

Effect of Demand Forecasting Practices and Performance of Small and Medium-sized Enterprises in Kajiado County, KenyaAuthors: ¹ Mutua Emmaculate Maria, ² Dr. Sammy Odari, (PhD)DOI: [10.61108/ijsshr.v3i2.186](https://doi.org/10.61108/ijsshr.v3i2.186)¹Scholar, Jomo Kenyatta University of Agriculture and Technology, Kenya²Senior Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya

Effective inventory management is essential for reducing operational costs and enhancing customer satisfaction, particularly among Small and Medium Enterprises (SMES). This study examined the relationship between inventory management practices and the performance of SMES in Kajiado County, Kenya. Specifically, it assessed the influence of demand forecasting practices, on SME performance. Guided by the Theory of Constraints, Resource-Based View Theory, and Stakeholder Involvement Theory, the study adopted a descriptive survey design targeting 180 SMES in Kitenge town, with a sample of 54 respondents. Both primary and secondary data were collected using structured questionnaires and reviewed records. Descriptive statistics (means, standard deviations, and percentages) and inferential statistics (regression analysis) were conducted using SPSS. The findings revealed that most SMES frequently used qualitative and quantitative demand forecasting methods and maintained structured inventory records. Regression analysis showed that demand forecasting practices had a statistically significant positive effect on SME performance ($\beta = 0.574$, $p < 0.05$), with the overall model explaining 71.2% of the variation in performance (Adjusted $R^2 = 0.712$). The study concludes that inventory management practices, particularly demand forecasting, accurate record-keeping, effective control, and disposal strategies, are positively associated with improved SME performance. It recommends that SMES should enhance their demand forecasting by combining qualitative and quantitative methods, including trend analysis and managerial input.

Keywords: Demand Forecasting, Qualitative Practices, Quantitative Practices, Performance**APA CITATION;**

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INTRODUCTION**1.1 Background of the Study**

Effective inventory management is vital for operational efficiency and Small and Micro-Enterprise (SMEs) competitiveness (Tadayonrad & Ndiaye, 2023). Demand forecasting is a core concept in inventory management that entails projecting future customer demand based on historical data, trends in the marketplace, and statistical analysis (Bett, 2018). Demand forecasting enables informed procurement, production planning, stock management, and distribution planning (Purnamasari et al., 2023).

Demand forecasting is not just a tool for big business but also a growth and survival lever for SMES. With accurate forecasts, companies can match supply with anticipated demand, minimize wastage and excess inventory holding and thus reduce operating expenditure (Tadayonrad & Ndiaye, 2023). For their size and capacity, SMES are especially susceptible to a mismatch in demand and supply and thus need strong practice in forecasting in today's dynamic and competitive markets (Dey et al., 2020).

In Kenya and most developing economies, SMEs comprise the foundation of economic growth. The

Kenya National Bureau of Statistics indicates that SMEs account for about 40% of GDP and create most job opportunities in the country. Despite their importance, most SMEs experience shortcomings, including poor inventory management, restricted data access, ineffective procurement, and unsuitable demand planning approaches, which lead to lost revenues, high holding costs, and customer dissatisfaction (Muturi & Njeru, 2019).

Around the world, evidence has proven that effective demand forecasting is strongly correlated with enhanced business performance. For instance, studies from nations including the UK, Turkey, and Malaysia demonstrate how information technology and advanced forecasting instruments have made it possible for SMES to be more resilient and competitive by making inventory practices more responsive to customer demands (Karadağ, 2018; Chowdhury et al., 2020; Mat et al., 2018). Regional studies in Nigeria and Zimbabwe have also emphasised the demand forecasting as crucial to enhancing financial planning and minimising business failures (Folajinmi & Peter, 2020; Wadesango et al., 2019).

Locally in Kenya, studies have indicated that even though most SMES recognize that inventory management is essential, few practice demand forecasting systematically because they lack skills, poor data infrastructure, and low awareness (Kinyua, 2016; Mansaray, 2018). Despite greater customer demands and competitiveness in urban areas such as Nairobi, sound demand forecasting is becoming an operational imperative for SMES as a prerequisite to enhance performance indicators, including cost efficiency, responsiveness, quality, and customer satisfaction.

1.2 Statement of the Problem

Small and Micro-Enterprises are generally accepted as major drivers of employment generation and economic growth in Kenya and contribute about 40% to Kenya's GDP (as cited in Kenya National Bureau of Statistics, 2019; Muturi & Njeru). With their increasing economic role in Kenya, most SMEs have operational inefficiencies undermining the country's performance and sustainable future. Among the most urgent challenges is poor inventory management due to low implementation of demand forecasting practices (Tadayonrad & Ndiaye, 2023; Bett, 2018).

Demand forecasting, predicting future customer demand based on past data and industry trends, is critical for good inventory management and responsiveness in the supply chain (Purnamasari et al., 2023). Demand forecasting allows SMEs to synchronize their supply and expected demand, avoid stockouts and overstocking, keep holding costs low, and increase customer satisfaction (Dey et al., 2020). However, few SMEs in Kenya, particularly Kajiado County, have the technical capacity to do this, and the data and awareness are needed to apply demand forecasting systematically (Kinyua, 2016; Mansaray, 2018).

Although worldwide evidence from nations such as the UK, Turkey, and Malaysia indicates that demand forecasting tool adoption enhances SME performance significantly through responsiveness and competitiveness (Karadağ, 2018; Chowdhury et al., 2020; Mat et al., 2018), evidence within localized research in Kenya is still lacking. Regional investigations within Nigeria and Zimbabwe also support the use of forecasting in enhancing financial planning and minimizing business failures (Folajinmi & Peter, 2020; Wadesango et al., 2019), and yet, similar evidence-based research in Kenyan counties such as Kajiado is lacking.

In Kajiado County, SMEs face a rapidly changing business environment due to urbanization and changes in consumer patterns. Inadequate forecasting hinders their capacity to plan and allocate resources effectively and respond to customer demands. This results in lost business opportunities through excessive inventory holding and poor customer service. Therefore, SMEs in Kajiado County must consider how demand forecasting practices affect their business performance.

Thus, this research endeavours to bridge this gap in understanding by studying the influence of demand forecasting practices on Kajiado County SME performance based on critical performance indicators, including cost efficiency, responsiveness, and customer satisfaction.

1.3 Justification of the Study

This research contributes to existing knowledge on how demand forecasting affects the performance of SMES in Kajiado County by providing local evidence for the first time. Through identifying its role in inventory management, the research gives SME entrepreneurs direct insights into how to enhance efficiency and profitability. The research findings also provide policymakers and supporting institutions with tangible facts to enable them to formulate focused interventions, including training and access to forecasting software, to enhance SME growth and viability in the area.

1.4 Scope of the Study

This research focused on inventory management practices in small and medium-sized enterprises (SMES) in Kajiado County, specifically those operating in Kitengela. It evaluated demand forecasting practices, inventory record management, inventory control methods, disposal methods, and general enterprise performance in relation to one another.

2.0 LITERATURE REVIEW

2.1 Theoretical Framework

The research is based on the Theory of Constraints (TOC) and the Resource-Based View (RBV), presenting an appropriate analytical framework for understanding demand forecasting and its influence on SME performance.

2.1.1 Resource-Based Theory (RBV Theory)

The Resource-Based View (RBV), conceived by Barney (1991), asserts that competitive advantage comes from valuable internal assets that are rare, inimitable, and non-substitutable. For SMES, sound demand forecasting is a strategic ability that aids decision-making, minimizes uncertainty, and matches inventory with customer demand, thus enhancing firm performance. Such accurate forecasting reduces overstocking and stockouts, enhances cash flow, and enables more efficient functioning, whether for SMES competing in dynamic markets such as Kajiado County.

2.1.2 Theory of Constraints (TOC)

Goldratt and Cox (1984) developed the TOC to clarify how constraint recognition and management maximize organizational performance. Poor or inaccurate demand forecasting is one constraint for SMES that causes a mismatch in demand and supply, operational inefficiencies, and forgone sales opportunities. Improved forecasting practices, throughput, and performance alleviate this bottleneck for SME.

2.2 Conceptual Framework

The research formulates demand forecasting methods as an independent variable and SME performance as a dependent variable. Demand forecasting practices assist SMES in anticipating demand, aligning production and purchase with market patterns, and allocating resources

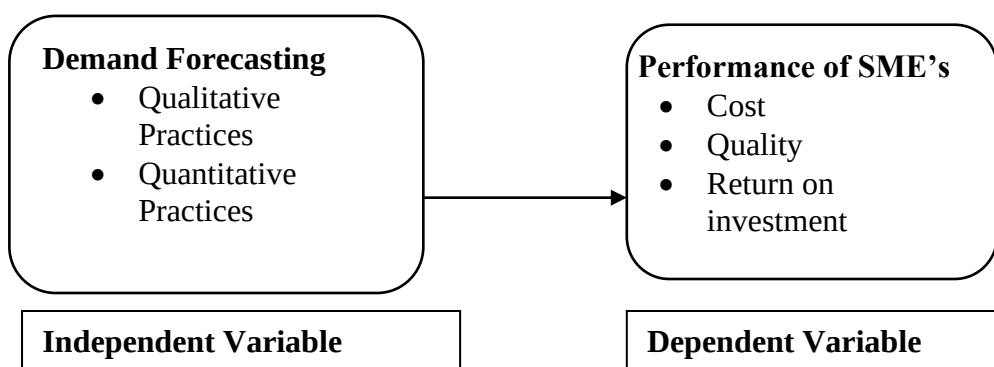


Figure 1: Conceptual Framework

2.3 Empirical Review

Demand forecasting entails studying historical data and market trends to forecast customer demand in the future. Fiori and Foroni (2019) state that it aids in making order quantity decisions, inventory

management, and financial planning. Forecasting approaches are commonly classified into qualitative methods, such as expert judgment and the Delphi method, and quantitative methods, including trend analysis, analysis of historical sales data and time series forecasting (Priyadarshi et al., 2019; Sopha & Himadhani, 2021). Successful demand forecasting makes it easier for SMES to plan their production, manage their resources and adjust to market changes. Demand forecasting decreases the chances of overstocking and stockouts and directly affects customer satisfaction and financial profitability. Muchaendepi et al. (2019) highlight that strong demand planning aligns supply chain operations with forecasted demand; thus, SMES can remain competitive and financially viable. Mulandi and Ismail (2019) noted that SMES' demand forecasting approaches enhanced operational efficiency and selling performance. Such approaches allow SMES in counties such as Kajiado County to be responsive to seasonality and changes in consumer behaviour, improving resilience and growth in the long term.

3.0 RESEARCH METHODOLOGY

The research approach was meticulously detailed, beginning with the research design, which Kothari (2014) defined as the master plan for data gathering and analysis to achieve study goals, and Polit et al. (2001) described as the blueprint for how, when, and where data would be collected and processed. This study specifically utilized a descriptive research design to capture a snapshot of the existing status and attitudes concerning agricultural and livestock production impacted by a road construction project. This design was deemed suitable because it allowed for the quantification of relationships between variables like access to markets, production levels, and animal health, while also enabling a qualitative understanding of community-level challenges and experiences (Lune & Berg, 2016). Previous research by Rahmatullah et al. (2020) and Singh et al. (2021) confirmed the accuracy of descriptive studies in measuring sectoral performance and socio-economic implications, thus justifying its application here. The target population, which Mugenda and Mugenda (1999) referred to as all individuals pertinent to the study, comprised 250 stakeholders directly engaged in livestock and agriculture production along the Isiolo-Mandera Road corridor, including pastoralists, farmers, local agricultural officers, agroveter operators, and livestock traders. A sampling frame, a comprehensive list of all target population members from which the sample is drawn (Orodho, 2009), was developed using county government records and community registers, including registered farmers' groups, livestock market committees, agroveter outlets, and county agricultural offices within Isiolo, Wajir, and Mandera counties. For the sample and sampling technique, stratified random sampling was employed to ensure adequate representation across key stakeholder groups based on occupation and geographical location, as advised by Bougie & Sekaran (2010) and Orodho (2009). Following Mugenda & Mugenda (2003)'s guideline that a sample size between 10% and 30% of the population is acceptable for descriptive studies, a 20% sampling rate resulted in a total sample of 150 respondents, with 50 respondents randomly selected from each of the three sampled counties to avoid bias and improve generalizability. Specifically, from a total of 180 managers/owners across various SME categories in a related table (which appeared to be a separate sample illustration but was included in the provided text), 54 respondents were selected, representing a 30% sample. The research instruments included both primary and secondary data sources. Primary data were collected using semi-structured questionnaires with both closed-ended and open-ended questions, designed to capture information on agricultural productivity, animal health, market access, and perceptions of the road project's impact, a method supported by Mugenda & Mugenda (2003) for its ability to yield both quantitative and qualitative data. This instrument was developed based on existing literature and pilot-tested for clarity and applicability. Secondary data, providing context and support, included county government reports, previous research studies, and agricultural production data. The data collection procedure involved trained research assistants administering questionnaires to sampled participants, utilizing a drop-and-pick method to enhance response rates, a technique that Burns & Grove (2003) supported for maintaining data quality and consistency. Secondary data were obtained from county offices, web-based databases, and published documents. Pilot testing was conducted with 15 members (10% of the sample size) from

surrounding communities not included in the main sample, a practice aligned with Cooper & Schindler (2002) and Mugenda & Mugenda (2003). This pilot established the reliability and validity of the questionnaire, allowing for the reformulation of unclear items. Content validity was ensured through expert review by a supervisor, agricultural economist, and local extension officer. Reliability was assessed using Cronbach's alpha coefficient, with an acceptance level set at 0.7 (Sheetal et al., 2016; Cherry & Daley, 2013). Finally, data processing and analysis involved checking collected data for completeness, coding, and entry into SPSS version 22. Descriptive statistics (frequencies, means, standard deviations) were used to summarize demographic and sectoral characteristics, while inferential statistics, specifically multiple regression analysis, examined relationships between infrastructure improvements (independent variables) and agricultural/livestock outcomes (dependent variables). Qualitative data from open-ended responses were analyzed using content analysis to identify recurring themes and insights, with Microsoft Excel 2019 utilized for data visualization.

4.0 RESULTS AND DISCUSSIONS

4.1 Demographic Information

To ensure unbiased data, the study examined the gender distribution of participants. As shown in Figure 1, males comprised 53.8% of respondents, and females 46.2% of respondents, indicating fair gender representation in the inventory management and SME performance study in Kajiado County.

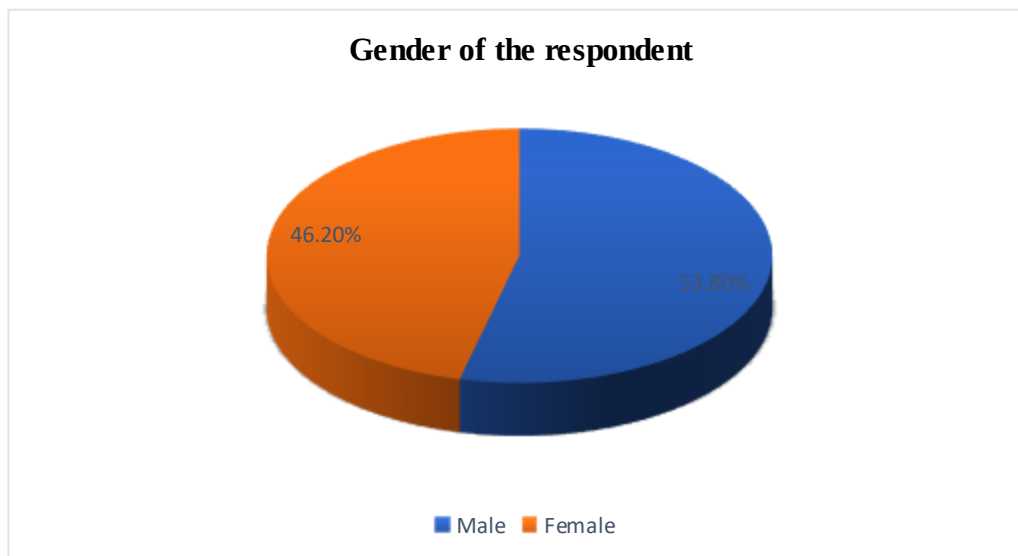


Figure 1.2: Gender of Respondents

The study also assessed respondents' roles within their enterprises (Table 1.3). Results showed that 37.3% were procurement officers, 33.3% supply chain assistants, 25.5% store personnel, and 3.9% held other positions, confirming participants' relevant knowledge of inventory management.

Table 1: Position held in the enterprise

Position	Frequency	Percentage %
Stores person	13	25.5%
Procurement Officer	19	37.3%
Supply Chain Managers and Assistant	17	33.3%
Others	2	3.9%
Total	51	100%

Education levels were also evaluated to gauge understanding of inventory practices. Figure 2 shows that 31.2% held diplomas, 24.6% secondary education, 22.7% certificates, and 21.5% degrees, suggesting an adequate educational background among participants.

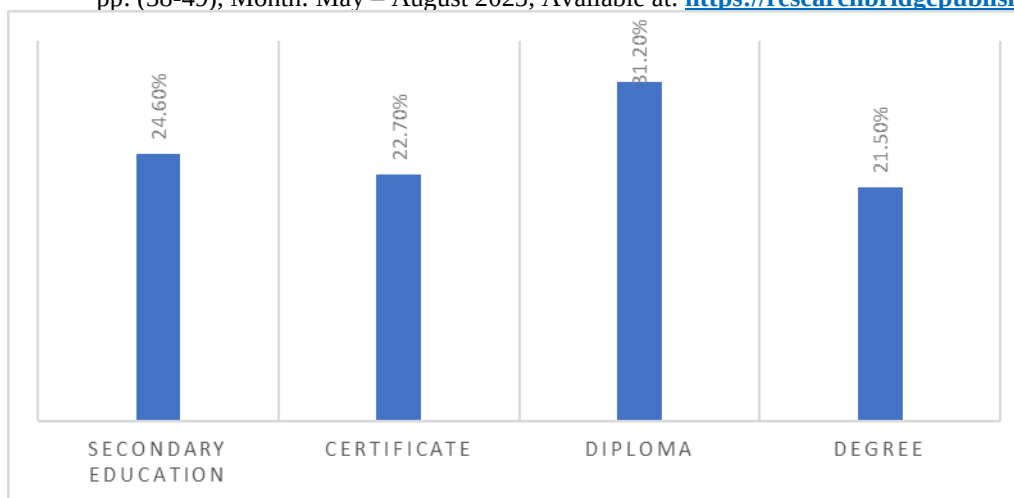


Figure 2: Level of Education

Lastly, the age distribution revealed that most respondents (39.2%) were aged 26–35, followed by 29.4% over 35, 27.5% aged 19–25, and 3.9% below 18 as shown in Table 1.4, indicating considerable experience among participants.

Table 2: Age Distribution

Age	Frequency	Percentage
Below 18 years	2	3.9%
19-25 years	14	27.5%
26-35 years	20	39.2%
Above 35 years	15	29.4%
Total	51	100%

The demographic findings suggest that the respondents were well-suited to provide informed insights on inventory management practices. Most held relevant positions, such as procurement officers, supply chain assistants, and store personnel, indicating direct involvement in inventory-related functions. Additionally, most respondents had at least a diploma-level education, reflecting a reasonable capacity to understand and apply inventory concepts. The age distribution, with most participants between 26 and 35 years and a significant portion above 35, further implies a workforce with practical experience and maturity.

4.2 Descriptive Statistics

4.2.1 Demand Forecasting

The study examined the extent to which SMES in Kajiado County utilise demand forecasting methods as a strategic approach to planning for future demand. As illustrated in Figure 1.3, most respondents (84.5%) reported using demand forecasting, while 15.5% indicated they do not employ these methods.

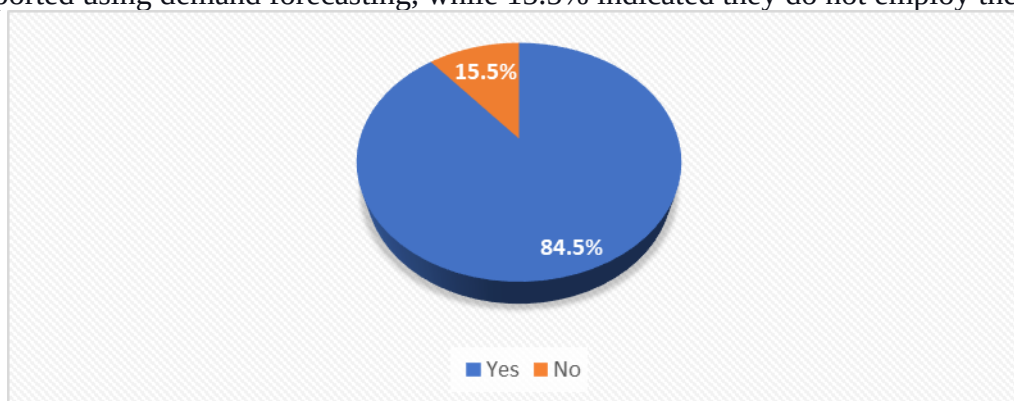


Figure 3: Use of Demand Forecasting Methods

Further analysis assessed the frequency and types of demand forecasting techniques applied by SMES, summarized in Table 3.

Table 3: Demand Forecasting Methods

Practices	5	4	3	2	1	Mean	S.D
This enterprise uses qualitative data obtained from information given by consumers to predict the expected sale for enterprise for the next week, month or year	80.7%	18.2%	1.1%	-	-	4.22	.521
This enterprise uses quantitative data obtained from quantity demanded by consumers to predict the expected stock supply to satisfy the customers demand for the next week, month, or year	63.9%	32.5%	3.4%	-	-	4.24	.520
The business has an established system that is used in forecasting sale and stock supply for the next period of time	62.4%	36.6%	1.0%	-	-	4.27	.647
The business uses the weekly and monthly trend of customers in determining the next sales and stock purchase and supply	65.2%	27.7%	7.1%	-	-	4.65	.681
The enterprise depends on the business owner's opinion in determining the expected demand	75.2%	22.7%	2.1%	-	-	4.01	.511
Overall mean and standard deviation						4.28	0.576

Key: (5) -Strongly Agree (4) – Agree (3) - Neutral (2) – Disagree (1)-Strongly disagree.

Key findings reveal that most respondents actively use various approaches to forecast demand. Specifically, 80.7% strongly agreed that their enterprises utilise qualitative consumer data to predict sales for upcoming weeks, months, or years (Mean = 4.22, SD = 0.521), with an additional 18.2% moderately agreeing. Likewise, 63.9% agreed that their businesses rely on quantitative data reflecting consumer demand to forecast stock supply (Mean = 4.24, SD = 0.520). Moreover, 62.4% strongly affirmed that formal systems are in place for predicting sales and stock for future periods (Mean = 4.27, SD = 0.647). Weekly and monthly customer trend analysis was also prominent, with 65.2% strongly agreeing that these trends guide their sales and stock decisions (Mean = 4.65, SD = 0.681). Additionally, the business owner's judgment remains influential, as 75.2% strongly agreed that the owner's opinion plays a key role in determining expected demand (Mean = 4.01, SD = 0.511). The findings indicate that demand forecasting is widely adopted among SMEs in Kajiado County, with 84.5% of respondents reporting its use. The high mean scores across different forecasting methods suggest that SMEs apply qualitative and quantitative techniques, such as customer feedback, sales data trends, and managerial judgment, to anticipate future demand. The presence of formal systems and structured practices further implies a strategic approach to inventory planning. This widespread use of forecasting methods can enhance SMEs' performance and competitiveness. These results align with the findings of Purnamasari et al. (2023), who investigated the role of demand forecasting in improving inventory management among retail SMEs. Their study revealed that SMEs that implemented demand forecasting systems, especially those using both historical sales data and customer trends, achieved significantly better stock optimization and customer satisfaction. Specifically, they found that enterprises using trend-based forecasting methods reduced excess inventory by 23% and improved

order fulfillment rates by 31%. The alignment affirms that structured and consistent demand forecasting is instrumental in enhancing SME operational performance.

4.2.2 Performance of SMEs

The study assessed how the adoption of inventory management practices, particularly demand forecasting, has influenced the performance of SMEs in Kajiado County. As shown in Table 4.9, a significant majority (81.7%) strongly agreed that using demand forecasting techniques has enhanced sales and regulated stock purchases and supply (Mean = 4.91, SD = 0.568). Additionally, 85.7% strongly agreed that implementing inventory record management systems has reduced losses related to poor record-keeping (Mean = 3.51, SD = 0.417).

Most respondents (86.4%) also acknowledged that inventory control systems have improved the management of business operations, subsequently increasing profits (Mean = 4.43, SD = 0.561). Furthermore, 91.5% strongly agreed that inventory disposal methods help conserve capital, leading to higher profits (Mean = 4.72, SD = 0.592). The findings indicate that effective inventory practices contribute significantly to SME performance, with an overall mean of 4.39 and a standard deviation of 0.534.

Table 4: Performance of SMEs

Output	5	4	3	2	1	Mean	S.D
Adopting demand forecasting practices has increased business sales and regulation of stock purchase and supply.	81.7%	18.3%	-	-	-	4.91	.568
Incorporating inventory record management system in the business has reduced losses incurred by the business as a results poor records entry, storage and retrieval.	85.7%	14.3%	-	-	-	3.51	.417
The implementation of inventory control methods improves management of business activities thus increasing business profit	86.4%	13.6%	-	-	-	4.43	.561
The implementation of inventory disposal methods saves business capital leading to an increase of the business profit	91.5%	8.5%	-	-	-	4.72	.592
Overall mean and standard deviation						4.39	.534

These results are consistent with findings by Atnafu and Assef (2018) in Ethiopia, who concluded that SMEs employing modern inventory management techniques experienced a significant improvement in competitiveness and market performance compared to their counterparts. This supports the assertion that structured inventory systems, particularly demand forecasting and inventory control, are key to SME growth and profitability.

4.3 Inferential Statistics

4.3.1 Model's Goodness of Fit

Table 5 presents the model's goodness-of-fit statistics for assessing how well the regression model explains the variation in the performance of SMES. The coefficient of determination (R^2) is 0.314, indicating that demand forecasting practices can explain approximately 31.4% of the variability in SME performance. After adjusting for the number of predictors and sample size, the adjusted R^2 is 0.238, suggesting a slightly reduced explanatory power when accounting for model complexity. The Durbin-Watson statistic is 0.668, which may indicate the presence of positive autocorrelation in the residuals. These findings imply that while demand forecasting practices contribute to performance variations among SMES, other unexplored factors may also play a role.

Table 5: Model's Goodness of Fit Statistics

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.1772 ^a	.314	.0238	.11586	0.668

a. Predictors: (Constant), demand forecasting practices,

4.3.2 Analysis of Variance (ANOVA)

Table 6 presents the ANOVA results used to assess the overall significance of the regression model. The model yielded a regression sum of squares (SSR) of 22.149 and a residual sum of squares (SSE) of 1.438, with respective degrees of freedom of 4 and 47. The F-statistic was 178.613, and the p-value was 0.000, statistically significant at the 5% level ($p < 0.05$). This confirms that the regression model provides a good fit and that the predictor variable (demand forecasting practices) significantly influences SME performance.

Table 6: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.149	4	5.537	178.613	.000 ^b
	Residual	1.438	47	.031		
	Total	23.587	51			

a. Predictors: (Constant), demand forecasting practices,

b. Dependent Variable: Performance of SMEs.

4.3.3 Regression Coefficients

The regression coefficients in Table 4.14 indicate that demand forecasting practices have a statistically significant positive effect on SME performance. The unstandardized coefficient for demand forecasting is 0.574 ($p = 0.001$), implying that a one-unit increase in demand forecasting practice scores is associated with a 0.574-unit increase in SME performance, holding other factors constant. The constant term (β_0) is 2.143, representing the estimated performance of SMES when demand forecasting practices are absent or held at zero.

Table 7: Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.143	.274		8.147	.001
Demand forecasting practices	.574	.137	.294	7.129	.001

a. Dependent Variable: Performance of SMEs

These results establish that demand forecasting practices statistically significantly and positively affect SME performance in Kajiado County. Demand forecasting's unstandardized regression coefficient is $B = 0.574$, and its p-value is 0.001, indicating high statistical significance at 1%. This suggests that an increase in demand forecasting practice by one unit is linked with an increase in SME performance by 0.574 units, holding constant all other variables. These results align with Purnamasari et al.'s (2023) study, which highlighted that businesses that applied qualitative and quantitative forecasting methodologies were likelier to improve decision-making, minimise inventory-related expenditures, and respond effectively to market changes. Accordingly, the current research confirms that including systematic demand forecasting methodologies in SME practices is an optimal practice and performance improvement driver strategy.

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter summarizes the main research findings, draws conclusions informed by the research objectives, and presents actionable recommendations to SMES and stakeholders concerned. The research sought to explore the role played by inventory management practices, particularly demand forecasting, in the performance of Kajiado County's SMES.

5.2 Summary of the Findings

The study findings indicate that most SMES actively utilize qualitative and quantitative demand forecasting methods. Respondents reported that their firms use qualitative insights from customer behavior and preferences to project future sales over weekly, monthly, and yearly horizons. Additionally, quantitative data based on consumer demand volumes estimates required stock levels to meet projected needs.

The results show that SMES regularly analyze weekly and monthly sales trends to guide future stock purchases and supply planning. Many respondents affirmed that business owners' judgment plays a role in forecasting future demand.

Statistical regression indicated a significant positive association between demand forecasting practice and SME performance. In particular, an increase of one unit in demand forecasting corresponded to an increase in performance by 0.574 units ($p < 0.05$). This implies that SMES with formal and data-driven forecasting practices have more favorable performance results than those lacking.

According to the study, effective demand forecasting is essential to SME performance. Combining qualitative and quantitative forecast methods based on customer opinions, demand patterns, and management judgment results in better sales and inventory planning and decision-making. The positive relationship between performance and forecasting practices highlights the power of anticipatory and informed planning in enhancing business performance among Kajiado County's SMES.

5.3 Recommendations of the Study

The study recommends the following based on the findings:

SMES must enhance their demand forecasting functions by incorporating qualitative and quantitative approaches. This entails assessing customer trends, using sales data, and including managerial judgment while planning. Training and investing in forecasting software are critical. Regular capacity-building for SME staff and proprietors on advanced forecasting techniques must be done for greater accuracy and efficiency. Government and support organizations need to enable access to low-cost forecasting technologies and platforms specific to SME requirements. Policymakers need to assist structured forecasting mechanisms through subsidies and grants towards software tools and create awareness about data-based decision making for growth and sustainability in SMEs

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