

**SALES FORECASTING STRATEGIES AND PERFORMANCE OF
MOBILE PHONE OUTLETS IN NAIROBI, KENYA**

BY

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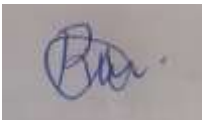
**A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILMENT
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DECLARATION

STUDENT'S DECLARATION

This research project is my work that is original and has never been provided in any other institution for the award of a degree.

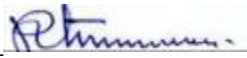
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ABSTRACT

Forecasting enables businesses to precisely quantify their costs and revenues, allowing them to accurately anticipate both their short-term and long-term performance. The main purpose of this study is to determine the sales forecasting strategies commonly used by mobile phone outlets in Nairobi Kenya. The study also establishes effects of sales forecasting strategies on the performance of mobile phone outlets in Nairobi Kenya. Literature on sales forecasting and organizational performance is presented in this study. The literature is linked to the organizational theories that are relevant to the sales forecasting field. The study employs descriptive design to facilitate data collection and analyzing to achieve the research objectives. The study population included 50 mobile phones retail outlets where Owners or managers of these shops were the study's target audience for the questionnaire. The study found that judgmental method is commonly used in retail stores to forecasts their sales. All sales forecasting strategies had a p-value less than 0.05, which indicates that they have significant relationship with performance of mobile phone retail outlets in Nairobi. There was a significant relationship between sales forecasting and performance of retail stores.

Keywords: *mobile phone retail outlets, sales forecasting strategies*

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CHAPTER ONE: INTRODUCTION

1.1 Background

One of the most prevalent causes of sales forecasting issues is when salespeople make subjective judgments of the potential of an opportunity rather than relying on factual information. In contrast, Jimenez et al. (2017) argue that intuition is usually inaccurate, which is why more than 40% of sales operations directors identified seller subjectivity as the most significant hindrance to effective forecasting. Despite its importance, a seller's gut feeling is not the most trustworthy source of information when it comes to sales forecasting. When it comes to practically closed possibilities, sellers are frequently overly subjective, and this tendency is more noticeable as the sellers' remaining time on the market shrinks.

Sales managers should invest in, and then implement, the integration of training, processes, and technology (Karmy & Maldonado, 2019). When salespeople are taught to analyze prospects based on their previous experience, buyer roles, and decision-making process while using exact and up-to-date data, they are able to perform objective evaluations of prospects. As a result of low data quality, current transactions suffer in a variety of ways. Long-term sales forecasting is challenging because sales companies are not permitted to build prediction models using prior data. One of the characteristics that makes long-term sales forecasting difficult is this constraint. When money is spent to create a documented strategy for managing and monetizing data as a sales asset, the relevance of data quality, process integration, and system integration is highlighted. Explain to the salesmen the importance of keeping the data as up to date as possible. First, make certain that the vendor's information is correct. It is imperative to find a strategy to connect these facts so that you can illustrate the link between prior accomplishments and current prospects.

The focus of this research is such enterprises due to the quickly rising number of mobile phone retail locations in Nairobi, Kenya, as well as the compelling necessity to integrate their marketing and customer support (Ma Fildes & Huang, 2016). The nature of the business of selling phones in retail environments, as well as the methodologies used to anticipate sales, add to the complexity of demand forecasting. Retailers have traditionally employed spreadsheet-based forecasting, which requires analysts to manually sort, arrange, and compute all of the data (Marmot & Allen, 2020). This procedure is not optimal because it may take a long period (Rybak & Manowska, 2018). For this reason, it is difficult to develop

the organization without using retail technology such as advanced analytics due to the length of time necessary, the related expenditures, and the possibility of making mistakes.

1.1.1 Sales Forecasting Strategies

Sales forecasting strategies are plans of actions designed by businesses to achieve the anticipated revenue from sales. A sales forecast is an estimate of how much a company will sell over a specific time period (such as a quarter or a full year). This is a characteristic shared by the most accurate sales estimates. Sales teams make estimations based on the qualities of possible clients. The projection's accuracy will increase or decrease depending on whether the persons who are potential consumers are true decision makers or merely influencers. The specifics of what will be presented should serve as the basis for one's estimates. This should then be predicated on issues presented by prospective clients, to which your company provides a one-of-a-kind solution. Sales teams' accuracy improves every time they move (even if only momentarily) closer to the center of the action.

Sales forecasting strategy is the process of predicting future demand and sales growth using benchmarks, historical data, and other data and considerations. Most decisions made by executives today are based on some prognosis. Achieving accurate demand and trend forecasts is no longer a luxury but a necessity for managers who have to deal with seasonality and abrupt variations in demand levels as well as price-cutting measures by competitors and economic swings (Sagaert et al., 2018). Forecasting strategies include judgmental methods, experts opinion Approach, counting methods, historical approach, time series analysis, causal methods and market testing approach (Rybak & Manowska, 2018). The pricing technique of sales varies, as do the accuracy measure. If the forecast is inaccurate, the Management must decide how much inaccuracy they can tolerate. According to Karmy & Maldonado (2019), forecasters can then decide which strategy to utilize based on cost vs. accuracy value. After clarifying the components and their relationships, the forecaster can build a causal representation of the proposed model that captures both the facts and the logic of the situation, which is, after all, the foundation of effective sales forecasting Information Technologies. There are several techniques to sales forecasting, including counting methods, the historical method, time series analysis, causal approaches, and market testing.

It is critical to have an accurate sales forecast in order to make informed decisions about how to meet profit objectives, the potential revenue from new products, and whether or not to increase workforce numbers (Rybak & Manowska, 2018). Given the fact that hundreds of

commodities may be spread throughout a large number of different shops and delivery facilities, every prediction must be based on as much information as is practically possible. The unsold stock is normally computed on a monthly basis; but, under conditions involving rapid expansion, it may be estimated on a more frequent basis (Sagaert et al., 2018). Business owners may explore minimizing unsold inventory in order to prevent having to revise their projections of how much merchandise they will sell.

1.1.2 Organizational performance

Although the term organizational performance is widely used, it may apply to a number of distinct things. Despite the fact that the idea of organizational performance is based on a range of store-specific characteristics, experts struggle to agree on what exactly defines organizational performance since there is no widely agreed definition of the word. The word "organizational performance" may be interpreted in several ways, the number of which is proportionate to the number of studies that have used the term. According to the conclusions of Grimmer et al. (2017) meta-analysis of organizational performance, performance must be judged based on how well operations and finances are managed: The process of monitoring financial and market results, including as earnings, sales, return on investment for shareholders, and other financial measures, is referred to as "economic performance." On the other hand, operational performance focuses on observable measures such as customer contentment and loyalty, the organization's social capital, and the competitive advantage that may be gained from talents and resources (Njeri, 2017). A person's performance, the performance of a group, or the performance of the organization as a whole can all be examined at any given hierarchical level within an organization.

There are several measures that may be used to analyze an organization's success. This research examines many of the most well-known and effective ones that are currently accessible. The first is that it serves as a symbol of growth and survival: One of the most effective ways to frame the issue of organizational performance is in terms of the company's expansion and upkeep. According to this perspective, a corporation's performance is successful if it both achieves and continues to improve on the goals it has set for itself (Wawuda & Mungai, 2016). This approach is flawed because it fails to consider the company's internal and external contexts. One alternative approach is to employ ecological compatibility as measurement criteria. In order to monitor and analyze each component

thoroughly, a study of the organization's overall performance using a set of metrics is required. This restriction was imposed on the assumption that businesses can run more efficiently when they can find a balance between the demands of their external environment and the talents and resources available within the organization (Gandhi, Shaikh, and Sheorey, 2017). Incorporating a formal evaluation of strategic planning into the process of evaluating a business's success is an important component that should not be missed.

The notion of sustainability in organizational performance shows how an expert might choose the greatest possible set of indicators to achieve this aim. The successful execution of tasks is a requirement for a business's success (Wawuda & Mungai, 2016). Furthermore, task competence is a predictor of extraordinary performance. This is because members of a team who perform at higher levels are more likely to be competent in the tasks that have been given to them. To demonstrate that the money of investors are being utilized properly, to influence managerial decision-making by highlighting problem areas, to compare the performance of various departments, projects, and persons, and to exert control (Musyimi, 2016). These are just a few of the numerous reasons why professionals must evaluate and report on organizational performance. As a result, the definition of success in an organization may change depending on the circumstances.

1.1.3 Mobile Phone Outlets in Nairobi, Kenya

There has been a huge increase in the quantity and variety of mobile phones stocked in retail stores over the last several years (Kiunga, 2017). Today's mobile gadgets are significantly more sophisticated than previous generations and their usage has increased and evolved, leading to more phone outlets in Kenya more so in Nairobi city. While the majority of people still use their phones for conversation, a growing number of customers are coming to recognize the additional informational advantage of utilizing their phones (Kiunga, 2017). Nairobi has been at the forefront of mobile phone technology since 2007, which has had a significant influence on the day-to-day operations of millions of businesses and individuals. Even if the sender does not have a bank account, sending money via mobile money transfer is as straightforward and convenient as sending a text message. Over half of all users send money to distant relatives, pay for food or utility bills, or even pay for a night out and a cab journey home (Njigua, 2018). As a result, there is now a rise in the number of retail outlets in Nairobi that sell mobile phones.

In the year 2000, just 15,000 people were linked to mobile phone gadgets, but by 2010, that number had risen to more than 16 million (Njigua, 2018). And what was once supposed to be the realm of the mighty is now a consumer good that is transforming the fortunes of both new and old mobile phone retailers. Nairobi has become the worldwide hub for mobile money transfers as a result of Safaricom's M-Pesa to traditional banking and the rivalry it has generated from rivals seeking a piece of the action (Kiunga, 2017). This competition arose directly as a result of Safaricom's M-Pesa and Airtel Money.

1.2 Research Problem

Failure to achieve sales expectations on a consistent basis can have a long-term negative impact on a company's value. There are occasions when exceeding expectations is a negative thing. If a shop is unable to produce an accurate prediction of the amount of money it will make by recruiting employees and investing, it risks missing out on a number of opportunities (Miriti, 2016). The use of a sales forecast as a decision-making tool is advantageous to all businesses. As a consequence, budgeting, risk management, and general business planning are all simplified. Accurate sales forecasting allows businesses to appropriately manage their cash flow and allocate resources for future growth. One of the many ways that sales forecasts help sales teams achieve their goals is the ability to identify early warning flags in the sales funnel and make course changes before it is too late. Furthermore, forecasting enables businesses to precisely quantify their costs and revenues, allowing them to accurately anticipate both their short-term and long-term performance.

In today's highly competitive retail industries in Nairobi, growth opportunities are becoming increasingly scarce, and customers have the ability to influence how a company grows as a consequence (Mujuka et al., 2021). Returns are only permitted if the consumer intends to make more purchases in the future from both the retail location and the manufacturer. As a result, the store must devise strategies to enhance sales in order to increase client traffic, which will result in higher profitability. This may be performed by discovering the most successful sales forecasting tactics, which will aid in the development of methods for turning consumers into loyal customers by recognizing their requirements and desires and then developing a product that will please them and earn their loyalty (Robert et al., 2019). Choosing the most successful sales forecasting tactics is one approach to do this. This is possible by implementing the most effective sales forecasting tactics.

Despite the fact that a number of researchers from Kenya and other countries have examined sales performance methodologies and retail outlet performance, the goal of this study is to address the research gap. According to Mohamud and Mwangi (2021), continual replenishment has a considerable and favorable effect on the supply chain performance at retail outlets located inside Nairobi City County, this study does not explore other forecasting strategies. Samuel (2012) discovered a favorable linear relationship between inventory management automation and supermarket performance in his research on inventory management in the retail industry in Kakamega, which does not cover forecasting methods for organizations out at Kakamega. In a separate study, Oballah, Waiganjo, and Wachiuri (2015) discovered that inventory loss had a detrimental influence on organizational performance, but does not examine phone retail outlets. Inventory investment, on the other hand, and inventory record accuracy were discovered to have positive benefits on organizational performance. Despite Mwangi (2020) PhD dissertation claiming that sales implementation and planning have little influence on sales management practices, many SMEs in Nairobi actively support sales assessment. According to Mburu (2020) research, small and medium-sized organizations must plan ahead for corporate operations. According to the conclusions of a global study done by Singh and Kumar (2020) and Ausloos et al. (2018), small enterprises should place a larger focus on forecasting systems to encourage quick response and quality management. Both Boonsothonsatit (2017) and Lee (2021) agree that a sales management strategy may improve an organization's operational and financial performance. Effective sales management methods contribute to the success of micro retailing enterprises, according to the findings of a second study done by Ahmad and Zabri (2018). According to the studies stated before, this dissertation is necessary since no previous research has assessed the relationship between sales forecasting approaches and the performance of retail outlets in Nairobi County. This is something that must be completed in this dissertation.

1.3 Research Objectives

1. Determine the sales forecasting strategies commonly used by mobile phone outlets in Nairobi Kenya.
2. Establish effects of sales forecasting strategies on the performance of mobile phone outlets in Nairobi Kenya

1.4 Value of the study

This topic is important to the Master's Degree of Science in Operations and Technology management because it presents fundamental application of technological approach and software in solving real life issues. This would be achieved by pinpointing how sales forecasting strategies have influenced the performance of retail stores. Due to the uncertainty of the future, it is important to plan using reliable data and technological tools. Sales forecasting is one of the most significant aspects of an organization's planning, administration, successful marketing, and execution of all processes. As a result, without proper sales forecasting, the success of retail outlets is likely to be in jeopardy hence, the significance of this process. The findings of this research study may be significant to retail chain managers in preparing forecasts of their market share; therefore, it offers a basis for planning the future of their retail outlets. This study may also be significant to sales and marketing managers as it will discuss common forecasting models and challenges that one may face when implementing such approaches.

This study will look at sales forecasting strategies and mobile phone retail outlets' performance in Nairobi, Kenya's capital city. In Nairobi, researchers are attempting to investigate how sales forecasting strategies influence retail business performance (Cytton, 2018). Therefore, this study would be instrumental to the current trends of implementation of new sales forecasting strategies by SMEs to enhance their performance. Mobile phone retailers in Nairobi, Kenya use sales forecasting techniques to assist them understand this better. In Nairobi, Kenya, researchers are also investigating the influence of technology on the relationship between sales forecasting methods and retail outlet profitability. Therefore, this study is imperative in enhancing their findings.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the empirical and theoretical literature on sales forecasting strategy, information technology, and retail outlet performance in Nairobi, Kenya. The chapter will discuss two ideas and their relevance to this investigation. The chapter will also give a theoretical and conceptual foundation. The final portion of the chapter will highlight the gaps identified by past researchers' works in this field, as well as a summary of the literature review.

2.2 Theoretical Review

2.2.1 Specific Historical Analogy Theory

The specific historical analogy supposes that history repeats itself; hence any economic occurrence will likely repeat itself rhythmically. Although there are usually numerous occurrences in world economies, early cycles are likely to recur. As a result, when analyzing historical data for forecasting different parts, all changes must be analyzed independently (Ghilani et al., 2017). From the outcome gotten, a trend and relationships can be established hence inform the forecasting decision. To do this, a forecaster can decide to use their free hand or use statistical methods to make projections into the future. Once this has been established, it will be considered to be a true picture of how growth or decline in sales is likely to occur (Ghilani et al., 2017).

Although supporters and proponents of this theory support it due to its ability to provide accurate forecasts in cases where there is no big seasonal variations, critiques of this theory argue that because seasonal variations may not be equal in terms of amplitude and duration, this forecasting strategy is likely to give very inaccurate forecast outcomes which may jeopardize the future of most businesses (Chindia et al., 2014). Additionally, because some historical occurrences or patterns may not repeat themselves, using this method can be very tedious. One must thoroughly scrutinize data from the selected periods when the prevailing conditions resemble when the forecast is being done. On the other hand, critiques of this theory argue that in most scenarios, business cycles may not be periodic in addition to history not repeating itself; hence, this theory is premised on a wrong assumption (Chindia et al., 2014).

2.2.2 Theory of Economic Rhythm

The theory of the economic rhythm is based on the assumption that economic occurrences behave rhythmically; hence economic cycles of similar strength and intervals tend to recur. According to Giacomini (2014), when analyzing historical data, one must critically analyze data components such as trends, seasonal variations, and any abnormal variations in data. From this, obtained projections can be made. In scenarios where the trend is cyclical, the forecaster must make the necessary modifications to cater to the cyclical movements. Additionally, when an annual forecast is split into quarters or months, then there is a need for a forecaster to factor in the seasonal changes (Giacomini, 2014).

Further, because of the challenges associated with forecasting irregular changes, forecasters are encouraged to combine this method with other forecasting methods to ensure accuracy. When historical data is integrated into the forecast to determine the trend, a forecaster must use data from several periods with similar trends and seasonal variations. Once this has been done, the forecaster will establish the trend from which meaningful relationships and projections can be made. When combined with other forecasting methods, outcomes from this approach can be accurate and dependable in informing the future (Michon, 2019; Giacomini, 2014).

Although most critiques of this theory also argue historical occurrences may not recur, hence the use of this method may provide inaccurate forecasts. If time lag is well estimated and data picked from periods with similar characteristics to the prevailing conditions, then the accuracy problem can be solved. Additionally, suppose users of this method critically study the numerous factors that affect demand and the effect of each of these factors. In that case, the outcomes of a forecast dependent on that data can be very accurate (Giacomini, 2014).

2.2.3 System Theory

Systems theory refers to the multidisciplinary study of systems, which can be natural or manmade and consist of interrelated and interdependent parts. Every system is defined by its structure and purpose, confined by space and time, impacted by its environment, and expressed by its functioning (Ruben, 2018). Emergent or synergistic activity may indicate that a system is greater than the sum of its parts. An important emphasis of historical studies on the evolution of technology and media is on the inertia and heterogeneity, which emphasizes the connections between the manufactured object and the social, economic,

political, and cultural elements that surround it. Reverse salients are important because they occur when parts of a system emerge, diversify, and close functionally after others.

The systems approach to management is based on the idea that everything is interrelated and interdependent, which is called system theory in business (Von Bertalanffy, 2019). An assemblage or combination of elements and components is all that is required to create a complicated business organization, which is just an assemblage or confluence of factors and parts. In sales forecasting, applying the principles of system theory may help show how everything in business is interconnected, as well as the dangers that management and the organization face if they fail to address information technology (IT) issues (Liu et al., 2016). Those in charge of retail stores should be familiar with system theory and how to use it to improve business performance.

An organization can be seen as a complex system of interrelated departments by managers who utilize systems thinking. To meet the company's strategic and operational objectives, everyone in the team works collaboratively to achieve the company's productivity goals. Ruben (2018) argues that technological advancements allow all aspects of an organization to readily connect with one another. Using telephony, email, and social networking tools like wikis, blogs, and forums, managers and employees throughout the world collaborate to solve organizational issues. The use of enterprise software and hardware enables the corporation as a whole to operate as a single unit. The study of organizational processes and how to make them more efficient is at the heart of system theory. Improved workflow and strategy analysis may be performed by computer systems (Von Bertalanffy, 2019). There are still certain elements from digital management that may be found today in comprehensive quality management and Six Sigma practices.

2.3 Empirical Review

Sales forecasting is estimating a business's value or unit sales for a certain future period. This is normally based on a selected market plan and assumed operational environment. Forecasting can be done for a whole line of products or a specific product. Depending on the Robert et al. (2019) prevailing organizational environment, different retail outlets use varying sales forecasting strategies. As most research studies have proven, most organizations usually use judgmental techniques as they are easy to use. Considering that most of the judgmental techniques rarely use historical data to make informed future decisions, there is a need for a

shift from the technique to using strategies that not only focuses on the technique but also on the quality of the data used and the organizational practices that relate to such a process. In addition to this, Zhuang et al. (2018) argue that a retail outlet also needs to understand its demand drives and formulate proper assumptions upon which the sales forecast will be based. Further, Samaneh et al. (2015) assert that managers of retail outlets should understand how to develop a forecasting problem understand the significant parts of the system and how they relate. The value of the decision, timing, and how any environmental changes will affect any relied upon decisions must also be considered.

The Management of retail sales is of significant importance to the survival of retail organizations. According to Samaneh et al. (2015), to survive in a competitive and globalized business environment, retail outlets need to ensure accurate sales forecasting. A good sales forecasting strategy can help an organization reduce costs, but it can also help retail outlets improve their business strategy. According to Karmy and Maldonado (2019), sales forecasting is central to the operation of retail outlets regardless of the level of operation. Although large retail stores are likely to benefit more from a sales forecast as they command a large percentage of most markets, adopting better forecasting methods can help small retail outlets grow (Rybak and Manowska, 2018). Additionally, it can help such organizations plan how to venture and expand in an unknown market.

In the fast-changing technological world and customer demands, coupled with the globalization of economies, most retail outlets face, challenges in the implementation of dependable sales forecasting strategies. Although there has been a growth in the attention to forecasting, Rybak and Manowska (2018) found that the complexity of the entire process has made it hard for managers and decision-makers to weigh in all factors without using complex analysis tools hence the use of technology. Systematic decision-making requires explaining every activity that an organization undertakes. On the other hand, Sagaert et al. (2018) argue that for a sale forecasting strategy to be robust, it should be easy to understand, control, and offer quick response mechanisms. Additionally, it should demonstrate some level of completeness and robustness and communicate concepts clearly. Regardless of whether a forecasting method is simple or sophisticated, qualitative, subjective, or judgmental, it must meet the above characteristics to be considered robust and dependable.

According to Sagaert et al. (2018), in retail outlets, sales forecasts are supposed to take into consideration every part of operations. This ranges from warehouse logistics, purchasing, store

management, allocation and distribution of the workforce, and management of expenses. From allocating resources to various departments to respond to market trends and personnel planning, a sales forecast plays varied roles to different departments of an organization. For instance, management will give guidance on operating budgets and guide planning for future market demands. On another study, Karmy & Maldonado (2019) found that the forecast guides personnel planning for the human resource department, while the production department will guide decisions on capacity requirements and inventory management. Considering this, it is clear that sales forecasting may either require modification or a total overhaul of a retail outlet's supply chain systems and operations.

2.3.1 Sales Forecasting Strategies Used by Retail Outlets

Before selecting a forecasting strategy, organizations must always consider several factors that influence that product's demand. Regardless of who is mandated with the process of choosing a forecasting strategy, Mas-Machuca & Martínez-Costa (2014) argue that the two significant factors, those that have always affected the direction and are likely to influence demand in the future and new ones that are likely to influence the market, must be taken into consideration. In scenarios where known historical factors are dominant and likely to influence the future, the forecasters are likely to use routine methods. However, the entry of new factors that are likely to influence demand will necessitate a change in strategy, hence adopting new forecasting strategies. In addition to this, Agostino (2020) argues that before undertaking any forecasting strategy, it is necessary for the forecaster also to consider managerial decisions that will need to be made, competitor activities, stage of the product in the product life cycle, market demand and share, supply chain constraints and the prevailing business environment.

Sales forecasting can be long-term or short-term, depending on the targeted outcome. According to Agostino (2020) Most businesses use long-term forecasting for strategic planning and where decisions are usually critical. Short-term forecasting is normally preferred for short periods that range between three to six months. Considering this, it is clear that in addition to using factors affecting demand or is likely to affect the direction of a product to determine a forecasting method to be adopted; the period that such forecasting is supposed to cover can also be considered. On another study, Sagaert et al. (2018) found that long-term and short-term forecasting may depend on the nature of the project or product in question. For instance, if you forecast energy demands and construct power stations, five to ten years will be considered in a short-term project while the same can be long-term for foods. As a result, Sagaert et al. (2018)

state that adopting a forecasting method depends on the business situation, hence the likelihood of an organization having numerous forecasts. According to Rybak and Manowska (2018), most organizations normally develop departmental forecasts, and from this, an outlet's overall forecast is generated. In this kind of setup, employees from the sales and marketing departments are normally tasked with developing the departmental forecasts.

a. Judgmental Methods

According to Petropoulos et al. (2018), qualitative methods generally lack historical data because such does not exist, for instance, in cases of new products or where the history of similar products does not exist. In most cases, this approach to forecasting lacks any formal mathematical models because of the data problem. For any data to provide accurate prediction, it must somehow be representative of the future (Petropoulos et al., 2018). As a result, this approach to forecasting is based on critical information, which in most cases is qualitative. When using the qualitative approach, a survey on the options of the involved entities must be done as this will dictate sales performance. However, because this approach provides a poor basis for comparison platforms, it interprets the decisions arrived at hard. Based on Dhodi (2018) findings, it is necessary for some form of quantitative measures to be considered as it makes prediction easy. When using the qualitative approach, the primary goal is to combine all information and judgment connected to the issues being evaluated in a balanced and systematic way. Judgmental methods use experts, group discussions, sales force predictions, and news from exceptional occurrences. From Thoplan (2014) findings, in terms of incorporation of technology, this approach has been widely adopted in areas where new product development requires numerous inventions that are hard to estimate.

b. Experts Opinion Approach (jury of executive opinion)

Loureiro, Miguéis & da Silva (2018) argue that the expert opinion approach involves grouping managers together to develop a forecast market survey that uses interviews and surveys to analyze customers' likings and what they are likely to demand in the future. The general principle of this approach to forecasting is expert opinion to inform all undertaken decisions. When using this approach, the forecasters need to try to reduce biases in the suggested departmental forecasts, for instance, gross over or under-estimating sales. According to Sagaert et al. (2018), this forecasting strategy works perfectly when forecasting industrial goods where large-scale production is involved quickly. Additionally, it can be modified to fit in retail outlets due to its accuracy when short-term forecasting is done.

c. Counting methods

A forecaster will gather information from customers, competitors, and other individuals on their buying preferences and spending habits when using this method. From the collected data by Kolassa (2016), a forecaster will analyze and then come up with a forecast. A primary survey by a forecaster will involve the collection of data by the forecaster. Although this can be expensive, Lasek, Cercone & Saunders (2016) argue that data collected from this method is always accurate unless the surveyor followed the correct procedure. In addition to the primary survey, a forecaster can also use a secondary survey of buyers' characteristics, which are important in forecasting. Compared to primary surveying where it is the forecaster who collects the information that informs forecasting, in secondary surveying, a forecaster data is collected by someone but relevant to forecasting. This may include the prevailing economic climate, unemployment, tax, work patterns, and spending habits. One of the most common counting methods is the intention to buy survey, where outlets ask their potential customers if they are planning to make purchases from them.

d. Historical Approach

Based on the assumption by Kolassa (2016) that there is continuity in demand patterns, this method wholly depends on historical data. To accurately forecast, the history of people's past buying behavior must be reviewed for future predictions to be made (Kolassa, 2016). The historical approach is a statistical method commonly used when there is enough and reliable historical and present data. From this data, future trends and relationships can be predicted; hence, the development of accurate forecasts. When using historical data, it is straightforward to determine the sales rate accurately, and predictions can be made (Kolassa, 2016). The analysis approaches adopted by a retail outlet vary with the need. For instance, for outlets where new products are not being introduced, and the growth rate is slow, the forecast can be for a new financial year, which in most cases may never vary with that year's sales. In other instances, Chambers et al. (2019) argue that the forecaster may decide to push and break the known sales limits by doing a component-by-component analysis of the factors that affect sales volumes. Some of the factors that must be considered in this scenario include seasonal influences and trends in the current market (Chambers et al., 2019). It is worth noting that making projections from raw data can sometimes be a very daunting task because the degree to which trends and demands change is not obvious.

e. Time Series Analysis

Time series is a group of chronologically organized points of raw data of a product or a product line for a certain period. According to Catal et al. (2019), this can be a month, a year, or even several years as long as it covers a period that should give a dependable trend. The time series forecasting method primarily depends on the availability of enough historical data of a product line or the product itself. With enough historical information, a forecaster can develop precise and dependable trends on the performance of products or product lines. According to the reviewed studies, it is easy to develop or formulate different mathematical techniques that will give accurate projections (Pavlyshenko, 2019; Catal et al., 2019). In scenarios where there is historical data, in cases of raw data, it is very hard to make any projections since trends are never apparent when there are many factors that affect demand. When using the time series method, one will understand variations caused by seasonal demand, cyclical patterns that occur after a certain period, and the growth rate of any demand and sales pattern. According to Pavlyshenko (2019), this method has an added advantage over other methods because when using it, one must endeavor to separate trends from cycles. It is also important, among other factors, to analyze the available data, and then from this, projections can be made. Although this method may integrate some statistical techniques, the existing assumption continue making its use limited, as this notion only works for short-term planning. Additionally, because every aspect of statistical prediction will give a definite output along that line, the limit on predicting sudden changes (turning points) when using statistical analyses in the time series analysis (Pavlyshenko, 2019). The forecaster must employ other tools to predict when such changes will occur.

f. Causal Methods

As compared to the historical approach, Fildes, Ma and Kolassa (2019) argue that causal methods are advanced in that all the information that defines relationships between system elements must be clearly defined for predictions to be made. When using this method, past trends and variables are integrated with present trends to predict future sales. The availability of historical data makes it easy for a forecaster to develop causal simulations by thoroughly analyzing such data to reveal the relationships between different factors that affect demand trends (Fildes, Ma & Kolassa, 2019). Because of the high levels of accuracy associated with this method, this method is deemed one of the most sophisticated as it uses mathematical models to develop connections between different demand variables. This method allows

forecasters to combine predictions of related events; hence, a more accurate forecast (Gor, 2020; Agostino et al., 2020; Fildes, Ma & Kolassa, 2019). In cases where certain types or categories of data are missing, the forecaster must draw deductions about some of the relationships after which outcomes from such activities can be tracked to analyze the validity of any of the assumptions made.

g. Market testing approach

In the market testing approach, Mas-Machuca and Martínez-Costa (2014) found that an organization should start by coming up with numerous innovative ideas from which a few can be selected for testing. To be able to achieve this, all product development steps must be followed. Compared to other forecasting strategies, this method is technology-oriented because all the product development steps require different software applications (Mas-Machuca & Martínez-Costa, 2014). To avoid product failures in the market, using this method in forecasting should start as early as the first stages of product development. With this, organizations can not only be able to pick the relevant ideas, but also they will be able to do a consumer analysis, pre-test the market, and then from the learned lessons, develop strategies to counter any factors that are likely to affect the achievement of the forecasted sales quantities. In a research study done by Armstrong and Ma, Fildes and Huang (2016), it was recommended that it is significant for businesses to do pre-test evaluations to limit losses associated with failed plans. In this method, data can be collected by either introducing a product to the market and their purchasing intention or developing a simulation shopping task in a selected test store.

2.3.2 Sales Forecasting Strategies and Retail Outlets Performance

Bajari et al. (2019) found a significant growth in the number of tools that are used in forecasting. The integration of technology in business has made the process simpler and accurate due to the numerous data programs that make forecasting easy (Bajari et al., 2019). Despite the developments, making the most accurate predictions has always been an uphill task for most retail outlets, hence the daily quest to develop more sophisticated forecasting methods. On another study, Khalil & Belitski (2020) found that most of the current forecasting methods do not hold the forecasters responsible for its outcomes; hence, the accuracy problems are associated with most forecasting methods. To mitigate this, organizations need to clearly define and draw a clear-cut line between an employee's compensation and achieved sales target (Khalil & Belitski, 2020). With this in place, managers and employees won't set low targets or over-forecast because they intend to gain.

According to Kim (2017), computer-intensive forecasting strategies have become very common amongst most organizations as most analytical methods due to combining individual classification with regression. Although this is the case, several researchers have associated these methods with accuracy problems (Kim, 2017). According to Armstrong and Green (2015), the more complex a statistical method, the more it is likely to harm accuracy, and the more, the simpler the way, the reduced the error margin. Additionally, over time simpler methods have proven to help in the interpretation and understanding of decision-makers. On the other hand, as research shows, most organizations tend to avoid complex forecasting strategies as they are costly; most organizations lack the required expertise with experience to use them, among other factors. A survey by Kim (2017) among Egyptian public enterprises established that technology adoption in forecasting by these organizations was very low. This was attributed to the fact that most of these entities lacked personnel with the required skills. In most organizations that were under study, it was established that they tend to prepare individual-products forecasts. Additionally, the prepared forecasts were short-term and for the local markets (Chege, Wang, and Suntu, 2020). It was concluded that most Egyptian practitioners lack the required forecasting knowledge as most understand objective rather than the subjective aspects of forecasting.

2.4 Summary of Gaps Identified

Author	Method	Title	finding	Gap
Robert et al. (2019)	Systemic Review of literature	Retail forecasting: Research and practice	Forecasters may confront the dimensionality problem of too many variables and little data.	No solution for challenges faced on forecasters.
Zhuang, Cui, and Peng (2019)	Mixed method: qualitative and quantitative	Manufactured opinions: The effect of	Adding influences customer	The study does not cover other strategies apart

		manipulating online product reviews	buying intent, but it also raises suspicion, which has a negative mediating effect.	from online reviews.
Kim (2017)	Mixed methods approach: survey instrument	Dynamic capabilities for organization performance under the information technology governance framework	IT governance methods are dynamic capabilities that are directly related to corporate performance. Each mechanism has a distinct influence.	The study does not cover forecasting in various industries.
Khalil and Belitski (2020)	Mixed Method	Dynamic capabilities for organization performance under the information technology governance framework	Information technology is an integral component in organization performance	The study does not analyze the impact of each forecasting strategy on organization performance.
Thoplan (2014),	Mixed qualitative and quantitative methods.	Qualitative v/s Quantitative Forecasting of Yearly Tourist	The qualitative forecasting approach is accurate, but it does not include	The study does not identify how accuracy of a strategy influences

		Arrival in Mauritius	prediction intervals where uncertainties can be included.	organization performance.
Chindia et al. (2014)	Qualitative approach	Forecasting Techniques, consumer products based on the influence of online wordof-mouth	Forecasting strategies are influenced by online and social media reviews.	The study does not explore how the influence from online affects organization performance
Karmy and Maldonado (2019)	Systemic Review	Hierarchical time series forecasting via Support Vector Regression in the European Travel Retail Industry	When compared to the standard ARIMA and Holt-Winters techniques for this problem, the advantages of SVR-based hierarchical time series in terms of prediction performance.	The study does not link the hierarchical structure of sales forecasting with organization performance.

2.5 Conceptual Framework

Independent variables

Dependent variables

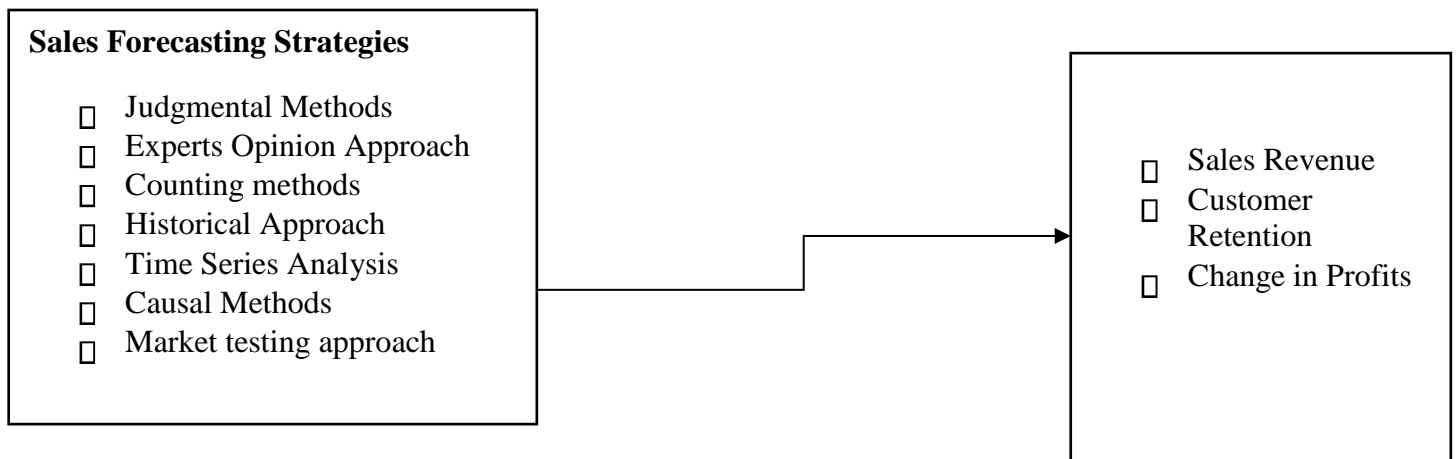


Figure 2.1: Conceptual framework

The variables used to address the study problem are divided into independent variables and dependent variables. The independent variable is sales forecasting strategies that will be compared to the dependent variable performance of mobile phone retail outlets in Nairobi, Kenya.

2.6 Research Hypothesis

1. *Some retail outlets in Nairobi county are yet to implement sales forecasting strategies.*
2. *Application of sales forecasting strategies improves the performance of mobile phones retail outlets in Nairobi, Kenya.*

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter delves into the data collection methods and processes that will be employed in the study. It discusses the project's study design, the target population, the sampling strategy and sample size, instruments, ethical issues, data collecting, and data processing techniques that aid in the resolution of research problems.

3.2 Research Design

The study employs descriptive design to facilitate data collection and analyzing to achieve the research objectives. This approach is appropriate since it enables the researcher to achieve the best results, the design is typically done to combine technological approaches in sales forecasting, which will form the basis for data collection. According to Creswell and Creswell (2017), descriptive research design is appropriate for investigations that seek to determine a phenomenon's effect and influence relationships. Descriptive approach will enhance statistical analysis to ensure reliable findings are generated by the study.

3.3 Population

The target population is the total group of individuals, events, or issues that the researcher wants to investigate; the population serves as the basis upon which the sample size or study will be chosen. Owners or managers of mobile phones retail outlets in Nairobi County, Kenya, will be the study's target audience.

Nairobi City County has approximately over 5000 unregistered and licensed mobile phones retail outlets. The Study targets to cover outlets within the Central Business District (CBD). Nairobi City County CBD was chosen because it offers a wide set of traits for running mobile phone retail shops, representing Kenyan retailers in both urban and rural areas. Nairobi City County has also seen an increase in the number of mobile phone retail stores in recent years, making it an ideal choice for the study.

3.4 Sample Design

Simple random sampling will be used for data collection purposes. The approach was selected because it allows the use of a small portion of data to represent the entire population. For this reason, a sample of 50 mobile phone retail outlets will be used to collect data for this study. Only stores with mobile phones stock of over Ksh 1 million will be included in the study. To achieve this, a stratified random sampling approach will be used to recruit participants from the qualified retail outlets. It would be easy to conduct statistical analysis to generate reliable findings from this small portion of the population dataset.

3.5 Data Collection

The study will be based on primary and secondary data. The primary data will be collected using questionnaires with checklist questions. The questionnaire will be sent to the shop owners or managers via email upon agreement to participate in the study. The participants will be able to complete a 10 minutes questionnaire and send it back via email to the researcher. The retail outlets will include Safaricom, Samsung, Huawei, Techno, Nokia, Infinix, Sony and other phone shops within the CBD. Each question will be tailored to the study's specific aim. Structured and unstructured items will be included in the surveys. Structured questions will be used to assess responses (Ortega-Cejas et al., 2021). Secondary data will be gathered through the use of business publications, annual reports, books, journals, and online articles. The secondary data includes published information about the application of sales forecasting in retail stores, the researcher's arguments that are similar to our findings and those that contract the results of this study. Keywords such as sales forecasting strategies, organizational performance, and sales forecasting will be used to select secondary sources that are not older than 10 years. The findings or data from this study would be used. The studies listed in the literature review would be used to support primary finding of this study.

3.6 Data Analysis

After gathering raw data, the findings must be processed, cleansed, classified, and entered into a computer. Inferential statistics and descriptive statistics are two approaches to data analysis. Descriptive analysis will include the examination of quantitative data utilizing methodologies and metrics such as distributions and central tendency measures such as the

mean, mode, and median. Correlation analysis is sometimes classified as descriptive analysis (Ortega-Cejas et al., 2021).

The research will classify, synthesize, evaluate, and report the data to make it meaningful. The data will be classified as quantitative data based on the key objectives. The recommended data analysis method will be descriptive data analysis, which analyzes quantitative data and presents the findings as they are, frequently describing what they imply to the researcher and their implications for the target demographic. In order to investigate the relative contribution of each variable and the combination of variables that best explains their relationships, inferential statistical methods such as descriptive statistical analyses, correlations between variables, one-way ANOVA, factor analysis, internal consistency reliability analysis of all subscale scores, and simple and multiple linear regression analyses were used. Each statistical test's significance level was set at 0.05, and a confidence level of 95% was maintained throughout the process. The study used factor analysis to investigate the various companies' current forecasting methods in order to determine which ones are the most accurate. As a result of this procedure, a large number of variables were reduced to a more manageable number. By performing a linear transformation on the factor solution in the form of an orthogonal rotation, the number of uncorrelated components was reduced. The coefficients from Linear Regression analysis will be used to establish the association between sales forecasting and performance of mobile phones retail outlets (Bickel & Lehmann, 2012). The data in this study will be analyzed quantitatively using SPSS software version 22 will be used to conduct Anover. The data will be displayed visually using tools such as tables and graphs. The following multiple regression model will be used to examine the data. $Y = A_0 + A_1X_1 + \varepsilon$ ----- (ii) Whereby:

Y = Performance of Retail Outlets

X_1 = Sales forecasting Strategies ε

denotes error.

The independent variables will be X_1 and X_2 , and the coefficient of regression will be A_0 , A_1 , A_2 , ... A_5 . Additionally random variation in y and X will be represented by ε

Multiple regression models would help in determining the relationship between the independent variables and dependent variable. Therefore, the results will identify the correlation and significant levels using measures of coefficient.

CHAPTER FOUR: ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents data collected from 50 mobile phone retail outlets within the Nairobi CBD. The statistical results will be presented using measures of tendency and coefficient levels. The results presented in these sections will be compared with findings from existing studies to support the discussion and recommendations.

4.2 Findings and Analysis

4.2.1 Sales Forecasting Strategies commonly Used by Mobile Phone Outlets in Nairobi

Using correlation and regression modelling, the rate of retail outlets performance was compared to the Forecasting Methods (as independent variable), with the Sales Revenue (SR), Customer Retention (CR) and Change in Profits (CP) acting as dependent variable indicators. A regression equation of the type $Y = A_0 + A_1X_1 + \epsilon$ was used to explore the combined influence of the moderator effects on performance measurements (performance measure).

The Table 4.1 below was generated from the questionnaire where 50 participants provided responses based on the application of the sales forecasting strategies. The results were categorized based on Likert Scale. **Table 4.1: Questionnaire results**

	Strongly agree {5}	Agree {4}	Neutral	Disagree {2}	Strongly disagree {1}	Not used
Judgmental methods help your shop to increase sales and stock in the businesses.	25	5	3	0	0	17
Experts' opinion strategy helps your business to cope with increasing demands in the market segments?	20	10	1	0	1	18
Sales forecasting strategy helps to expand the outlet by adding a product line?	22	8	0	0	0	20
Counting methods enables your shop to expand and diversify their investment opportunities through sales forecasting.	18	10	2	0	0	20

Causal methods increase sales volume and profitability of the shop.	12	15	0	0	0	23
Historical forecasting strategy is an effective mechanism in identifying customer needs and boosting their retention rates.	16	14	0	0	0	20
Time series analysis helps your shop to increase sales and stock in the businesses.	17	13	0	0	0	20
Market testing approach enables your shop to expand and diversify their investment opportunities through sales forecasting.	12	19	0	0	0	19

The above results justify the first hypothesis that *“Some retail outlets in Nairobi county are yet to implement sales forecasting strategies.”*

From the questionnaire results majority of the responses (25) strongly agree and (5) agree that judgmental methods increase sales and overall performance of mobile phones outlets in Nairobi Kenya. From the responses, it is evident that retail outlets in Nairobi are yet to implement sales forecasting strategies. Most of the shops were found to use more than one forecasting strategies, which they claimed that improves forecasting accuracy. The summary of the above results is presented by Table 4.2 below

Table 4.2: Summary of findings

Strategy	Used	Not Used
Judgmental	33	17
Experts’ opinion	32	18
Counting	30	20
Causal	30	20
Historical	25	25

Time series	30	20
Market Testing	31	18

The results show that judgmental method is commonly used (33) followed by expert opinion (32) then market testing with 31. However, respondents explained on the open questions that there are few experts that provide opinions on sales of phones in Nairobi. The summary of the application of sales forecasting strategies based on Likert Scale is presented below. The application of different forecasting approaches by retail stores is presented by figure 4.1 below. The data was obtained from the questionnaire question on how often.

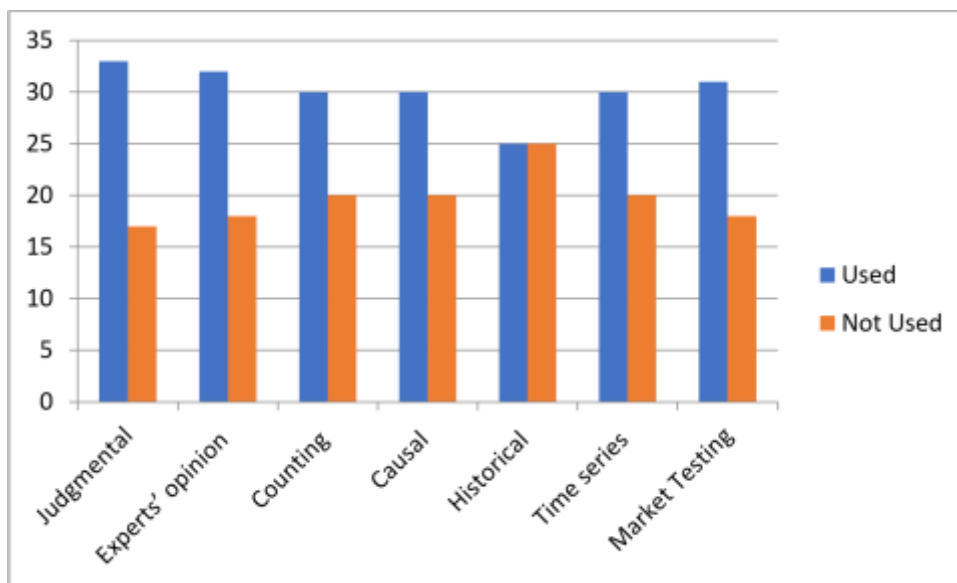


Figure 4.1: Summary of Sales forecasting strategies

From the results above majority of mobile phone retailers in Nairobi uses judgmental method (JM) strategies when forecasting for their sales. The second strategy commonly used is expert opinion, followed by historical analysis, then market testing. However, most of the respondents did not understand the correct name for the strategy they use. For this reason, adjustments were made based on the explanation provided to fit the correct strategy.

4.2.2 Effects of Sales Forecasting Strategies on the Performance of Mobile Phone Outlets in Nairobi Kenya

To establish effects of sales forecasting strategies on the performance of mobile phone outlets in Nairobi Kenya, the regression of the usage of the strategy was conducted against shop performance to provide error, Beta, p-value and t-value using ANOVA as presented in Table 4.3.

Table 4.3: Regression coefficient of forecasting methods

Model	Unstandardized		Standardized	t	Sig. (pvalue)
	Coefficients				
	B	Std. Error	Beta		
(Constant)	-.108	.078		1.562	.050
Judgmental increase sales and stock.	.968	.076	.926	13.243	.002
Experts' opinion increase sales	.845	.052	.878	12.609	.005
Counting methods expand Outlets	.359	.048	.369	6.787	.002
Causal methods increase sales volume	.678	.076	.826	13.243	.003
Historical Methods Increase customer retention	.645	.052	.775	10.628	.005
Time series increase sales	.259	.058	.259	3.287	.003
Market testing expand the outlet	.468	.076	.726	11.243	.004

a. Dependent Variable: Performance of mobile phone retail outlets

The above results justify the second hypothesis that “*Application of sales forecasting strategies improves the performance of mobile phone retail outlets in Nairobi, Kenya.*” The p-value (sig.) reflects the association between the variables; if the p-value is less than 0.05, the relationship is deemed significant; if the p-value is more than 0.05, the link is not significant. The statistical significance of the objective forecasting approach was established through the use of the independent forecasting technique. The t-value and p-value justifies the first hypothesis that majority of small retailers in Nairobi are yet to implement sales forecasting practices. Despite the fact that their standard deviations were extremely tiny and unexpected, there was evidence that yearly and monthly estimates produced proper results.

Predictions created without considering the consequences of consumer behavior resulted in a statistically insignificant FT, while forecasts produced without considering these elements resulted in an incorrect FT. The summary of regression is presented below.

Table 4.4 Model Regression Summary Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. error
1	.888 ^a	.779	.789	.228

a. Predictors: Sales forecasting strategies influence mobile retail outlet performance.

The coefficient of correlation is represented by the modified R square, which indicates how the changes of the independent variables influence the fluctuations of the dependent variable. According to the data in Table 4.4, the value of R squared was 0.779, suggesting that change of 79% of the variance in mobile phone outlets performance. Forecasting strategies provide instruction and complete assignments with a 95% confidence interval. Table 4.4 reveals that the correlation coefficient, or R, which represents the relationship between the research variables, was 0.888, showing a highly significant positive relationship. Using linear regression, the three indicators related to the expansion of mobile phones retail outlets in Nairobi City were assessed. Table 4.4 displays the outcomes.

Table 4.5: Linear Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig. (p-value)
	B	Std. Error			
(Constant)	-.108	.078		-1.562	.050
Sale forecasting strategies helps to Revenue	-.086	.041	-.185	-3.243	.002
Sale forecasting strategies increase Customer Retention	.845	.052	.878	14.608	.005

Change in Profits Sale forecasting strategies	.459	.058	.259	4.287	.001
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a. Dependent Variable: Performance of mobile phone retail outlets

The above results justify the second hypothesis that “*Application of sales forecasting strategies improves the performance of mobile phones retail outlets in Nairobi, Kenya.*” The p-value (sig.) reflects the association between the variables; if the p-value is less than 0.05, the relationship is deemed significant; if the p-value is more than 0.05, the link is not significant. Table 4.5 reveals a significant relationship between sales forecasting strategies and Sales Revenue Customer Retention Change in Profits. The sales problems experienced by retail outlets also had a significant influence on their growth. In the table below the coefficient of the variance is the percentage ratio of the standard deviation and the mean. The highest covariance will provide the most accurate forecasting time.

Table 4.6: Descriptive Statistics based on Forecast Horizons

Period	No. outlets	mean	Std Dev.	Coefficient of variance (%)
monthly	50	3.5426	0.58424	16.49
quarterly	50	3.4637	0.63710	18.39
Bi-Annually	50	3.2618	0.74156	22.73
Annual	50	3.7136	0.59327	15.97
others	50	1.8429	1.16397	63.16

The cumulative influence of monthly projections, according to the findings, worked as a moderator in the link between the integrated approach produced via customer relations alone and the objective method acquired through all strategies. From the analysis bi-annual (0.74156) emerged as the most appropriate horizon for sales forecasts.

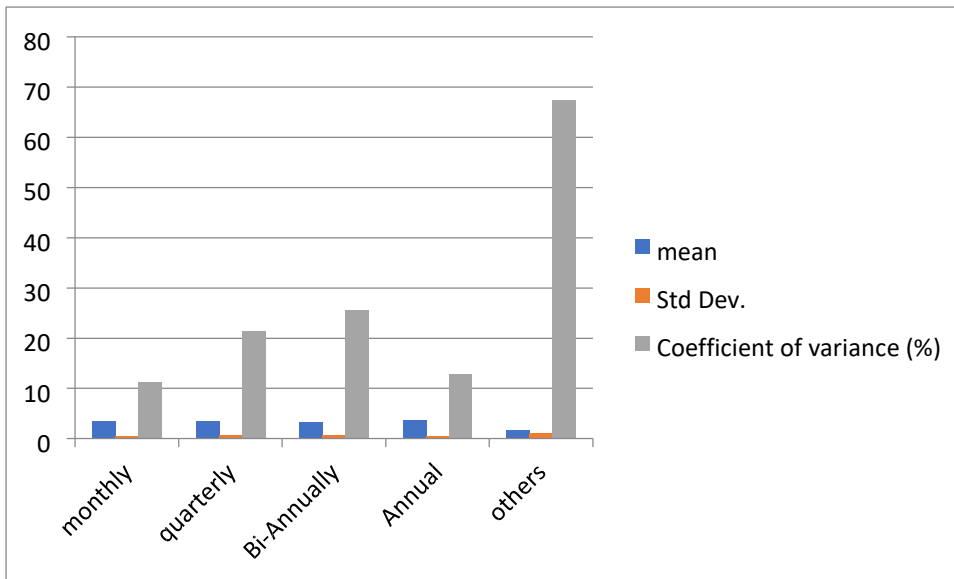


Figure 4.2: Forecast horizons analysis

Monthly predictions significantly reduced the intensity of the link that existed between outlet performance and the judgmental approach. This demonstrated that the FT might be successfully controlled at retail phone locations. According to the investigation's findings, annual forecasting was substantially less accurate than the objective FT. Simply taking the annual estimates and averaging them may result in higher sales.

Table 4.7: Descriptive Statistics Forecasting strategies and Phone Outlets Profitability

Period	No. outlets	mean	Std Dev.	Coefficient of variance (%)
Sales Revenue	50	4.1573	0.63241	15.21
Customer Retention	50	3.4629	0.64063	18.50
Change in Profits	50	4.8243	1.02158	21.18

The above results justify the second hypothesis that “*Application of sales forecasting strategies improves the performance of mobile phones retail outlets in Nairobi, Kenya.*” The coefficient of variance is the percentage ration of the standard deviation and mean. The change in profit had the highest coefficient (21.18%), which means that change in profit is strongly affected by forecasting methods. There was evidence that profitability influenced the relationship between the combined forecasting technique and customer retention in relation to demographic characteristics. The findings for this goal revealed that an objective, prudent, and integrated strategy was effective in achieving Sales Revenue through Customer Retention

and Profit Change. Phone outlets' profitability is measured using indicators such as Sales Revenue (SR), Customer Retention (CR), and Change in Profits (CP).

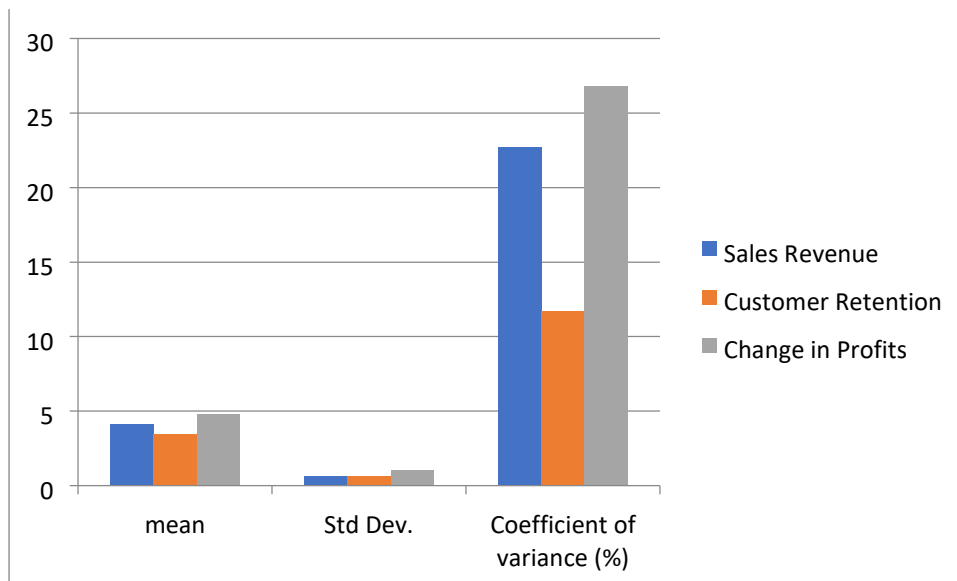


Figure 4.3: Mobile phone retail outlets performance analysis

According to the numbers above, CP has the highest mean value, as well as the highest standard deviation and coefficient of variation. These findings showed that in order to assess the accuracy of a forecasting method, key independent elements of the CP and dependent variables of the CR must be clearly and accurately articulated. This is required to establish whether or not a forecasting technique is accurate (FT). Forecasting strategy may be limited to an organization's bottom line rather than broadening to cover other aspects of business. Further analysis involved The Pearson correlation matrix, which show the relationship between indicators when applied together. Table 4.8 was generated by running The Pearson correlation matrix on SPSS to show how combination of forecasting methods influences sales. The positive figure show positive correlation, and negatives, negative correlation.

Table 4.8: Correlation Matrix Results

	JM	EO	CM	HA	TS	CE	MT	SR	CR	CP
JM	1.00 (0.00)									
EO	0.58 (0.00)	1.00 (0.00)								
CM	0.54 (0.00)	0.46 (0.00)	1.00 (0.00)							

HA	0.25 (0.00)	0.24 (0.00)	0.51 (0.00)	1.00 (0.00)						
TS	0.35 (0.00)	0.25 (0.00)	0.20 (0.00)	0.20 (0.00)	1.00 (0.00)					
CE	0.12 (0.00)	0.28 (0.01)	0.45 (0.00)	0.10 (0.00)	0.05 (0.00)	1.00 (0.00)				
MT	-0.06 (0.00)	-0.20 (0.00)	-0.03 (0.00)	-0.06 (0.00)	0.52 (0.00)	0.73 (0.00)	1.00 (0.00)			
SR	0.25 (0.00)	0.15 (0.00)	0.10 (0.00)	0.15 (0.00)	0.25 (0.00)	0.05 (0.00)	0.05 (0.00)	1.00 (0.00)		
CR	0.35 (0.00)	0.10 (0.00)	0.15 (0.00)	0.10 (0.00)	0.05 (0.00)	0.05 (0.00)	0.15 (0.00)	0.05 (0.00)	1.00 (0.00)	
CP	0.28 (0.00)	0.12 (0.00)	0.05 (0.00)	0.05 (0.00)	0.25 (0.00)	0.10 (0.00)	0.05 (0.00)	0.05 (0.00)	0.05 (0.00)	1.00 (0.00)

Judgmental Methods (JM); Experts Opinion Approach (EO); Counting methods (CM); Historical Approach (HA); Time Series Analysis (TS); Causal Methods (CE); Market testing approach (MT).

The Table 4.8 above presents the Pearson correlation matrix for the independent and dependent variables, and control variables. Second, there is a positive relationship between the combined indicators of independent variable and the sales revenue (SR) ($\rho = 0.25, 0.15,$ and $0.25, p 0.05; r = 0.25, 0.55,$ and 0.25). The relationship between CP and severity is also positive ($\rho = 0.28, 0.12, 0.05,$ and $0.25,$ with a significance level of $0.05; r = 0.28, 0.12,$ $0.05,$ and $0.25,$ with a significance level of 0.05).

From the findings, the following assumptions on effects of the CR were discovered: CR and CP were both statistically significant in an objectively relevant sense. The CP was a statistically significant element in both the judgment and the combining. This implied that a CR served as a moderator in the interaction between an FT and the CR. Despite this, based on objective forecasting, the CR did not operate as a moderator between the CR and any other FT. The most current study compared the use of mixed FT to the use of a single adjudication technique.

According to the explanations given by the participants combining FT has a greater impact on mobile retail outlets performance than utilizing a single approach. When designing and

managing forecasting efforts, one must consider the strong market rivalry, varied cultural norms, and fragmented organizational structures of a certain corporation. If retail enterprises are to be able to combine forecasting operations on a larger scale, the information technologies they employ must be interoperable with one another, and their systems and data must be standardized. To effectively employ forecasting approaches, managers must have access to decision-support technologies that take into account both internal and external environmental aspects, as well as those that enable "what-if" scenario analysis.

4.4 Discussion

4.4.1 Sales Forecasting Strategies used by Mobile Phone Outlets in Nairobi Kenya

According to sales forecasting, judgmental method and combined strategies impact mobile phone retail sales in Nairobi, Kenya differently. Combined strategy was found to be more effective than a single strategy. Economic variables, according to the study's findings, are effective leading predictors of retail purchases. Because there is a data shortage, random samples are gathered once every three months from the 50 selected establishments. Big external happenings, on the other hand, such as the onset of inflation in 2022, may have a significant impact on sales revenues.

As a result, in order to corroborate the study's findings, further data in the form of monthly samples must be obtained. Similar to Mwangi (2020), the results indicate that the association between sales forecasting strategy and organizational success is revealed through market research. To put it another way, shops that sell phones may expect their own sales to increase in comparison to those of their competitors (one increases or decreases; the other has the same direction). According to these figures, JM has a major influence on retail expenditure, which is understandable given the circumstances. Because these stores sell things other than mobile phones, such as laptops and accessories, mobile phone stores are not homogeneous in terms of product diversity and market segmentation.

Moreover, when performance is being assessed, input (resource) and output (outcome) variables are employed to determine operational efficiency. The output is sales, whereas the inputs are the cost of things sold, salaries for full-time employees, and operating expenses. The optimization procedure is performed monthly, quarterly, bi-annually, and annually. In contrast to sales forecasting and market research, evaluating a firm's performance focuses on

the efficiency with which a company uses its resources to generate a product. In general, the study supports Mburu (2020) research findings that retail profit margins are on the low side of the scale. Improving a retail company's operational efficiency may be more important than increasing sales if the aim is to dramatically increase the company's competitive edge. Methods may entail either saving input resources while achieving a larger outcome or lowering the number of input resources while achieving the same end.

5.3.2 Effects of Sales Forecasting Strategies on the Performance of Mobile Phone Outlets in Nairobi Kenya

Prediction and forecasting are basically predicated on a person's risk and uncertainty exposure. When opposed to predicting, creating predictions is a more comprehensive idea to have. Both terms can relate to less formal evaluation approaches as well as more formal statistical processes that involve time series, cross-sectional, or longitudinal data. Both of these data sets can be used in formal statistical methods. Demand projections that span many time periods are often integrated into estimations. As stated in Boonsothonsatit (2017) research, the expected unit of analysis can be used to determine the features of the item or service. Statistics that illustrate the degree to which earlier SFs have matched actual demand are often used to evaluate forecast performance. Metrics such as mean absolute percent error and percent error are frequently used. The degree of precision obtained at various hierarchical levels, throughout a range of time periods, and using a variety of measurement units may be used to assess an organization's success. Historically, forecasting research has focused on statistical measures of performance to investigate the proportion of anticipated performance that was actually achieved in reality and to evaluate forecasting systems using a competitive framework. The findings of the various lines of research such as Lee (2021) paint differing portrayals of how much progress has been achieved in increasing prediction accuracy over time. Competitiveness of this research has contributed to the development of approaches that improve accuracy in a variety of demand conditions. Nonetheless, practice such as that of Ahmad and Zabri (2018) have shown that the sector is not growing at the same rate, and employees in charge of forecasting are frequently less familiar with the diversity of technology that may support such initiatives.

Despite the fact that there has been a substantial quantity of empirical research on company forecasting, not all industries have received the same degree of attention. In contrast to issues with forecasting technique application, relatively little study has been done on the purpose

and applicability of forecasting in industrial organizations, for example. Furthermore, while certain characteristics of forecasting practice such as resource availability and prediction accuracy have been systematically connected to factors such as firm size and industry type, the links for other aspects of forecasting practice have been relatively understudied (such as data sources utilized). This is related to the issue of the numerous types of variables that have been linked to the various components of forecasting methodologies. Other potentially important elements, such as environmental turbulence and the degree of formalization and centralization inside the organization, have received less attention (Ahmad and Zabri, 2018). However, differences in behaviour have been reliably explained by firm size and industry membership. This includes, but is not limited to, the predictability and simplicity of use of predictions, the timeliness and cost of forecasting, the availability of quantitative forecasting instruments, and the frequency with which forecasts are carried out.

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATION

5.1 Introduction

This chapter highlights the study's primary results and suggestions in order to answer the research questions. It presents arguments from the findings to address the research gaps discovered under the research problem and literature review sections. According to the relevant literature, this study evaluated seven forecasting strategies and assessed their effect on performance of mobile phone retail outlets within Nairobi CBD. The section also compares the findings of this study with those of existing literature and provides recommendation for further study.

5.2 Summary

The study's findings have led to a better understanding of seven distinct approaches of prediction. According to the study results, mobile phone retail firms do not consistently forecasting information. Despite the fact that many retailers have already disclosed their annual financial results, the vast majority of shops did not employ sales forecasting data. On contrary to Mohamud and Mwangi (2021) on supply chain performance, the findings from this study prove that the approaches utilized to forecast sales are fully subject to interpretation. The share of data derived by the industry increased between 2013 and 2021, according to secondary sources. This study provides retail managers with a complete framework for tackling three critical issues: sales forecasting, market analysis, and performance assessment, as well as a thorough guide. The system was created with the goal of doing business analytics. Prescriptive analytics, diagnostic analytics, predictive analytics, and operational analytics are the four distinct modules of business analytics. What should be done is determined by prescriptive analytics, why something happened is determined by diagnostic analytics, and what will happen is determined by operational analytics (how to take actions to improve shortcomings). Sales forecasting combines both diagnostic and predictive analytics, market analysis incorporates both descriptive and predictive analytics, and performance assessment incorporates both diagnostic and prescriptive analytics.

Furthermore, the evidence supported both the legitimacy and the discretionary assumptions. According to the legitimacy hypothesis, improved sales forecasting leads to lower monitoring and agency expenses, which leads to an increase in corporate value. The findings expound

Oballah, Waiganjo, and Wachiuri (2015) idea by showing that the discretionary based forecasting, promotes businesses to share information whenever they foresee a successful operation. This situation has emerged as a direct result of a significant number of mobile phone retail stores recently implementing sales forecasting strategies, which has resulted in the current state of things. Similarly, the accuracy of a retailer's estimates may be influenced by both the nature of their business and the location of their outlets.

According to the findings of this study project, employing sales predictions can enhance numerous areas of decision-making in a business context. As a consequence, budgeting, risk management, and general business planning are all simplified. The results support Singh and Kumar (2020) that accurate sales forecasting allows businesses to appropriately manage their cash flow and allocate resources for future growth. Combined FT helps sales teams achieve their goals by detecting red flags that suggest possible difficulties early in the sales process and making required course changes before it is too late. Furthermore, Combined FT supports businesses in properly forecasting their costs and earnings, allowing them to estimate both their short-term and long-term levels of success. A real CRM solution has a forecasting feature that can be used to generate forecasted sales reports. These reports enable sales teams to fine-tune their selling strategies. While Sales Representatives have constant access to information such as their quotas, Sales Managers may be able to make more informed business decisions about how their team's resources should be used. According to the study's findings, there is a substantial relationship between combined FT and total business performance.

Forecasting is an important part of the client demand planning process for phone retailers within Nairobi CBD. In this study, both statistical forecasting and consensus procedures are regarded as legitimate strategies. Similar to the findings, Ahmad and Zabri (2018) investigated the effectiveness of realized volatility forecasting using targeted selection and combination approaches that include crucial explanatory factors. These study findings are quite similar to the one that is now underway. Recent SF research has mostly focused on technique development; however, there is less information concerning how forecasting approaches are really employed in enterprises. Similar links have been discovered in the disciplines of logistics and operations research. Modelling studies have aided in the analysis of the influence of technology on forecast accuracy, replenishment vendor controlled inventory management and collaborative planning forecasting. The findings have also helped

to quantify the influence of prediction performance by translating the statistical criteria that are commonly used to evaluate predictions into terms that management can understand.

5.3 Conclusion

The purpose of this study was to investigate how forecasting strategies influence performance of mobile phone retail outlets within Nairobi CBD. Retailers have now embarked in hiring of operational researchers and statisticians, the purchase of computer tools, and an increase in financial commitment, which are all indicators of the SF function's raising importance inside city organizations. Organizations have shifted toward more systematic decision making that includes explicit reasons for individual acts. The rising complexity of organizations and their settings has made it more difficult for decision makers to assess all of the elements relevant to the future development of the company. Additionally, retailers have progressed toward more systematic decision making that incorporates clear reasons of individual acts. Concerning the second issue in particular, it is evident that forecasting information is only effective when applied to the decision-making and planning processes of an organization; nonetheless, the forecasting techniques need to be drastically revised before they can be implemented. It is vital to construct solid bridges between theory and practice and to eliminate a number of problems before successfully and efficiently deploying forecasting methods in management settings. This is required before the application may be effective and efficient.

The results of this study reveal that judgment-based forecasting is applied regularly in the retail business, either on its own or in conjunction with forecasts made by computers. Forecasts are not always as tied to the activities and systems that they support, despite the fact that research on modelling has equipped us with a tool for studying the relationship between operating performance and forecasting in isolation. Predictions are created and carried out by people on a regular basis, and individuals have some input in how forecasts are utilized in various circumstances. For instance, they have the choice of taking the supplied predictions in their present form, changing them before putting them to use, or deciding not to utilize the projections completely in favour of their own calculations. Researchers are interested in the possible influence that management aspects and human behaviours have in the generation and application of forecasts, and they are researching into this subject. The produced forecasts often involve future demand predictions at a number of product or service hierarchy levels; however this is something that can vary widely based on the purpose and application. In contrast to finance managers, who are more concerned with estimations at the

divisional or corporate level, marketing managers are more concerned with sales category or market-level predictions, which are typically most relevant to retail enterprises. This is because sales categories and marketplaces are more easily changed by external variables.

5.4 The Limitation of the Study

The reliability and validity of the study's findings, conclusions, and recommendations were all impacted by the constraints that were placed on the study. There are hundreds of retail firms in Kenya, some of which are registered while others are not. This may not fairly depict the nature of sales forecasting and the influence that it has on shop performance. As a consequence of this, it is conceivable that the study does not sufficiently reflect all Kenyan enterprises or the ways in which these organizations may increase their organizational value through sales forecasting. A secondary study reliability test was carried out, but it was unable to identify bias owing to the potential that the business had manipulated the data in order to appeal to a range of stakeholders, such as consumers, investors, and the government.

5.6 Recommendations for Further Study

This study tries to understand how the data from multiple forecasting are integrated to improve organizational performance. Additionally, the study show how differences in combination methods are reflected in forecast performance in order to produce a more successful sales forecasting technique for retail stores. In spite of the fact that a theoretical framework has recently emerged to assist in explaining the role that management plays in the generation of forecasts, very little research has been conducted to investigate how forecast users may influence how forecasts are utilized in planning and management activities. There is a gap in our understanding of the relationship between forecasting and operating performance due to the lack of empirical data regarding how management actually combines the results from various forecasting approaches and how variations in combination strategies are reflected in forecast performance in small retail outlets. While this study has addressed the topic of how user perceptions and actions may impact forecast utilization to support sales choices, there remains a gap in our understanding of how user perceptions and actions may influence forecast usage to support sales decisions.

This study gives convincing evidence that when predictions are incorporated when employing combined FT, accuracy rises and accuracy variability falls. However, there is a need to show that this inclination is maintained even when new processes are introduced to the forecasting process. These gains were especially visible for processes or combinations of procedures that

had a high rate of error. Mobile retail enterprises may opt to focus their attention on the junction of subjective and objective forecasts as a viable target market. According to the findings of this study, integrating judgmental forecasts with other approaches has the potential to increase the accuracy of sales forecasting. Therefore, phone retailers can improve their sales by use of advanced technology to combine forecasting strategies.

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APPENDICES

Appendix I: Project Budget

ACTIVITY	COST (Kshs)
Travelling	11,000.00
Internet expense	6,000.00
Telephone	6000.00
Data Collection Assistant	6,000.00
Lunches during data collection	4,000.00
Typesetting and printing	16,000.00
Spiral and hard copy Binding	11,000.00
Miscellaneous	11,000.00
Total cost	76,000.00

Appendix II: Work plan

Study activities	May 2021	June -Nov 2021	July 2022	August 2022	Sep 2022	August-Nov 2022		
Research topic and Objectives selection								
Literature review and Research methodology								
Proposal writing and submission								
Data collection and analysis								
Final report presentation and correction								
Report submission								

Appendix III: Data Collection Approval



UNIVERSITY OF NAIROBI
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Our Ref: D68/11222/2018

November 03, 2022

National Commission for Science, Technology and Innovation
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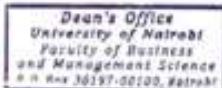
RE: INTRODUCTION LETTER: RUTH KAMAKIA

The above named is a registered Masters of Science in Operations and Technology Management candidate at the University of Nairobi, Faculty of Business and Management Sciences. She is conducting research on "*Sales Forecasting Strategies and Performance of Mobile Phone Outlets in Nairobi, Kenya*".

The purpose of this letter is to kindly request you to assist and facilitate the student with necessary data which forms an integral part of the Project.

The information and data required is needed for academic purposes only and will be treated in **Strict-Confidence**.

Your co-operation will be highly appreciated.

PROF. JAMES NJIHIA
 DEAN, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES

Appendix IV: Questionnaire

Section A: Overview of the Mobile Phone Outlet

1. When was your shop established?
2. How long have you been working in this outlet?
3. How much estimated revenue do you generate per year.
4. What is the total cost of your stock?

Section B: Sales Forecasting Strategies and Organizational performance

1. How often do you conduct your sales forecasting?

Period	Tick
monthly	
quarterly	
Bi-Annually	
Annual	
others	

2. Kindly indicate your level of agreement on the listed statements on relation to sales forecasting strategy and your organizational performance.

	Strongly agree {5}	Agree {4}	Neutral	Disagree {2}	Strongly disagree {1}	Not used
Judgmental methods help your shop to increase sales and stock in the businesses.						
Experts' opinion strategy helps your business to cope with increasing demands in the market segments?						
Sales forecasting strategy helps to expand the outlet by adding a product line?						
Counting methods enables your shop to expand and diversify their investment opportunities through sales forecasting.						

Causal methods increase sales volume and profitability of the shop.						
Historical forecasting strategy is an effective mechanism in identifying customer needs and boosting their retention rates.						
Time series analysis helps your shop to increase sales and stock in the businesses.						
Market testing approach enables your shop to expand and diversify their investment opportunities through sales forecasting.						

1. What are your views on the current sales forecasting strategy used by your retail outlet? What improvement do you suggest?

Thank you for your cooperation