

**EFFECT OF PRODUCT DIVERSIFICATION ON FINANCIAL PERFORMANCE OF  
TELECOMMUNICATION FIRMS IN KENYA**

**BY**

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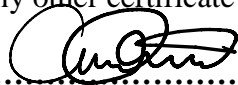
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**DECLARATION**

This project is my original work and I can attest that it has never been presented for any award of degree or any other certificate in any institution or University.

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## **DEDICATION**

To my Mother Pauline Atieno Ochieng for her unconditional support.

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## **LIST OF ABBREVIATIONS**

**FP** Financial Performance

**PD** Product Diversification

**CAK** Communications Authority of Kenya

**ROA** Return on Asset

**ROE** Return on Equity

**EBIT** Earnings before Interest and Taxes

## ABSTRACT

Diversification strategies is a key tool firms across the globe have applied for decades to achieve their business objectives. The grounding theories for this study were Resource-Based Theory and Modern Portfolio Theory. Only a few studies on diversifying and financial performance of telecommunication firms have been conducted in Kenya, which is the gap and the current study aimed to respond to the question: what is the effect of product diversification on business performance of telecommunication firms in Kenya? The study adopted a descriptive cross sectional research design. The populace of the study comprised of telecommunication service providers operating in Kenya. Secondary data was used in the study. Out of the 95 projected data points, 95 were collected. This translates to a 100% response rate. Diversification, company size, growth, and capital structure are all independent variables that affected the return on assets of telecommunication companies, according to the study. Diversification had a positive relationship with ROA. Linearity and normality tests were performed, suggesting that the data was normally distributed. The multicollinearity VIF test yielded values of 1.022 to 2.431, which are in the 1–10 range, indicating that multicollinearity does not exist. The researcher recommended that managers of the various players in the telecommunication industry to come up with better management alternatives that assist in proper and effective implementation of diversification strategies. Future research should look into broadening the scope of the study to include both internal and external factors that may have influenced the business community's performance levels.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

The business niche today for operations has turned out to be dynamic and eruptive as a result of globalization and innovations witnessed globally brought about by technological enhancement and inter trade, hence prompting firms to constantly create and device new corporate ideas that would increase competitiveness (Bruche, 2000). With limited resources, stiff competition, many other challenges that disintegrate profitability, growth, and performance, organizations have to stipulate new ideas to be in the forefront of the competition. Diversification strategies is a key tool firms across the globe have applied for decades to achieve their business objectives. (Johnson, Scholes & Whittington, 2008). Diversification strategies allow organizations to manage risks by diverging through entry into new lines of products and services that are dissimilar from the firm's ongoing processes, and as such a firm can have diversified investment portfolio with different low degree of risks, providing for construction of a portfolio that enhances structural performance. Consequently, the strategy expands on the competitiveness of organizations as they look after putting themselves in the epicenter of the customer. According to Thomson et al. (2012), diversification necessitates an organization's use of existing resources to increase shareholder value. Diversification, according to Ansoff (1965), is exhibited through product creation, market development, and market penetration, which signify changes in product market structure.

The grounding theories for this study therefore are Resource-Based Theory and Modern Portfolio Theory. The Modern Portfolio Theory (MTP) by Markowitz (1952) encourages diversification to mitigate risks from the market as well as those risks that attributable specifically to one company in regards to expected returns. The Resource-Based Theory (RBV) by Warner felt (1984) asserts that resources aid a firm in being competitive by promoting diversification hence firms should find ways to recognize and use resources to develop and maintain a competitive advantage that will improve performance.

The telecommunication industry in Kenya has been witnessing exceptional growth with more players seeking to have a share of the profitability of the market. The sector is not only getting vibrant but it continues to evolve due to technological advancement and infrastructure. This

industry has witnessed competition strategies ranging from price cutting and developing of similar product lines. It's imperative for firms in the telecom industry to develop diverse divergence ideas that will offer a much more advantage competitively over their competitors. Such strategies mix must hence be well planned and implemented to align with organizations competitive priorities and strategic objectives.

Kenyan Telecommunication market has 16 service providers with a total of 54.56 Million users with respect to the 2019-2020 Communications Authority of Kenya Report. The number is expected to continue increasing with recent occurrence of COVID 19 pandemic globally that has contributed to embracing of technology for different service provision. The level of competition among providers will continue to heighten with the market players developing strategies and products to outdo each other. Diversification as championed by Markowitz (1952) in the Modern Portfolio Theory has been widely used by organizations across the globe to ensure market leadership by creating investment portfolios that reduce risks and improves return hence thus relevancy in the marketplace and as well performance measure of firms. RBV theory on the other hand provides on how firms use their resources to have market position and increased share value by developing new products and entering new markets. This theory gives an understanding of how telecommunication firms in Kenya use their resources and know-how to stay relevant in a rapidly growing industry influenced by first-paced technological change.

### **1.1.1 Product Diversification**

A critical component in business modeling is strategy development. One of the development strategy that firms takes into consideration is growth strategy. One of the growth strategy organizations often adopt is diversification. Diversification simply put is the expansion or entry into new markets and development of new product lines that are different from those that a firm operates into currently. (Rumelt, 1998, p23). Diversification is corporate strategy to enter into new markets and develop new product lines, Ansoff (1957). Diversification was defined by Dundas and Richardson (1980) as the development of innovative products, markets, and the pursuit of more than one target audience. Diversification, according to Amit and Livnat (1988), is the process of building a portfolio of different assets with varied proportions of time horizon, risk tolerance, and

investor goals. Firms diversify to create positive spillovers, according to Foss and Christensen (2001), because the value of resources in one industry increases as a result of investment in another.

Diversification occurs at various levels within a company, including the business unit level and the corporate level. Diversification occurs at the business unit level when a company extends into new segments of the industry in which it now operates. At corporate level, companies may decide to expand through entering new markets or expanding existing business from a single product industry to new industry (Hitt, Ireland & Hoskisson, 2001). One key diversification strategy is Product Diversification.

According to Galbraith (2008) product diversification is of three types; related, linked, and unrelated diversification. Unrelated diversification occurs when an organization adds some new or unrelated products, enter new markets that are different to the existing business. This form of diversification often rely on financial and management competencies. Related diversification involves the firm moving into an industry that has similarities to the existing industry it's operating in. This form of diversification is characterized with synergistic benefits. This kind of diversification allow a firm to achieve improved ROI as a result of improved revenues and reduced cost. As a result, concentric diversification entails entering new businesses and operating at various points of concern within such industries. There is, nevertheless, a level of integration across various businesses.

### **1.1.2 Financial Performance**

Because it is tied to the creation of value, the stimulation of an organization's performance is a consideration for both the public and private sectors. Principally Financial performance reflects a firm's outcomes and results that are indicators of companies overall monetary health for a given period of time. That is to say, it indicates the degree to which a firm's financial objective of maximizing shareholders wealth is being achieved. Financial Performance can be defined as the capability of a fir to work efficiently and grow while withstanding environmental threats as it exploits the available opportunities (Mutega, 2015).

Ng'ang'a (2017) defines FP as the degree to which profit oriented firms measure the level of financial objective attainment. Financial performance evaluation considers a variety of factors, but profitability ratios are the most popular in the field of finance and parameter estimation. Ratios that explain revenue growth, profitability, return on assets, return on capital, and Earnings before Interest and Tax are some of these ratios. Musila (2015), asserts that financial performance is a measure of a company's position on creation of the shareholders wealth for a certain trade period. It is imperative to note that there are other variables of performance critical to a business such as CSR, welfare and future potential growth. However, investors are more concerned with periodic earnings. Profitability is an organization's primary goal, and regardless of how profit is measured or defined, it reflects the organization's capacity to meet the needs of all stakeholders. (Pearce & Robinson, 2007). As such long term decisions should be adopted as short term decisions often provide unsatisfactory profit results which promotes the rising issues of different stakeholders in the firm.

This study used three indicators to measure Financial Performance. Return on Assets (ROA), Return on Equity (ROE), and Earnings before Interest and Taxes (EBIT) (EBITS). According to Ojiambo (2014), ROA is a measure of a company's ability to create income by successfully utilizing its resources. It refers to a company's ability to generate revenue from all of its assets. Return on owner's equity is defined as the ratio of net profit after taxes to total shareholders' equity (ROE). The rate of return on a shareholder's investment in the company is calculated using the ratio. When you mix ROA with ROE, you get a clear picture of management's effectiveness.

EBIT measures a firm's financial performance, providing a better reflection on operating profitability of the business. According to Capkun, Hameri, and Weiss (2009), EBITS is a superior indicator of financial success since it shows how well a business entity can control the cost of sales, production, and operational costs. ROA is a suitable indicator of financial performance, particularly for new and expanding businesses, and has thus been included in this study's financial performance metrics.

### **1.1.3 Product Diversification and Financial Performance**

Diversification and financial performance are linked, according to theories like Modern Portfolio Theory and Resource-Based Theories. Resource based theory suggest that efficient allocation of resources provide value enhancing effect on a firm. According to Barney (1991), Diversification on the basis of resource capabilities results in economies of scope since it enables the sharing of core competencies and activities and hence it enables sustainability of competitive advantage. According to Chen and Yu (2011), diversification helps companies to benefit from economies of scale in a variety of resources, both tangible and intangible, and as a result, businesses seek larger economic returns.

Diversification, on the other hand, according to Modern Portfolio Theory, improves returns while reducing risk. Diversification, on the other hand, according to Modern Portfolio Theory, improves returns while reducing risk. Moon (2009) in his research work notes that diversification strategies promotes cost cutting efficiency that leads to low risks. Furthermore, the researcher asserts that diversity reduces the needed risk premium for uninsured debt and other contingent claims such as derivative contracts. Stiroh (2004) noted that diversification helps in lowering a firm's independence on a single income by lowering the risk adjusted returns and improving Financial Performance.

### **1.1.4 Telecommunication Firms in Kenya**

Kenya's telecommunications industry has undergone significant changes in the last decade and is likely to continue to grow in the future. The industry has been changed by technical advancements, infrastructure growth, and regulatory restructuring over the last decade. With a recent surge in user population as a result of the COVID19 epidemic, the industry's growth has been ascribed to population expansion, communication services, and rising use of mobile phones that support 3G, 4G, and 5G services across the country. Telecommunication sector growth has been further influenced by rising number for Internet connectivity, wired and wireless broadband, fixed telephony services, postal services and even cyber security landscape. The Internet connectivity providing entry for new firms; corporate, single owned business adopt the online platforms of trade to reach out to a wider customer base.

According to the Communication Authority Report (2020), value-added services have contributed significantly to the telecom sector's growth. The rise in value-added services was fueled by an increment in the number of users and a growing need from network operators to provide effective telecom services. According to transmission type, wire line is the largest market in the world, with growth likely to continue in the coming years. The growth in wire line is due to rising demand for wired communication services. The report further indicates that the industry has witnessed exceptional growth attributed to fixed telephony services, postal services and cyber security landscape.

Safaricom is the largest market stakeholder for mobile data subscription in Kenya, with Airtel Networks, Finserve Africa Limited, Liquid Telecom, Telkom Kenya, Jamii telecommunications, Wananchi (Zuku), and Mobile Pay as additional important competitors. iWay Africa Kenya, which combined its internet service provider business with Echotel International in 2019, is another company.

Communication Authority of Kenya Financial year 2019/2020 report indicated that the outbreak of COVID-19 pandemic in March 2019 prompted upward growth trend in the industry as the government encouraged use of ICT in provision of e-services. And Private organization adopting online operation of business. According to the report, Safaricom had a market share of 64.2 having lost 0.3 percent points to Airtel Networks and Telkom firms. Airtel networks coming second with a market share of 26.8 % and Telkom 6.8 %. The competition in this sector has greatly intensified in services provided, with every firm adopting different strategies and using their resources to have a competitive advantage over others and boost performance. However, it is not clear how product diversification influence their financial performance hence the study.

## **1.2 Research Problem**

Performance is key concept in finance. The need explain how two firms operating in the same environment perform differently has been of key concern and several study research in finance have been conducted to try and understand the mystery. These studies focused on different internal and external factors hypothesized to be the cause of contradicting Financial Performance. The competition has drastically changed following intense global competition, rapid technological advancements, and dynamic customer requirements. Hence, it's imperative for organizations to



maintain competitiveness in a risky business climate, it is imperative for appropriate strategies to be developed and implemented to sustain the competition (Letangule & Letting, 2012).

Diversification, a traditional based activity has been conducted to help firms in the Telecommunication industry achieve their profitability objectives. Additionally as a growth strategy it allows firms to improve performance providing optimal risk diversification strategies for best performance. Meaning that if one type of work is performing poorly, the overall performance is compensated by the diversified investment (Bisungo, Chege & Musiega, 2014).

Following the introduction of new companies and technological advancements, the competitiveness of firms in the telecommunications industry remains intense and hard. And, in order to remain competitive, efficient, and effective, as well as to maintain favorable performance, telecommunications companies have employed a variety of diversification techniques, spanning from product to regional diversification. However, no evidence exists that the diversification strategy has improved telecommunication corporations' efficiency, effectiveness, or even performance.

Product divergence and firm presentation relationship has been the subject of abundant research in several fields. Several studies conducted in this area do not provide a precise relationship between product diversification and performance. For instance, Olajide (2012) researched on the application of diversification strategies at manufacturing firms in Nigeria and established that diversifying firms had a higher level of ROA and experienced growth in firm size. Pandya (1998) investigated whether firm level of diversification had any impact on performance. Study findings showed that averagely, diversified firms performed better in terms of risks and returns compared to undiversified firms.

Locally, Mwangi (2016) researched on divergence ideas in the commercial banking sector in Kenya. The findings revealed that product diversification (iMobile and internet banking) was prevalent in the commercial banking sector and it allowed the banks to effectively compete. Ndung'u (2019) looked into how product diversification influenced the financial performance of manufacturing companies in Kenya. Under both EBITD and ROA, the investigator discovered a negative but negligible link between differentiation strategy and manufacturing entity financial

performance. In Kenya's insurance market, Kivungi (2013) investigated the factors that influence the choice of undifferentiated targeting techniques. The findings indicated the potential for appealing monetary profit, the availability of funds that make diversification commercially viable, the opportunity to benefit from superior management skills, develop value for shareholders, profit erosion in maturing markets, and competitive issues. Achuti (2012) sought to investigate the application of diversification strategies at Safaricom Ltd. The findings showed that Safaricom had implemented product diversification strategies over the past years, allowing the organization to become the major market player in telecom industry and as such the strategies contributed immensely in its growth and helped the organization retain its relative position over the years.

The lack of consensus among previous researchers is reason enough to conduct a follow-up study. Furthermore, only a few studies on telecommunication firm diversification and financial performance have been conducted in Kenya, which is the gap that the current study aimed to fill by answering the question: what is the effect of product diversification on telecommunication firm business performance in Kenya?

### **1.3 Research Objective**

The objective of the study is to regulate the effect of product diversification on financial performance of telecommunication firms in Kenya.

### **1.4 Value of the Study**

The results of the study will benefit a variety of stakeholders in Kenya's telecommunications business, including the Kenyan government, particularly the Communications Authority of Kenya, users (clients), and future academics and scholars. The findings of the study will enable managers to have a better understanding of how diversification impacts on their firm's performance by providing an opportunity to come up with better management alternatives that assist in proper and effective implementation of diversification strategies. Difficulties with diversification strategy adoption and implementation will also be made known to management, assisting them in making the necessary modifications to overcome these hurdles and achieve optimal performance.

To policy makers and government, especially Kenya Communications Authority, it will aid in conceptualization of new policies and regulations that will govern the telecommunication industry. Development of new strategies and revision of those already in place will be possible hence achievement of synergy. Customers will be informed of the range of products offered by firms in the industry since that can only be achieved by product diversification strategies.

Finally, academics and academicians working in similar domains will find this study useful as future reference material. Various prospective study concerns, such as the linkages between adopted strategies and industry entrants, will also be considered.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter begins with a discussion of the study's conceptual framework, which provides an in-depth knowledge of ideas that aim to explain the underlying relationship between the quality diversity and telecommunication business financial performance. Following that, there is a review of prior works in this field, as well as a critique of them.

#### 2.2 Theoretical Review

There are four models that strive to explain effect of diversification strategies on organization financial performance. This study focuses on Modern Portfolio Theory (MTP) and Resource-based view (RBV) theory to synthesize those factors that influence diversification in organizations.

##### 2.2.1 The Resource-Based View (RBV)

The RBV offers the initial theories in favor of diversification and competitive advantage. Founded by Barney (1986), the theory suggest firms own resources that are difficult to imitate giving one firm superior performance and competitive advantage over another. This idea examines why companies succeed or fail in the corporate world from the inside out. Barney goes on to say that valuable, scarce, imperfectly imitable, and imperfectly substitutable organizational resources are the key source of sustainable competitive advantage that keep superior performance going. As a result, valuable resources must enable a company to accomplish things and behave in ways that result in higher sales, higher margins, lower costs, or contribute financial value to the company.

Penrose (1959) further contributed to further understanding RBV theory by emphasizing on the internal properties of a firm. According to Penrose, a company's growth is determined by its resources and is constrained by management resources. The author goes on to say that the firm's internal resources allow it to function in its external environment. As a result, according to Penrose, RBV helps managers comprehend why competences are viewed as a firm's most valuable asset while also appreciating how such assets can be used to boost business success.

Wernerfelt (1984) asserts that RBV views a firm as a package of resources. These bundles of resources are unique to every organization and are difficult to duplicate, hence providing a competitive edge that sustains better performance in the marketplace. Chen and Yu (2011) postulate that organizations expand their tangible and intangible resources in order to exploit products to exploit financial scope.

It is very important therefore, for an organization to identify those resources and create a competitive advantage. The study hence seeks to establish the impact of divergence strategies on financial performance of telecommunication firms by identifying which resources each of these firms own that give competitive advantage for high performance.

### **2.2.2 Modern Portfolio Theory (MPT)**

MPT was formulated by Harry Markowitz in 1952. Known for his contribution to the realm of finance, Markowitz stipulates that by carefully selecting investments to include in one's portfolio as a stockholder, you effectively minimize risk exposure and maximize expected portfolio return. Markowitz further argues that the portfolio's risk should have a low covariance, hence the investor should aim at that objective. Chen and Yu (2011); Olajide (2012) argue that product diversification allows firms to benefit from economies of scale, a growth strategy that can only succeed when marginal benefits rise while marginal costs fall, allowing the organization to enjoy stable income flows, increased profits, increased revenue, and improved market share performance. As a result, the MPT is crucial to the research since it explains the motive for diversification. Telecommunications companies will diversify in order to increase their profits while reducing their risks. Telecommunications companies, on the other hand, will only incur bigger risks if the projected return is high. As a result, diversification should lead to higher returns, according to the theory.

### **2.3 Determinants of Financial Performance**

Telecommunication industry is radically changing. A change propelled by a combination of market, business and technological intensity. Gupta (2008) stipulates that the telecommunications industry is characterized by advanced technologies, new products, and huge capital investments to make content available all over. Market players are constantly developing new products and services to increase their market shares hence the fierce competition witnessed in the industry.

Emergence of electronic commerce has magnified the amount of available information hence providing firms with platform to efficiently respond to clients' expectations. Consequently, customers can inquire more about the market opportunities with ease. Analyzing the factors that influence a company's financial success is critical for all stakeholders, particularly investors: The goal of telecommunication companies is to maximize shareholder value. As a result, this principle provides a theoretical and operational framework for assessing corporate performance. Financial performance of a firm is pegged on several factors: firm size, capital structure, sales, risk and economic growth essential for future company earnings.

### **2.3.1 Risk and Growth**

Montgomery (2008) brings out the two most important factors that influence a firm financial performance; risk and growth. And given that firm value is acclimatized by organization's performance outcome, risk exposure level can impact the firm's market value. Montgomery further points out that economic growth as a component of financial performance measure is also critical in achieving better position in financial market because market value is a reflection of expected future profits. Business risks, credit risks, market risks, liquidity concerns, and systematic risks are just a few of the hazards that telecommunications companies are susceptible to. The risk exposure of one Telecom Company will differ from that of another. Firms, on the other hand, will expect larger profits in a market with high risks as a compensation for taking on more risk.

### **2.3.2 Firm Size**

An organization's size has been considered a crucial variable in financial performance. The underlying theoretical argument is that a large firm enjoys economies of scale because it's in a position to negotiate for discounts due large quantity buying hence better performance compared to small size firm. Economies of scale also allow for labor specialization and allocation, as well as the allocation of high fixed costs over vast production volumes, according to the idea. It's crucial to keep in mind that economies of scale can happen for a variety of reasons, including organizational, technical, and financial ones.

Mwania (2020), points that firm size is closely linked to capital adequacy because it is possible for larger firms to raise massive profits. It is positively related to ROA which is an indicator that large firms have the ability to achieve economies of scale which lowers operational costs hence improving their performance.

Burson and Amato (2007), opined that large firms hold large tangible assets that can be put to use as collateral for external fund borrowing. Similarly these firms are able to easily access debt market at lower costs to gain tax advantages. It can be argued that the larger the assets a firm owns, the more its ability to undertake many projects with greater returns. Lee (2009) contends to the argument that the quantity of assets owned by a firm has an influence on the level of profitability of the said firm from one financial year to the next.

### **2.3.3 Market Power**

The ability of a firm to successfully influence the prices of its products or services in the broader market is referred to as market power. According to Wandia (2012), enterprises with market power can raise prices without losing customers, whereas those with low market power cannot raise prices successfully and hence lose customers to competitors. In contrast to the low market power holder, a firm with great market power can individually raise prices and make bigger returns.

According to D'Souza and Lai (2009) research, a firm's market position can be directly influenced by its financial performance that is mainly reflected by its profitability. Profitability in this case can be broken down into two main parts: net turnover and profit margins. Jones and Hill (2008), however, takes the position that both net turnover and profit margin can influence firm's profitability. Meaning a high turnover is as a result of efficient use of assets owned by the company, whereas a higher profit margin is a reflection of substantial market power.

### **2.3.4 Capital Structure**

The capital structure of a company is critical in determining its financial performance. A blend of equity and debt finance is referred to as capital structure. According to Mirza and Javeth (2013), the decision on how to finance a firm's operations ultimately affects its financial performance. Management teams has the obligation to decide on what sources of funding best suit the company

with maximization of shareholders value in mind. Hence, the decision on the most optimal source of funds depends on various factors. Acquiring debt increases the risk of default which ultimately leads to bankruptcy arising from failure to pay current and accruing debts. If well used, debt financing is an inexpensive source of funding owing to tax benefits accruing as well as increased scrutiny due to obligations arising.

Stiroh (2008a) points out that firms with low leverage due to high profitability are able to finance their own operations unlike those that are high leveraged as they face high risks of bankruptcy. Company's financial performance is hence positively shaped by the total assets owned, greater assets meaning less risk. Mwangi and Birundu (2015), however note that there is need for management teams to be cautious in accruing debt. Objective analysis of a business entity's capacity to pay its debt currently and in the future ought to be thoroughly interrogated.

## **2.4 Empirical Review**

Related vs product diversification, type of relatedness, top manager skill, industry structure, and style of diversification are some of the interjecting and dependent variables that affect the complex link between productivity and diversification. In both developing and underdeveloped nations, various trials in the domain of diversification strategy and financial performance have been conducted. Some of the studies showed a positive relationship, others negative with some showing a U-shaped relationship.

Ndung'u, Kibati and Stella, (2019) investigated the relation of product diversification and economic performance of industrial firms and realized that the two variables have insignificant negative relationship. Using a ten year period of panel data from 2007-2016, their investigation showed that product diversification have insignificant effect on financial performance. Their study used a sample of forty nine companies and measured product diversification against ROA and EBITs. The study findings further indicated that the insignificant negative relationship can be attributed to the fact that one or two of the company products contributed to the bulk income generated while other products had limited contributions to company income.



Werner and Montgomery (1988), and Hitt et al. (1997), in their review on significance of product focus on firm performance observed that diversification can worsen performance of companies by increasing harmonization and regulator costs, as well as incompetence when shifting core competencies to diverse markets. Yan, Talavera and Fahretdinova (2016) shared similar sentiments in their investigation on product diversification on bank performance of Azerbaijan banks. Using data from six kinds of loans and four deposits for period 2011 to 2015, the researchers relied on secondary data and regression analysis and came to a conclusion that a negative association existed between loan-based portfolio diversification and profitability. Additionally, results indicated a substantial positive relationship with bank profitability and deposit-based diversification.

Scholars such as Anne (2012), shows a positive D-FP relationship. Her research looked into the impact of diversification policies on the performance of Kenyan commercial banks. The study's goal was to see what impact market, internal growth, and product growth initiatives have on Kenyan commercial banks' productivity. Study population included 42 banks. Employing descriptive statistics for data analysis, the findings posed a strong relationship between bank performance and internal growth diversification strategies with commercial banks that employed mobile and internet banking as product diversification strategies indicated a positive performance.

Njuguna, Kaswira, and Orwa (2012) found a substantial positive PD-FP association in a study on the impact of product diversity on the financial performance of non-financial enterprises listed on the Nairobi Securities Exchange in Kenya. The goal of their research was to see how product variety affects the performance of these businesses. Investigators used descriptive – correlational survey designs with primary and secondary data obtained through the use of questionnaires provided to 135 senior managers in a sample population of 45 non-financial enterprises in NSE, Kenya. For a span of five years, secondary data was gathered through annual audit reports (2011-2015). Regression examination of the data indicated firms that had a range of diversified products had better financial performance.

Mwania (2020) studied DT-SACCOS during the period of 2015-219 to establish product diversification effect on financial performance of DT-SACCOS. By use of descriptive research, statistical analysis of the 43 DT-SACCOS was conducted. Regression model was adopted for study

analysis. Heyerdahl-Hirschman Index employed as a measure of diversification while ROA as financial performance measure. The research findings stipulated a robust connection between liquidity and the organization's performance. Results further indicated management efficiency and firm size had a weak positive relationship.

Boz, Yigit, and Anil (2013) investigated the relationship between corporate diversification and business performance in Turkey and Belgium. A total of 198 Turkish and 114 Belgian business groups were studied in this study. Varying levels of diversification have different effects on corporate financial performance, according to the studies. Diversification organizations also had excellent performance, according to the findings. This is because diversifying enterprises are able to utilize synergies that arise as a result of differentiating advantages and cost benefits.

Olajide Patrick (2012) wanted to know how manufacturing companies listed on the Nigerian Stock Exchange's diversification strategy affects their performance. Olajide estimated the dependent variable using an accounting-based measure of return on assets, with the independent factors being the size of the company, its age, diversity, ownership structure, and leverage. Secondary data was gathered from the sample companies' annual reports and financial statements, as well as the Nigerian Stock Exchange's annual publication. Panel regression analysis with fixed, random, and Hausmann tests was used to analyse the data. According to the research, manufacturing organizations will diversify more as their size grows. Firm diversification was proven to be beneficial and compelling, implying that diversifying firms had a higher rate of return on assets than non-diversified firms. On the other side, the ownership structure was discovered to have a negative link with corporate performance. As the number of shareholders expands, diversity may deteriorate, thereby influencing the firm's choice. According to Ojo (2012), there is a link between corporate diversity and financial performance of Nigerian organizations, with the purpose of diversification being to increase financial performance in order to achieve greater market power and agency motive.

According to recent studies from industrialized countries such as Japan, Germany, China, and the United States, diversification techniques have a minimal effect on a corporation's worth after the average income level; however, the cost is higher than the benefits. According to Khanna and

Palepu (1997), environmental factors such as market gaps in emerging countries, business-government relations, production markets, and labor markets may provide opportunities for businesses to execute diversification strategies.

Palich et al. (2000), sought to investigate what relationship exists between diversification and firm value, their findings indicating an inverted U-shaped relationship. Meaning that with increasing degree of diversification to a regular level, performance also increase but decreases after an average level.

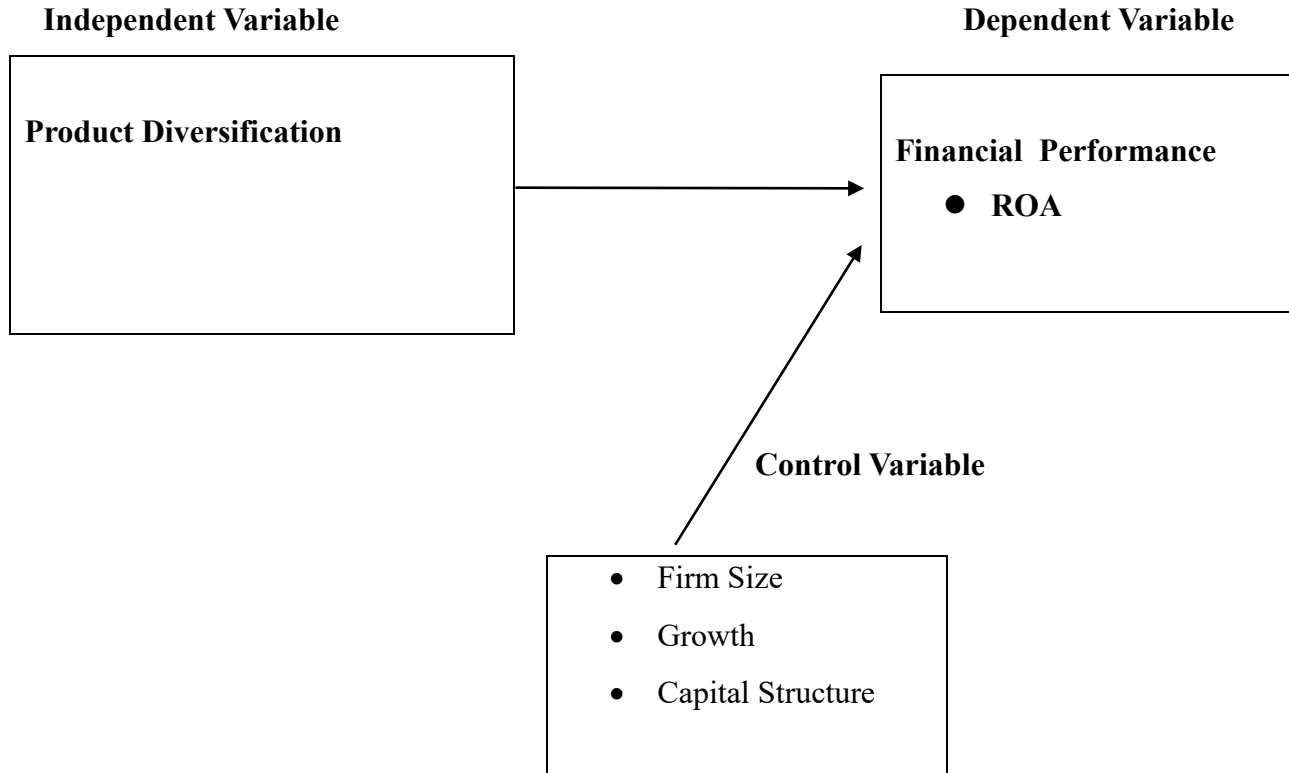
## **2.5 Summary of Empirical Review**

It is evident that determinants of financial performance are forming part of the main agendas in corporate meetings and strategy in the telecommunication sector worldwide. Regardless of all the existing theory financial performance, the uniqueness of each market need to be analyzed carefully as different factors of financial performance will have different weighting on probability. Factors also keep changing as frequently as technology does hence a once off study may not be sufficient in the long term but may need reviews from time to time. Choice of the relevant models to apply is equally important if the profitability is to be sustained.

The relationship between product diversification and financial performance was studied in the literature. In a literature study, two ideas were proposed to explain why telecom businesses diversify their resources and how diversification is expected to enhance profitability while lowering risk. Peer-reviewed empirical studies have produced mixed findings. Some studies have discovered a strong link between product variety and economic performance, whereas others have discovered a weak or nonexistent link. Despite the fact that it is one of the economy's primary movers, local studies focused on the banking and manufacturing sectors' income, revenue, and geographic diversity, with less attention provided to the telecommunications business. As a result, the majority of the studies considered were carried out outside of Kenya, limiting their applicability. As a result, there is a knowledge gap in Kenya about the financial implications of product heterogeneity for telecommunications businesses.

## 2.6 Conceptual Framework

The association between diversification strategy of a product and financial performance of Kenyan telecoms providers is depicted in the graph below.



**Figure 2.1: Conceptual Model**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This section lays out the study approach that was used. The investigation design, demographic, sample, data collection techniques, and data processing procedures are all examined.

#### **3.2 Research Design**

Research design is the organization of an investigation. According to De Vaus (2001) research design ensures that the data obtained enables investigators to effectively address the study question in an unambiguous and logical manner. The study adopted a descriptive cross sectional research design. The design was deemed relevant because the investigator seek to describe the nature of things as they are (Khan 2008). Secondly, the design best fit the study given the nature of the phenomenon being studied and how they relate is of a major interest to the researcher. Lastly, descriptive research explicitly and reliably represented the variables which aided in providing a response to the research queries (Cooper &Schindler 2008). Hence the design was deemed not inappropriate because the primary interest was to determine how product diversification employed by telecommunication providers in Kenya affects their economic performance.

#### **3.3 Population**

This is a totality of units of interest such as persons or events as indicated by, Burns &Burns, (2008). The term "population" refers to a group of elements with similar features or behaviors (Mugenda and Mugenda, 2003). The populace of the study comprised of telecommunication Service Providers operating in Kenya. According to the Communication Authority of Kenya (2015-2020), there are currently 19 firms offering telecommunication services in the country.

#### **3.4 Data Collection**

Secondary data was used in the study. Annual financial reports published in NSE, Communications Authority of Kenya and company websites were sourced from the period of 2015 to 2019.

### **3.5 Diagnostic Tests**

The researcher used many diagnostic tests to verify the feasibility of the study model. Normality tests, autocorrelation tests, multicollinearity tests, heteroscedasticity tests, and even autocorrelation tests were among them. The sample data was tested for normality to see if it came from a normally distributed population. If the variable was not normally distributed, the logarithmic transformation method was used to transform and standardize it.

Multicollinearity occurs when independent variables in a model are correlated. To check for multicollinearity in the model, the Variance Inflation Factor (VIF) was used. Multiple collinearities in a variable were excluded from the analysis. The degree of correlation between a time series and a lagged version of itself over successive time intervals is measured by autocorrelation. The Durbin-Watson Statistics were used as a measure of autocorrelation, and robust standard errors were used in the modeling if the assumption was broken. Heteroscedasticity tested whether the variance of the errors from the regression model was reliant on the independent variables. The study assessed for heteroscedasticity using a graph of standardized anticipated and residual values.

### **3.6 Data Analysis**

Analyzing data entails cleaning, transforming, and organizing data in order to gather knowledge for corporate decision-making. The purpose of data analysis is to extract useful information from data and make well-informed decisions based on it. Qualitative and quantitative methodologies were used in the data analysis operations.

To examine quantitative data, expressive information such as percentages, (mean) average, and standard deviation were used. According to Orodho (2008), descriptive statistics allow researchers to convey the mean scores and variability of scores in a sample by using one or more figures (e.g., mean, median, and variance). According to Mugenda & Mugenda (2003), percentages have a significant benefit over more sophisticated statistics for communicating results to a wide range of readers. The information was then be provided in the form of frequency tables and graphs.

### 3.6.1 Analytical Model

The regression analysis model is used to determine the relationship between the dependent variable (financial performance) and the independent variables (product diversification)

The regression model is as follows:

$$Y = a + \beta_{1t} X_{1t} + \beta_{2t} X_{2t} + \beta_{3t} X_{3t} + \beta_{4t} X_{4t} + \varepsilon$$

Whereby

$Y$  = Financial performance

$X_1$  = Production diversification

$X_2$  = Firm size

$X_3$  = Growth

$X_4$  = Capital Structure

$a$  = Constant

$\beta_{1-4}$  = coefficients

$\varepsilon$  = Error term.

$B_1 B_2 B_3 B_4$  = the rate at which  $Y$  changes as a function of a unit change in Independent and control variable.

### 3.6.2 Tests of Significance

The test of significance is the official process of making a comparison between observed data with the claim. (Hypothesis). It is the fact being evaluated. Hence the parametric tests used include; F-test and T-test. The F-test will provide relevance to the entire model employed as the T-test will show the statistical relevance of individual variables.

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.1 Introduction

The results of the data analysis are discussed in this section. A discussion of descriptive statistics kicks off the chapter. These descriptive statistics help to comprehend some of the aspects under examination by giving a clear image of the data acquired. The descriptive statistics that will be discussed are those that deal with mild trends and data variety. The averages, standard deviations, minimums, and maximums are all calculated. The results of several data validity tests, as well as the consequences of retrospective analysis, are also discussed in this chapter.

#### 4.2 Descriptive Statistics

From 2015 to 2019, 19 companies were investigated over a five-year period. The projected data points for each variable investigated were 95. Out of the 95 projected data points, 95 were collected. This translates to a 100% response rate, and the data was deemed enough for research. The tabulation's results are shown in Table 4.1.

**Table 4.1: Response Rate Table**

	<b>Expected Data</b>	<b>Available Data</b>	<b>Response Rate</b>
ROA	95	95	100%
Diversification	95	95	100%
Firm Size	95	95	100%
Growth	95	95	100%
D/E	95	95	100%

**Source: Author (2021)**

In terms of ROA, the average return was 0.0104 percent, or 1.04 percent. The conclusion is that investors who invest in telecommunication companies should expect a 1.04 percent return on their investment. This figure, on the other hand, was found to be less volatile due to the low standard deviation of 0.1655. -1.221 and 0.3302 were the least and greatest results, respectively. These



findings reveal that an investor should expect a negative ROA of -122 percent at worst and a return of 33.02 percent at best. The standard deviation was determined to be 0.9859, while the average diversification was found to be 6.501. 4.108 and 8.625 were the maximum and minimum values, respectively. Another variable explored was growth, which was gathered through financial records. The average rate of growth was found to be 2.227, with minimum and maximum rates of 0.1978 and 11, respectively. The standard deviation was significantly higher than average, at 2.411, indicating that businesses in the industry are growing in a comparable manner. The average firm size was 9.986, with 8.059 and 11.6 as the lowest and highest numbers, respectively. An overview of descriptive statistics can be found in Table 4.2.

**Table 4.2: Table for Data Summary Statistics**

Descriptive Statistics					
	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
ROA	95	-1.2214	0.3302	0.010354	0.1654956
Diversification	95	4.1082	8.6252	6.501403	0.9859064
Firm Size	95	8.0591	11.6036	9.986099	0.8929127
Growth	95	0.1978	11.0031	2.226773	2.4118747
D/E	95	0.0552	8.3427	1.368465	1.5153690
Valid N (listwise)	95				

**Source: Author (2021)**

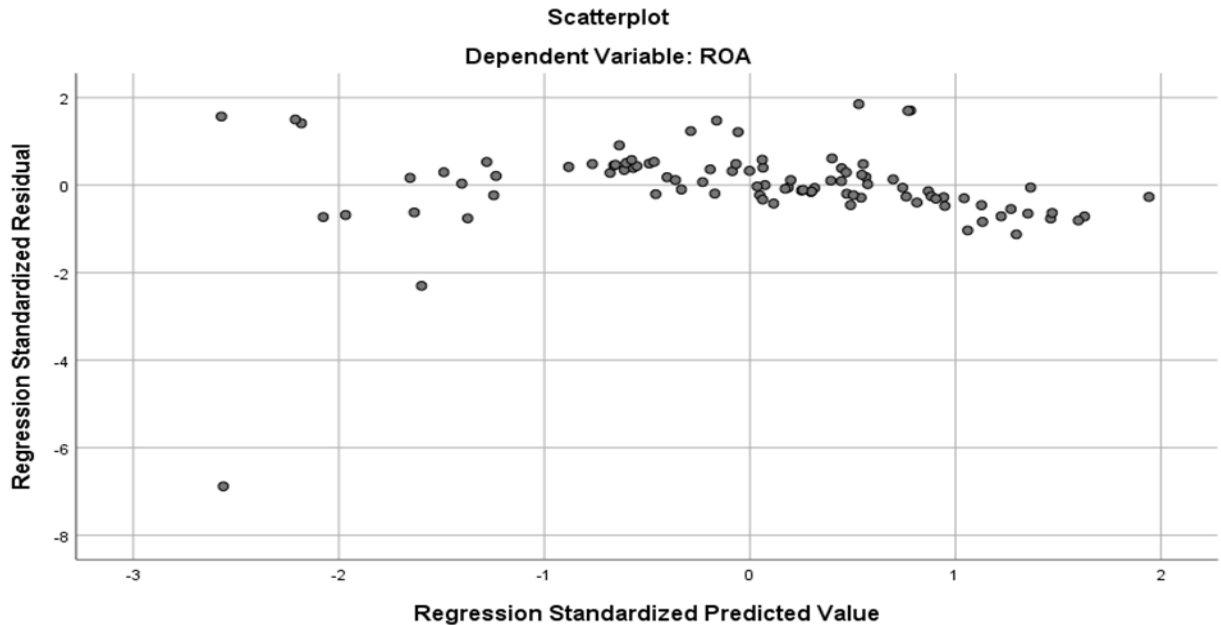
### **4.3 Data Validity and Reliability Tests**

Diagnostic tests are performed on the data before it is used in analysis to confirm its suitability.

The tests that were performed are detailed in this section.

### 4.3.1 Test for Heteroscedasticity

Heteroscedasticity was investigated using a graph of standardized anticipated and residual values. After that, the scatter point distribution around zero was noted. As demonstrated in figure 4.1, the plots are evenly dispersed. This shows that the data does not have any heteroscedasticity.

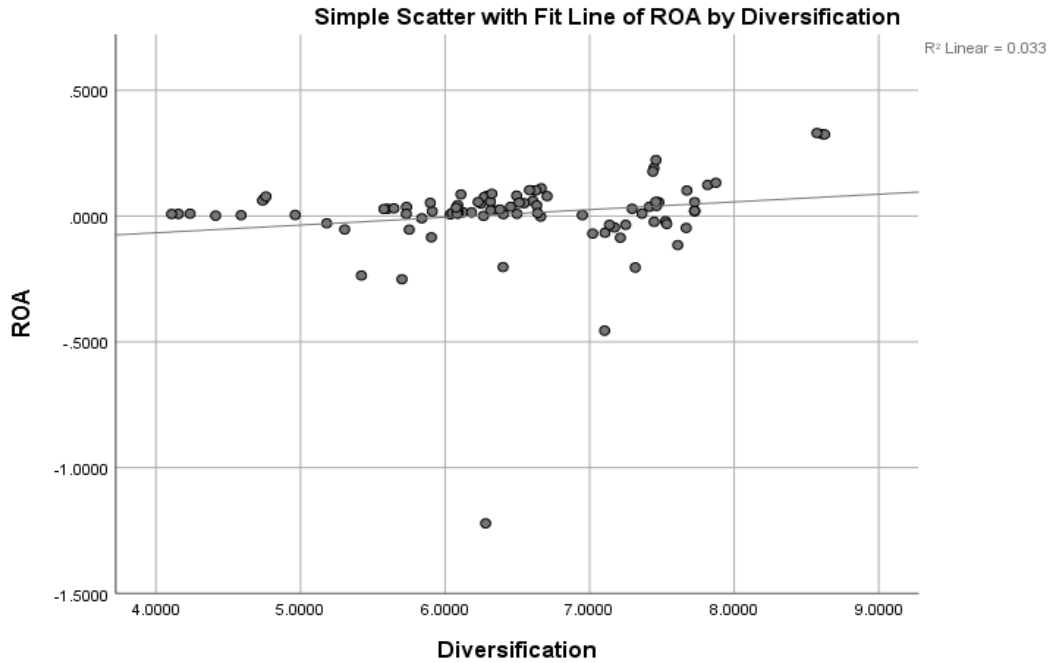


**Fig 4.1: Heteroscedasticity Test Graph**

### 4.3.2 Linearity Test

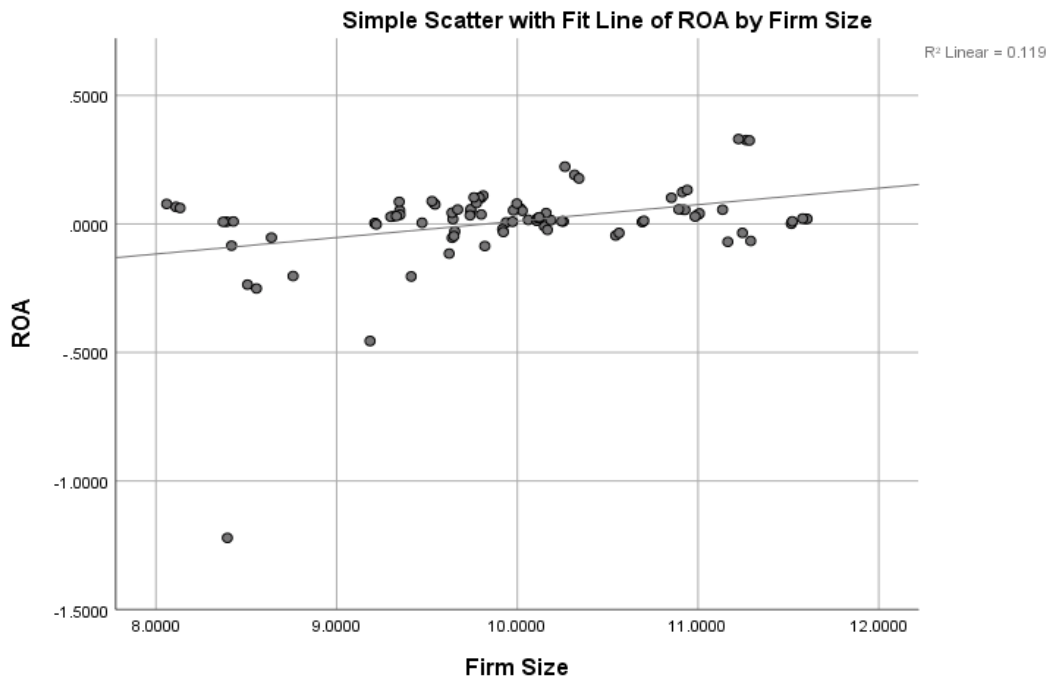
The assumption of regression is that the variables have a linear relationship, hence a linearity test was performed. This test was carried out by creating scatter graphs and observing any patterns or linearity in the results. A line of best fit was used to help with this. The slope of the depicted lines revealed that all independent variables were linearly related to the dependent variable, albeit with varied magnitudes.

ROA and Diversification exhibited a positive link with a linear relationship coefficient, as demonstrated in Figures 4.2. As a result, increasing the average duration in which data was collected resulted in an increase in ROA.



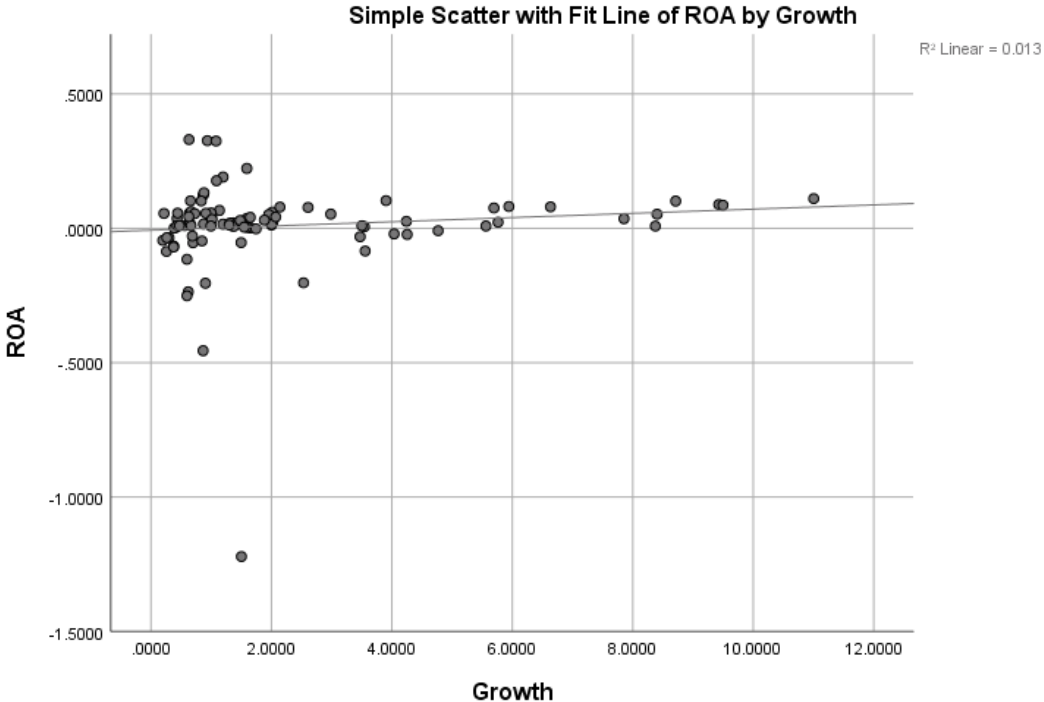
**Fig 4.2: Diversification Linearity Test**

Firm size has a positive correlation with ROA, implying that increasing firm size leads to increased ROA and vice versa.



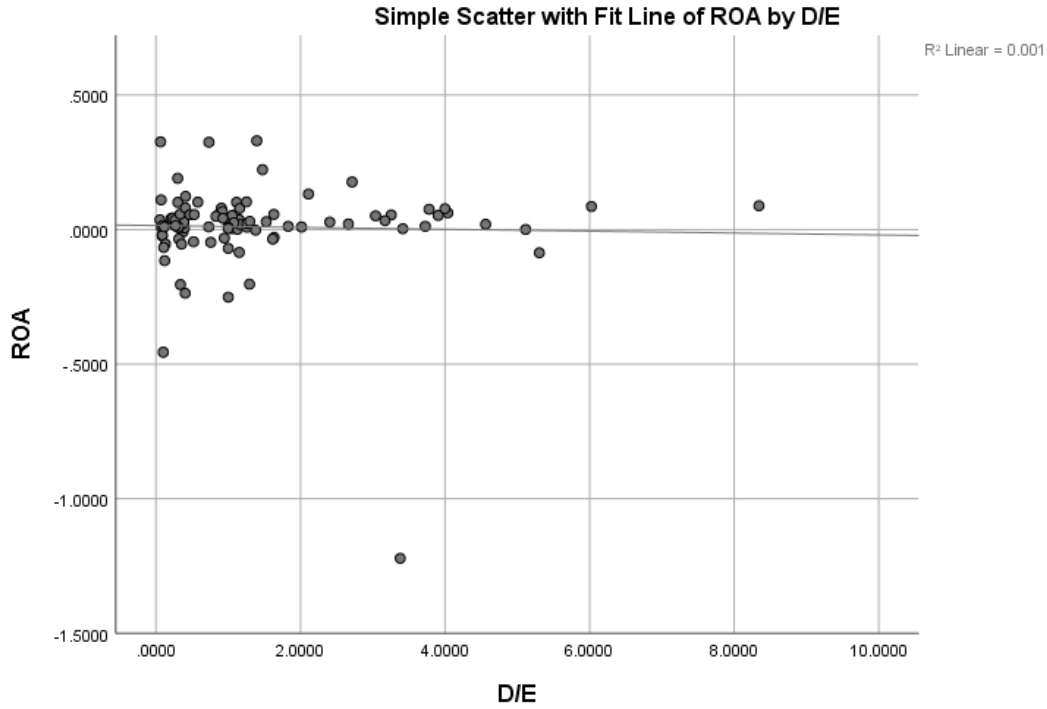
**Fig 4.3: Firm Size Linearity Test**

Growth showed a slight positive relationship with ROA hence showing an increase in growth leads to an increase in ROA and vice versa.



**Fig 4.4: Growth Linearity Test**

Capital structure showed a slight negative relationship with ROA hence showing a decrease in debt to equity ratio leads to a slight increase in ROA.



**Fig 4.5: Capital Structure Linearity Test**

### 4.3.3 Test for Multicollinearity

To see if there were any independent variables that were strongly related to each other, multicollinearity was assessed. The test was conducted using VIF, with a cutoff score of ten. All variables had an extremely low VIF score, with the maximum being 2.431, which was much below the cutoff. Because of the low VIF values, it was determined that the variables were not tightly related to one another and that they could all be included in the final regression model. Table 4.3 summarizes the findings of the tests.

**Table 4.3: Multicollinearity Test Results Table**

Coefficients <sup>a</sup>			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Diversification	0.429	2.332
	Firm Size	0.411	2.431
	Growth	0.880	1.136
	D/E	0.979	1.022
a.	Dependent Variable: ROA		

**Source: Author (2021)****4.3.4 Test for Autocorrelation**

In testing for autocorrelation, Durbin-Watson test for first order autocorrelation was used. The null hypothesis was tested and found out that there was no autocorrelation in the residuals. The results were interpreted by comparing with 2 to determine if no autocorrelation existed, or if it existed, whether it was positive or negative. The test returned a score of 2.038 which led to the conclusion that there was a slightly negative autocorrelation but was not severe enough to cause an alarm. No adjustment was made based on that. The results are as shown in the table below.

**Table 4.4: Durbin-Watson Test Results Table**

Model Summary <sup>b</sup>		
Model	Std. Error of the Estimate	Durbin-Watson
1	0.1519674	2.038

**Source: Author (2021)**

#### 4.4 Correlation Analysis

To determine the link between the variables in the study, the Pearson correlation coefficient was used. The purpose of the test was to see how the variables were related to one another and, as a result, how they would influence one another. For each pair of variables, it showed the magnitude as well as the direction of change. Correlations were also found to be significant at both the 5% and 1% significance levels in the study. With a correlation of 0.183, return on assets (ROA) was found to be favorably connected with diversity. With a value of 0.345, ROA was likewise found to be positively linked with company size. With a value of -0.032, ROA was shown to be adversely connected with capital structure. It was also found to be favorably correlated with growth, with a coefficient of 0.114.

Diversification was found to be inversely connected with growth, aside from the ROA. Diversification has no good impact on growth, as evidenced by this. Diversification and ROA increases were found to have a beneficial impact on firm size. This indicated that by reducing those variables, company size may be reduced. Growth was found to be inversely associated with business size, with a correlation of -0.318. The strongest correlation between firm size and diversification was discovered, suggesting that firm size has a major impact on variety. The findings are summarized in Table 4.5.

**Table 4.5: Correlation Coefficients Summary Table**

Correlations						
		ROA	Diversification	Firm Size	Growth	D/E
ROA	Pearson Correlation	1	0.183	.345**	0.114	-0.032
Diversification	Pearson Correlation	0.183	1	.755**	-.254*	-0.034
Firm Size	Pearson Correlation	.345**	.755**	1	-.318**	-0.012
Growth	Pearson Correlation	0.114	-.254*	-.318**	1	0.138
D/E	Pearson Correlation	-0.032	-0.034	-0.012	0.138	1

**Source: Author (2021)**

#### 4.5 Regression Analysis and Hypotheses Testing

The specific equation that ties the independent factors to the dependent variable was determined using regression. It was performed in tandem with the ANOVA test, which was used to determine the model's significance. The R<sup>2</sup> test was used to determine how much the independent factors influenced the dependent variable.

The model's R square was calculated to be 0.193, as stated in Table 4.6's summary. This shows that just 19.3% of the changes in the ROA are influenced by the variables in question. Other variables account for 80.7 percent of the fluctuations in ROA, indicating that there are other factors at play.

**Table 4.6: Model Summary Results Table**

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.439 <sup>a</sup>	0.193	0.157	0.1519674	2.038

**Source: Author (2021)**

ANOVA was used to test the model's significance. The test resulted in a significant p-value of 0.01. This demonstrates that the predictor factors may be used to accurately forecast ROA. Table 4.7 summarizes the findings.

**Table 4.7: ANOVA Test Results Table**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.496	4	0.124	5.370	.001 <sup>b</sup>
	Residual	2.078	90	0.023		
	Total	2.575	94			

**Source: Author (2021)**



The constant of the equation linking the dependent and independent variables is -0.863, according to regression results. Firm size and growth have positive coefficients, according to the regression results. The firm size coefficient is 0.561, indicating that a change in asset size has a minor impact on ROA. The other factors all showed tiny coefficients, indicating that they have a minor impact on ROA but not so minor as to be ignored. Their p-values are relatively low, indicating that their effect is substantial, with the exception of diversification and capital structure, which have coefficients of 0.2222 and 0.489, respectively. As indicated in Table 4.8, the coefficients for firm size and diversification, growth, and capital structure are 0.561, -0.178, 0.257, and -0.066, respectively. This means that a unit increase in diversity results in a -0.178 unit decrease in ROA, but a unit increase in growth results in a 0.257 unit rise in ROA. When it comes to firm size, every unit increase in firm size results in a 0.561 unit rise in ROA. To increase ROA, management must expand company size, grow the business, and reduce diversification.

**Table 4.8: Regression Test Results Table**

Coefficients <sup>a</sup>								
Model				Standardized Coefficients	t	Sig.	Collinearity Statistics	
				Beta			Tolerance	VIF
1	(Constant)	-0.863	0.196		-4.407	0.000		
	Diversification	-0.030	0.024	-0.178	-1.230	0.222	0.429	2.332
	Firm Size	0.104	0.027	0.561	3.797	0.000	0.411	2.431
	Growth	0.018	0.007	0.257	2.546	0.013	0.880	1.136
	D/E	-0.007	0.010	-0.066	-0.694	0.489	0.979	1.022

**Source: Author (2021)**

#### **4.6 Discussion of Research Findings**

Diversification, company size, growth, and capital structure are all independent variables that affect the return on assets of telecommunication companies, according to the study. Diversification has a positive relationship with ROA, which supports D'Souza and Lai's (2009) findings that a firm's market position can be directly changed by its financial performance, which is primarily

expressed by profitability. It differs with Ndung'u (2019), who investigated how product diversification affected the financial performance of manufacturing enterprises in Kenya and showed a negative but minor link between differentiation strategy and financial performance of manufacturing entities.

Growth was also found to have a positive impact on ROA, confirming Montgomery's (2008) assertion that economic growth as a component of financial performance measures is crucial in gaining a better position in the financial market because market value is a reflection of predicted future profits.

There was also a correlation between the company's size and its return on investment. As a result, the sizes of Kenyan telecommunications businesses have reached a point where economies of scale are being realized. This is in keeping with Mwanja's (2020) observation that business size is positively associated to ROA, which is a measure of a large firm's ability to attain economies of scale, lowering operational expenses and hence boosting performance.

The study's findings demonstrate that, in addition to diversity, growth, and firm size, many other factors influence ROA. As a result, it's vital for business stakeholders to conduct extensive research in order to discover the factors that could affect the profitability of their investments.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

The key motive for the research was to meet the study's objectives. The findings, summary, and recommendations of the study are attempted to be established in this chapter. Finally, the limits and future research directions are discussed.

#### 5.2 Summary of Findings

The goal of the study was to see the effect of product diversification on financial performance of telecommunication firms in Kenya. ROA was the dependent variable, whereas diversification, firm size, capital structure and growth were the independent variables.

Secondary data was used to identify different correlations between the study variables, which were then analyzed with SPSS software. The telecommunications industry was represented by 19 companies in the survey. The data was gathered from 2015 to 2019, with the goal of obtaining 95 data points with 100% of the data being obtained. According to the summary statistics, ROA had a mean score of 0.0104, which meant that for every shilling invested in the industry, 1.04 cents was returned on average. The average growth rate was 2.227, with minimum and maximum rates of 0.1978 and 11, respectively. The standard deviation, at 2.411, was much greater than the average, showing that businesses in the industry are increasing at a similar rate.

Based on the findings of the multicollinearity tests, VIF generated a range of 2.332 for diversification and 2.431 for firm size. According to the regression results, diversity, company size, and growth were all positively related to ROA, with coefficients of 0.183, 0.345, and 0.114, respectively. According to the regression results, firm size had a 0 significance level, growth had a 0.013 significance level, and diversity had a value greater than 0.05, making it insignificant. A R<sup>2</sup> value of 0.193 and a Durbin Watson value of 2.038 were reported.

### **5.3 Conclusions**

On the basis of the above-mentioned study findings, certain inferences can be drawn. We may conclude that the study results were dependable enough to create solid findings in the field of study because the response rate was 100% for all variables over the needed 60% level. Linearity and normality tests were performed, suggesting that the data was normally distributed. The multicollinearity VIF test yielded values of 1.022 to 2.431, which are in the 1–10 range, indicating that multicollinearity does not exist. The variables were found to have a low VIF, leading to the conclusion that there was no significant link between them.

The adjusted R<sup>2</sup> value of 0.193 was derived based on the regression results, indicating that the independent variables were responsible for 19.3% of the variation in financial performance for publicly traded companies. ROA was also found to be favorably related to diversification, with a correlation of 0.183. Return on assets (ROA) was shown to be positively correlated with business size, with a correlation of 0.345.

### **5.4 Recommendations**

According to outcome, diversification has a positive influence on ROA and hence the researcher recommends that managers of the various players in the telecommunication industry to come up with better management alternatives that assist in proper and effective implementation of diversification strategies.

As diversification, firm size and growth have a positive effect on ROA, then the researcher recommends to policy makers and government to conceptualize new policies and regulations that will govern the telecommunication industry to better returns for the companies there. With the above recommendations, managers in the telecommunication industry will be assisted to make better decisions in the future. This will help people make informed decisions and develop new strategies.

### **5.5 Limitations of the Study**

The researcher was made aware of a number of constraints that impeded the study's results. The findings may not apply to other industries, which make up a bigger percentage of Kenya's firms, because the study concentrated on telecommunication companies. Furthermore, given the study

was conducted in Kenya, it may be limited to the Kenyan market and other countries with similar economic systems. Countries with different economic structures than Kenya's may find that the current study's link does not apply to them, so it should not be used as a generalization.

The study's adjusted R squared value found that the total model only explained 19.3% of the variation in ROA, showing that there may be other key factors influencing telecommunication businesses' profitability. Internal business aspects may be a constraint to the study's breadth, as more external elements may influence organizations' financial success, necessitating a more diverse assessment of variables when applying the current study's conclusions in various circumstances.

### **5.6 Suggestions for Further Research**

In order to widen the scope of investigation, the report makes several recommendations for further research. Future researches should consider other product diversification variables.

Future research should look into broadening the scope of the study to include both internal and external factors that may have influenced the business community's performance levels.

Future research would need to look at other controllable variables that may be affecting telecommunication businesses' performance, based on the study models explaining 19.3 percent of the variation in financial performance. Similar studies should be conducted on a different population, suggesting that study outside of the telecommunications sector, particularly in nations with different economic systems than Kenya, should be conducted.

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