companies
The study findings established that activity based costing affect financial performance of the manufacturing companies listed on the Nairobi Securities Exchange. Financial performance is indicated by the net profit margins, return on assets, operational costs, returns on investments, and returns on assets. Respondents agreed that manufacturing companies’ return on assets and net profit margins have increased for the past five years. Moreover, the respondents admitted that their respective manufacturing companies’ operational costs were sustainable. In regression analysis, the model summary revealed that the coefficient of determination was \(R^2=0.723\) thus activity based costing accounted for 72.3\% variation in the financial performance of manufacturing firms. This implies that resource management, cost activities’ identification, cost driver selection and cost object determination as elements of activity based costing affected financial performance of manufacturing companies listed on the Nairobi Securities Exchange.
5.3 Conclusions

The conclusions were made based on the summary of key findings pertaining to the effect of resource management, cost activities determination, cost driver selection, and cost object determination on financial performance of listed manufacturing firms.

5.3.1 Resource Management

The study concluded that appropriate management of resources enables manufacturing firms to plan, schedule, forecast and optimize costs and returns. Effective resource management minimize costs and optimize returns leading to better financial performance of manufacturing firms listed on the Nairobi Securities Exchange. Efficient utilization of resources also promotes value propositions, which lead to adequate net earnings. Based on the findings, it can be deduced that use of activity-based costing enhances management of resources and optimize returns by ensuring that resources are utilized to their maximum potential. This yields desirable financial performance outcomes for the manufacturing firms listed on the Nairobi Securities Exchange.

5.3.2 Cost Activities Identification

In conclusion, the findings established that proper cost activities’ identification as an element of activity based costing affect the financial performance of listed manufacturing companies in Kenya. Activity based costing usually assigns indirect and overhead costs to products which are related. Therefore, ABC system recognizes the association between activities, manufactured products, and their respective costs. For effective assigning and analysis of overhead and indirect costs, it is imperative for the managers to identify the activities making the manufacturing companies to incur the costs. Cost activities identification in the activity-based costing process facilitates the recording and posting of reliable data in regard to costs. As such, cost activities identification provides an effective basis for assessing and analyzing costs during the manufacturing process. Appropriate cost analysis lead to cost effectiveness and efficiency which are important indicators of desirable financial performance in manufacturing companies.

5.3.3 Cost Driver Selection

Based on the study findings, it can be concluded that cost driver selection significantly affects the financial performance of listed manufacturing companies in Kenya. As a component of activity based costing, cost driver plays a critical part in the absorption of overheads. This implies that cost driver selection has a great relevance on the
management of costs and enhancement of the Returns on Assets (ROA) for listed manufacturing companies. Manufacturing companies assigns activity cost driver to each cost pool and this helps in allocating costs to products. Effective allocation of costs product is important in pricing and planning for profits in manufacturing firms. Apparently, the analysis of cost drivers including material inputs, labour hours, machine hours and number of set-ups are essential for product costing’s effectiveness. As such, cost driver selection in activity based costing affect the manufacturing companies’ financial performance.

5.3.4 Cost Object Determination
The study concluded that effective cost object determination is vital for product costing, service costing and analysis of financial performance of listed manufacturing companies. The findings established that cost object determination enables manufacturing companies to establish and implement appropriate pricing strategies since it allows them to have a firm grasp on costs. Activity based costing, and specifically the cost object determination component categorizes costs from the different manufactured products for the purposes of creating quality for better pricing. This leads to increase in the sales earnings thereby promoting financial performance of manufacturing companies. Based on the study findings, cost apportionment plays a critical role in tracing the cost source and assigning the costs. Listed manufacturing companies apply the practice of cost apportionment in tracing costs, budgeting for their financial resources and minimizing costs in the activities that are not generating sufficient returns. Moreover, cost tracking system aid manufacturing companies in obtaining cost information that enable them to make budget estimations that are accurate and realistic. Additionally, the aspect of cost tracking enables the manufacturing companies to adjust the budgets and optimize costs. According to the study findings, the elements of cost object determination comprising the products line, cost apportionment and cost tracking system affect the financial performance of manufacturing companies.

5.4 Recommendations
5.4.1 Recommendations on Policy
A comprehensive implementation guidelines and principles for adopting activity based costing should be developed. Manufacturing firms should benchmark in other manufacturing firms overseas to evaluate its effectiveness and suitability in the local context. Manufacturing companies should also undertake a thorough analysis of the ABC
implementation costs and the anticipated benefits in terms of cost accuracy, resource allocation, and effectiveness in decision-making effectiveness. This will guide the policymakers in sound decisions about the adoption Activity based costing.

5.4.2 Recommendations on Practice
First, the listed manufacturing companies should intensify the utilization of activity based costing in the management of resources. Resource management incorporates aggregation and scheduling aspects which will ensure optimal utilization and better financial performance.

Secondly, the listed manufacturing companies should establish appropriate mechanism of identifying cost activities as they use activity based costing system. This will provide an effective basis for assessing and analyzing costs during the manufacturing process.

Thirdly, the researcher recommends that cost driver selection as part of activity based costing should be integrated into the financial plans of listed manufacturing companies. This integration will lead to cost minimization and optimization of returns.

Finally, the researcher recommends that the listed manufacturing companies should intensify the utilization of activity based costing system in allocation and apportionment of costs. Proper allocation will enable manufacturing companies to trace the distinct cost objects that lead to profits as well as losses. Therefore, they can minimize the cost objects associated with losses and focus on costs objects leading to better returns and financial performance.

5.4.3 Contribution to the Knowledge
The current study provides empirical evidence on the effect of activity based costing on financial performance of manufacturing firms listed on the Nairobi Securities Exchange. It contributes information to support assumptions about the relationship between ABC and financial outcomes. The study also provides practical insights for organizations considering the adoption of activity based costing. It specifically indicates the ways in which ABC system could influence financial performance through cost control, decision-making, and returns analysis. These practical insights will help the business firms make sound decisions about activity based costing.
5.5 Suggestions for Further Research

The researcher suggests further research to be conducted on activity based costing on profitability of the manufacturing companies, including those that are not listed on Nairobi Securities exchange. Other researchers should also do a comparative analysis of the financial performance for different firms, which have adopted activity based costing. The researcher also suggests further research on the factors influencing implementation of activity based costing in the manufacturing companies.
REFERENCES


Kenya Orchards Plc (2021) Annual Report and financial statements


APPENDICES

Appendix I: Introduction Letter

Dear Sir / Madam,

**RE: PERMISSION TO COLLECT DATA FOR ACADEMIC RESEARCH**

I am a Master of Business Administration (Accounting Option) student of Kenyatta University seeking to carry out a research study entitled “Activity Based Costing and Financial Performance of Manufacturing and Allied Companies Listed on Nairobi Securities Exchange”. You have been identified and carefully chosen for the study. This letter’s purpose is to request permission to consult with selected members using the attached copies of the attached Questionnaire. The obtained information is for study purposes only and will be treated as strictly confidential. Thank you.

Yours Sincerely,

Vandrose Arithi
Appendix II: Questionnaire

Please fill in the questionnaire by ticking (✓) appropriately in the spaces provided.

Section A: Background Information

1. Gender
   - Male [ ]
   - Female [ ]

2. Age Bracket
   - 25 years and below [ ]
   - 26 - 35 years [ ]
   - 36 - 45 years [ ]
   - 46 - 55 years [ ]
   - Over 55 years [ ]

3. Highest Level of Education
   - Certificate [ ]
   - Diploma [ ]
   - Degree [ ]
   - Masters [ ]
   - Doctorate [ ]

4. Work Experience
   - 1 year and below [ ]
   - 2 - 5 years [ ]
   - 5 - 10 years [ ]
   - Above 10 years [ ]

Section B: Resource Management

Using the scale below, please specify your agreement level to the following propositions on the resource management.

5 – Strongly Agree; 4 - Agree; 3 - Neutral; 2 – Disagree; 1 – Strongly Disagree

<table>
<thead>
<tr>
<th>Proposition</th>
<th>5</th>
<th>4</th>
<th>3</th>
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<tbody>
<tr>
<td>Resource allocation efficiency minimizes costs and optimizes net returns of manufacturing companies.</td>
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<td></td>
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<tr>
<td>Efficient utilization of resources generates value propositions and adequate earnings.</td>
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7. Proper resource aggregation leads to maximum profits with minimum costs.

8. Effective resource scheduling leads to cost minimization in the production process.

9. The cost of managing our resources is sustainable.

Section C: Activities Identification

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<tr>
<td>10.</td>
<td>Our costs centers effectively track expenses and ensures that actual costs are in line with standard costs.</td>
<td>5</td>
<td>4</td>
<td>3</td>
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</tr>
<tr>
<td>11.</td>
<td>Identification of the activities leads to determination of the total cost of performing each of the organization’s support activities</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<tr>
<td>12.</td>
<td>Our activity change control systems monitor all changes made to the activities for effective adjustments to the budget.</td>
<td>5</td>
<td>4</td>
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<tr>
<td>13.</td>
<td>We monitor all activity expenses using check points to ensure that budgets are followed correctly.</td>
<td>5</td>
<td>4</td>
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Section D: Cost Driver Selection

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<td>14.</td>
<td>We use activity cost driver rate to assign material costs to products.</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<td>15.</td>
<td>Our company has a proper system of managing machine hours for optimal utilization.</td>
<td>5</td>
<td>4</td>
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<tr>
<td>16.</td>
<td>Analysis of labour hours enables our company to take a measured approach to rein in cutting labour-related expenses.</td>
<td>5</td>
<td>4</td>
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<td>17.</td>
<td>The costs based on number of set-ups in our company are economical and sustainable.</td>
<td>5</td>
<td>4</td>
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<td>18.</td>
<td>There is association between overhead costs</td>
<td>5</td>
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incurrence and the use of the cost driver in our company.

**Section E: Cost Object Determination**

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<tr>
<td>19.</td>
<td>Our company maintains sustainable operational efficiency in product lines.</td>
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<td>20.</td>
<td>An appropriate cost apportionment practice enhance financial reporting and profit planning.</td>
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<td>21.</td>
<td>Our company has an effective financial planning system for tracking Costs.</td>
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<td>22.</td>
<td>Allocational efficiency minimizes product/service costs in our company.</td>
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**Section F: Financial Performance**

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<tr>
<td>23.</td>
<td>Our company’s net profit margins have increased for the past five years</td>
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<td>24.</td>
<td>Our company’s return on assets have been on upward trend.</td>
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<td>25.</td>
<td>Our operational costs are sustainable.</td>
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<td>26.</td>
<td>Our returns on investment are adequate.</td>
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<td>27.</td>
<td>The company’s return on equity meets the operational sustainability needs.</td>
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</table>

*Thank You*
Appendix III: Manufacturing Companies Listed on the Nairobi Securities Exchange

1. B.O.C Kenya Plc
2. British American Tobacco Kenya Plc
3. Carbacid Investments Plc
4. East African Breweries Ltd
5. Unga Group Ltd
6. Eveready East Africa Ltd
7. Kenya Orchards Ltd
8. Flame Tree Group Holdings Ltd

Source: NSE (2021)