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Internal Resource Mobilization Strategies and Competitiveness of Medium Sized Manufacturing Firms in Ruiru Kenya

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ABSTRACT

Purpose: The purpose of this study was to establish the effect of internal resource utilization strategies on competitive advantage among medium-sized manufacturing industries in Ruiru, Kenya. The study was centered on establishing the effect of financial resource management strategies, human resource utilization practices and technological adoption strategies on competitive advantage among medium-sized manufacturing industries in Ruiru, Kenya.

Methodology: The study used descriptive research design and targeted 540 senior employees from fourteen medium size manufacturers in Ruiru Kenya. Sample size of 230 respondents was determined using Yamane formula. The study used primary data which was collected through structured questionnaires. Through SPSS Version 24.0, data analysis involved descriptive, Pearson correlation and simple linear regression. Tables and figures were used for presentation of results.

Findings: The study established that there existed a statistically significant relationship between financial resource management strategies and the competitive advantage of medium size manufacturing, r (0.721); p value < 0.01. Regression coefficients showed that a unit increase in financial resource management strategy attracted 0.440 increase in competitive advantage of manufacturing firms. The study also established existence of a statistically significant relationship between human resource utilization strategy and the competitive advantage of medium size manufacturers, r (0.677); p value < 0.01.Regression coefficients showed that a unit increase in HR utilization strategies attracted 0.600 increase in competitive advantage of manufacturing firms. The study finally established existence of a statistically significant relationship between technological adoption strategies and the competitive advantage of medium-size manufacturers, r (0.584); p value < 0.01. Regression coefficients showed that a unit increase in technology adoption strategies attracted 0.427 increase in competitive advantage of manufacturing firms. The study concludes that financial resource management strategy is significantly and positively correlated with competitive advantage of medium-size manufacturers.

Unique Contribution to Theory, Practice and Policy: The study thus recommends medium-size manufacturers to focus on; adopting lean manufacturing practices, conducting regular workforce audits and aligning staff with production demand based on data driven scheduling techniques, and allocating annual budgets for technology upgrades aligned with operational needs and innovative trends.

Key Words: *Financial Resource Management, Human Resource Utilization, Technological Adoption, Competitive Advantage*

Background of the Study

The main goal of an organization in creation of competitive advantage, based on its resources and abilities, is to gain competitiveness and achieve a distinctive position regarding performance in the business market. Competitive advantage is the degree to which a firm creates more economic value than rival firms in a given product market (Maritan & Peteraf, 2018). The key for achieving competitiveness is sustainability of competitive advantages based on identification and perception of customers' demands, concentration on customer, and improvement of the process from customers' perspectives (Hosseini, Soltani, & Mehdizadeh, 2018). Competitive advantage grows out of value a firm is able to create for its buyers that exceed the firm's cost of creating it (Cegliński, 2017). Value is what buyers are willing to pay, and superior value stems from offering lower price than competitors for equivalent benefits or providing unique benefits that more than offset a higher price. There are two basic types of competitive advantage; cost leadership and differentiation. The cost advantage strategy is a competitive advantage strategy that takes into account the existence of competitors rather than customers by focusing on lower prices to buyers (Gitau & Mang'ana, 2021). A cost leadership strategy requires aggressive construction of efficient scale facilities, vigorous efforts to achieve cost reduction due to experience, tight cost and overhead control, avoidance of marginal customers, and minimizing costs in areas such as research and development (R&D), service, sales, advertising, etc (Njaaga & Ragui, 2018). Low-cost relative to competitors is the theme that animates the whole strategy, although quality, service and other areas cannot be ignored. However, Kharub, Mor and Sharma (2018) argued that there is no direct nor significant relationship between cost leadership competitive strategy and firm performance.

A differentiation strategy is a company strategy that seeks to create a unique product to face competitors in its industry. This uniqueness can be seen from the product characteristics that offer the value that consumers are looking for so that the product is unique and different in the eyes of consumers (Ifeoma et al, 2021). According to Modi and Wambua (2024), differentiation involves offering unique features, benefits, or characteristics that distinguish a firms' products or services from those offered by rivals. In principle, the differentiation strategy is to take the customer as the main focus. This strategy builds the buyer's perception of superior quality, product design, technology, image, material weight or service. Sheikh and Kiiru (2023) showed that most of the respondents agreed that product differentiation impacts on performance of firms. In the manufacturing sector, several enhancements in procedures, new product development, price battles, and distribution strategies have been used by each firm to set themselves apart from their competitors.

The focus strategy is used to build a competitive advantage in a narrower market segment. This type of strategy is intended to serve the needs of consumers who are relatively small in number and in their decision making to buy are relatively not influenced by price (Nyambok, Senaji & Awino, 2023). The focus strategy is very different from the other two strategies, because this strategy emphasizes the choice of a narrow competitive scope in an industry and can choose a

cost focus or differentiation strategy (Nanyangwe & Phiri, 2021). In manufacturing sector, focus strategies are also often carried out, especially for products that are limited, or usually only made when there are events with small quantities. Skinner suggests that firms should focus each plant on a limited set of products, technologies, volumes, and markets, assigning each factory a unique set of manufacturing tasks based on their competitive strategy. This design reduces complexity and achieves consistency in the manufacturing system, enhancing the firm's competitive position in the market (Dohale, Akarte, & Verma, 2021). This approach involves making structural and infrastructural decisions to support and accomplish these tasks.

Organizational resources, which are significant, uncommon, and supreme, provide a competitive advantage in service operations. They can be the strongest or weakest link to airline performance, even in highly automated designs. Financial resources and human resources are the top major classes influencing airline firm performance. As such financial resources, Information Communication Technology resources, and human resources, as they are crucial assets in manufacturing operations. These resources are essential for efficient operations and management in capital intensive manufacturing business. Murimi et al. (2021) emphasize the importance of strategic resources in organizations for sustained competitive advantage. They suggest that resources must be inimitable, rare, valuable, and imperfectly substitutable, but these are not sufficient conditions. They also note that resources themselves are not valuable, but their ability to enable firms to perform activities that create advantages makes them strategic. This compels medium manufactures to identify such critical resources to gain competitive advantage.

Medium-sized firms drive Kenya’s manufacturing sector growth. Manufacturing sector is an important stimulus to the economy and a key pillar of the vision 2030 (KIPPRA, 2024). The number of people employed in the formal manufacturing sector accounted for 12.1% of the total number of persons engaged in the formal sector in 2019 (KNBS, 2020). These firms employ between 50 and 249 workers (KNBS, 2022). They contribute about 12% to the GDP (World Bank, 2022). Most firms operate in agro-processing, steel, textiles, and plastics. The main challenges include high taxation, expensive power, and poor infrastructure (AfDB, 2021). The sector lacks skilled labor and faces stiff imports competition (KIPPRA, 2022). Modernizing machinery remains a major hurdle (World Bank, 2021). Additionally, medium-sized firms struggle with inefficient resource utilization, which hampers their competitiveness in both local and global markets (Murimi et al., 2021). However, government incentives including the Special Economic Zones and Kenya Industrial Transformation Program (KITP), gaps in policy implementation and technological adoption persist, limiting their potential (Karani, 2022).

Ruiru is a key manufacturing hub in Kenya (GOK, 2023). It attracts firms due to its strategic location (KNBS, 2022). The town hosts notable firms such as Bidco Industrial Park, Devki Steel Mills, Jetlak Foods, and Spinners & Spinners Limited (Maina et al., 2017). Others are BURN Manufacturing, Taifa Mabati, and Danco Plastics (KEPSA, 2022). Its strategic location along the Thika Super Highway facilitates efficient transportation of raw materials and finished goods, making it an attractive investment destination (Kamau, 2016). The area’s industrial growth is

further supported by the availability of land and proximity to Nairobi, enabling firms to access markets and labor easily. These companies engage in steel, food, and plastics production. However, challenges such as inadequate infrastructure and high operational costs affect the sector's overall performance (KNBS, 2018). .

Statement of the Problem

Manufacturing firms derive significant benefits from competitive advantage, including market leadership, profitability, and long-term sustainability. Competitive advantage allows firms to differentiate their products, reduce costs, and enhance operational efficiency (Jahed et al., 2022). As a result, firms with a competitive edge can innovate, reduce costs, and respond to market demands effectively. Despite its importance, many medium-sized manufacturing firms struggle to harness these resources effectively (Lugasi & Kariuki, 2018). This challenge limits their ability to compete in dynamic markets. Internal resource utilization significantly contributes to competitive advantage by optimizing operational efficiency and fostering innovation (Murimi et al., 2021). Firms in the industry appear to neglect resource planning which would help to high light customers' need and allocate appropriate resources. Specifically, medium-sized firms often face challenges such as limited access to capital, inadequate skilled labor, and outdated technology (Ndirangu & Owino, 2023). These issues hinder their ability to leverage internal resources for sustained competitiveness, particularly in resource-constrained environments such as Kenya. In the local context, medium-sized manufacturing firms encounter strategic gaps in resource utilization, including poor financial management, lack of employee training, and insufficient investment in technology (Amaya et al., 2024). Empirical studies highlight the need for tailored strategies to address these issues, yet limited research exists on how medium-sized firms in Ruiru can optimize internal resources for competitive advantage (Ugboko & Ehugbo, 2021). Therefore, this study aimed to bridge these gaps by investigating effect of internal resource utilization strategies on competitive advantage among medium-sized manufacturing industries in Ruiru, Kenya.

Research Questions

i To what extent do financial resource management strategies affect competitive advantage among medium-sized manufacturing industries in Ruiru, Kenya?
ii To what extent do human resource utilization practices affect competitive advantage among medium-sized manufacturing industries in Ruiru, Kenya?
iii To what extent do technological adoption strategies affect competitive advantage among medium-sized manufacturing industries in Ruiru, Kenya?

Literature Review

Financial Resource Management Strategies and Competitive Advantage

Budgeting practices in medium enterprises involve planning and allocating financial resources to achieve operational and strategic goals. Effective budgeting enables medium enterprises to

prioritize expenditures, forecast revenues, and manage uncertainties (Berry, 2020). It also supports decision-making by providing a framework for evaluating financial performance and identifying areas for improvement (Brigham & Houston, 2021). However, SMEs often face challenges such as limited financial expertise and volatile cash flows, which can hinder accurate budgeting (Welsh & White, 2021). Despite these challenges, robust budgeting practices are critical for ensuring financial discipline and sustaining long-term growth in medium enterprises.

Wahaibi et al. (2024) conducted a comprehensive systematic review of the existing literature on capital budgeting practices (CBP) in Small and Medium-Sized Enterprises (SMEs). By analyzing 130 academic publications from 1964 to 2024, we seek to identify key trends, gaps, and emerging themes in this field. The analysis revealed a substantial body of research focusing on CBP in larger corporations but highlights a significant dearth of studies specifically examining SMEs, particularly in developing economies. Despite the value of existing research, the current review underscores the need for further exploration of CBP within manufacturing enterprises. A critical area of inquiry was to understand how enterprises CBP differs from those employed by large firms and the underlying reasons for these discrepancies.

There is a high risk that medium level businesses will go bankrupt soon after their creation, and one of the likely causes is a lack of management capacity. Jimenez, Manzano, and Gamboa (2024) evaluated the planning management skills and budget practices of medium enterprises. The research utilized a quantitative analysis with a descriptive design and a Likert scale questionnaire, converting the data into numerical values using a scientific statistical analysis program and SPSS software setup. The importance of using budget control techniques due to their impact on raising the financial performance of the organization by controlling the organization's costs, is to review the differences in the budget, allocate its resources and choose the best investments for the return on capital. The study showed that the highest percentage of ownership of medium sized businesses are sole proprietorships and closely held corporations. The executives were largely unaware of their creditworthiness, the various policies, regulations and programs offered by government entities.

Yohanis (2023) contends that unfortunately some of the small businesses in Indonesia completely did not experience development and even experienced bankruptcy due to lack of good financial management. Roffia, Benavides, and Carrilero (2024) conducted a study on the implementation of cost accounting (CA) in medium-sized enterprises. Cost accounting is a management accounting tool that has been challenging to implement in medium enterprises, but academicians and practitioners recommend its adoption due to market instability, competitive pressure, and margin erosion. The study used contingency theory to investigate barriers to CA adoption in medium enterprises. A questionnaire was sent to limited liability SMEs in Verona and Vicenza provinces, Italy. The results showed that lack of resources, limited training and skills, firm age, and the presence of the founder negatively influenced CA implementation. Low CA implementation was also associated with inefficiency, uselessness, and unsuitability for business. The effect of company size on CA implementation was not statistically significant.

Despite its limitations, the study contributes to academic debates and practice by illustrating limiting factors and ways to foster CA implementation in medium enterprises during turbulent years.

The medium enterprises play a crucial role in entrepreneurship and unemployment reduction by raising capital. The effectiveness of cost management policy in finance is essential for accelerating growth in SMEs (Gao, 2021). Kajal, Sikder, and Panhwar(2021) aimed to understand the role of cost management strategies in medium-sized enterprises in Poland to create financial sustainability. The study used a conceptual model and secondary data to analyze standard cost management strategies and their advantages and disadvantages. The research was conducted in selected medium enterprises of production and services in Poland from October 2018 to December 2018. The results showed that modern enterprises are focused on quality, but only 9.75% of medium-sized enterprises (39 enterprises) from a representative group of 400 companies from manufacturing, services, production, and service companies apply quality costing. The findings are relevant for accounting practice and theory, as they show that although TQM and quality costing have been popular in literature since the 1990s, their application in practice is too low.

Cash flow management strategies in SMEs involve monitoring and optimizing the timing of cash inflows and outflows to ensure liquidity. Effective cashflow management helps medium enterprises meet short-term obligations, such as payroll and supplier payments, while avoiding over-reliance on external financing (Brealey et al., 2020). Techniques include accelerating receivables, delaying payables, and maintaining cash reserves (Ross et al., 2019). Poor cashflow management is a leading cause of business failure, as it can lead to insolvency despite profitability (Berger & Udell, 2020). Therefore, medium enterprises must prioritize cashflow management to sustain operations and seize growth opportunities. Przychocka, Sikorski, & Milewski (2024) emphasized the importance of financial liquidity management in times of economic uncertainty among businesses. They propose practical strategies for risk identification, cost optimization, and the use of modern technological solutions. The authors analyze the impact of macro- and microeconomic factors, such as the COVID-19 pandemic, Russia's attack on Ukraine, and rising inflation, on economic uncertainty. They propose a proactive approach, focusing on cash flow analysis, risk response, contingency planning, and building stable supplier relationships. They also suggest monitoring liquidity indicators, creating flexible action plans, and actively negotiating payment terms and prices with suppliers.

Athia, Sudarmiatin, and Hermawan (2023) focused on cash management practices of women-owned businesses in Indonesia revealed varying understandings of cash flow management. Entrepreneurs prioritized savings for emergencies and business needs, with some planning for expansion and others focusing on stable growth. These findings contribute to understanding the cash management practices of women-owned enterprises in Indonesia.

Employee development in medium enterprises involves training and upskilling employees to enhance their capabilities and align them with organizational goals. Investing in employee development fosters innovation, improves productivity, and reduces turnover (Armstrong & Taylor, 2020). For middle level businesses, tailored training programs, mentorship, and cross-functional learning opportunities are cost-effective ways to build a skilled workforce (Sung & Choi, 2018). However, limited resources and time constraints often pose challenges for medium enterprises in implementing comprehensive development programs (Kitching, 2020). Despite these barriers, prioritizing employee development is essential for SMEs to remain competitive and adapt to evolving market demands.

Smolarek et al. (2024) conducted a study on job satisfaction and its correlation with fostering competitive advantage in medium-sized enterprises. The research used a quantitative approach, surveyed 590 employees across four Central and Eastern European countries: Poland, the Czech Republic, Slovakia, and Lithuania. The results showed that a higher level of job satisfaction correlates with an enhanced competitive position in medium enterprises, with better competitive positions varying by gender and age. The study aims to fill a gap in research on job satisfaction. It offers insights into the quantitative analysis and assessment of employee satisfaction as a pivotal determinant of competitive advantage within diverse organizational settings.

Employee engagement is a workplace approach resulting in the right conditions for all members of an organisation to give their best each day. The result is that the staff is committed to their organisation's goals and values, motivated to contribute to organisational success, with an enhanced sense of their own well-being. Employee engagement refers to the level of commitment and enthusiasm employees have toward their work and organization. High engagement in medium enterprises leads to increased productivity, better customer service, and lower absenteeism (Albrecht et al., 2018). Strategies such as fostering open communication, recognizing achievements, and promoting work-life balance are effective in enhancing engagement (Saks, 2019). The medium enterprises often struggle with engagement due to limited resources and informal structures, but creating a positive workplace culture can mitigate these challenges (Bakker & Albrecht, 2018). Engaged employees are critical for these to achieve sustainable growth and maintain a competitive edge.

Performance management systems in medium enterprises involve setting clear goals, monitoring progress, and providing feedback to improve employee performance. Effective systems align individual objectives with organizational goals, driving overall productivity and accountability (Aguinis, 2019). For medium enterprises, implementing simple yet structured systems, such as regular performance reviews and goal-setting frameworks, can yield significant benefits (DeNisi & Smith, 2018). However, medium enterprises often lack the resources to adopt sophisticated systems, making it crucial to focus on transparency and consistency (Pulakos et al., 2019). A robust performance management system enables medium enterprises to optimize employee contributions and achieve long-term success.

Korneta (2020) explored stakeholder involvement in performance management systems for medium-sized outpatient clinics. The study used qualitative interviews with 10 clinic representatives. Findings revealed that stakeholder-inclusive systems were more effective ($p < 0.05$). However, the study did not address how these systems could be adapted for medium-size manufacturers, particularly in balancing stakeholder interests with operational demands.

Technological Adoption Strategies and Competitive Advantage

The impact of process automation on gaining competitive advantage is significant. Process automation in medium enterprises involves using technology to streamline repetitive tasks, reduce errors, and improve operational efficiency. The automation of processes such as inventory management, payroll, and customer service can aid medium enterprises save time and reduce costs (Davenport & Ronanki, 2018). Automation also enables medium enterprises to scale operations without proportionally increasing labor expenses (Manyika et al., 2017). However, the initial investment and technical expertise required can be barriers for SMEs (Brynjolfsson & McAfee, 2019). Despite these challenges, adopting process automation is crucial for SMEs to enhance productivity and remain competitive in a technology-driven market.

Cybersecurity management in medium enterprises focuses on protecting digital assets, customer data, and business operations from cyber threats. Effective cybersecurity measures, such as firewalls, encryption, and employee training, are essential to prevent data breaches and maintain customer trust (Kshetri, 2018). Medium enterprises are often targeted by cybercriminals due to perceived vulnerabilities, making robust cybersecurity practices critical (Bada & Sasse, 2019). However, limited budgets and expertise can hinder medium enterprises from implementing comprehensive security measures (Williams et al., 2020). Prioritizing cybersecurity management helps medium enterprises safeguard their reputation and ensure business continuity in an increasingly digital landscape.

Digital marketing in medium enterprises involves leveraging online platforms to reach and engage target audiences, build brand awareness, and drive sales. Strategies such as social media marketing, search engine optimization (SEO), and email campaigns are cost-effective ways for medium enterprises to compete with larger firms (Chaffey & Ellis-Chadwick, 2019). Digital marketing also provides measurable results, enabling SMEs to optimize their strategies and allocate resources effectively (Tiago & Veríssimo, 2018). However, staying updated with rapidly evolving digital trends and algorithms can be challenging for medium enterprises with limited expertise (Quinton & Wilson, 2020). Embracing digital marketing is essential for medium enterprises to expand their market reach and achieve sustainable growth.

Asikin et al. (2024) examined the influence of digital marketing on competitive advantage and MSME performance in Indonesia. The study employed a quantitative method using SPSS and SEM for analysis. A structured questionnaire was used to collect data from MSMEs. Findings indicated that digital marketing had a statistically significant positive impact on both competitive advantage and MSME performance ($p < 0.05$). However, the study did not explore the role of

digital marketing in product customization and manufacturing efficiency, which are crucial for medium enterprises growth in this sector.

Research Methodology

The study used descriptive research design and targeted 540 senior employees from fourteen medium size manufacturers in Ruiru Kenya. Sample size of 230 respondents was determined using Yamane formula. The study used primary data which was collected through structured questionnaires. Through SPSS Version 24.0, data analysis involved descriptive, Pearson correlation and simple linear regression. Tables and figures were used for presentation of results. The multiple regression model was;

$$\gamma = \alpha + \beta_1\chi_1 + \beta_2\chi_2 + \beta_3\chi_3 + \beta_4\chi_4 + \varepsilon$$

Where:γ = Competitiveness of medium-sized manufacturing firms in Ruiru, χ_1 = Human resource mobilization strategy, χ_2 = Financial resource mobilization strategy, χ_3 = Technological resource mobilization strategy, β_1, β_2, β_3 = Coefficients showing the effect of each strategy, α = Constant (baseline competitiveness when all strategies = (0) and ε = Error term

Results

A total of 230 questionnaires was distributed. The study attained a response rate of 77% implying that 176 questionnaires were dully filled and confirmed to meet the requirements for further analysis. According to Okello (2022), a response rate of 75% and above is considered sufficient.

Descriptive Findings.

The study found a positive relationship between financial resource management strategies and competitive advantage in medium-sized manufacturers, with a moderate composite mean of 3.43 and standard deviation of 0.933. For human resource strategies, the study found that the human resource utilization strategy variable achieved a composite score of 3.09, indicating room for improvement in leveraging human capital for sustained competitive advantage. Technological adoption strategies variable achieved a composite mean of 3.48. For competitive advantage, The study revealed that manufacturing firms in Ruiru, Kenya, have a competitive advantage, as their products are preferred over competitors, reflecting strong customer alignment and brand appeal with the overall composite score for competitive advantage being 3.29.

Inferential Results

Pearson Correlation between Financial Resource Management Strategies and Competitive Advantage

Correlational analysis was conducted to determine the strength and direction of the relationship between Financial Resource Management Strategies and Competitive Advantage. The results presented in Table 1 indicate that there was a statistically significant positive relationship

between financial resource management strategies and competitive advantage of manufacturing firms in Ruiru, Kenya (r (176) =0.721, p<0.05).

Table 1: Pearson Correlation between Financial Resource Management Strategies and Competitive Advantage

		Financial Resource Management_Strategy	Competitive Advantage
Financial Resource Management_Strategy	Pearson Correlation	1	.721**
	Sig. (2-tailed)		.000
	N	176	176
Competitive Advantage	Pearson Correlation	.721**	1
	Sig. (2-tailed)	.000	
	N	176	176

**. Correlation is significant at the 0.01 level (2-tailed).

Simple Linear Regression between Financial Resource Management Strategies and Competitive Advantage

The R Square value of 0.519 shown in Table 2 indicates that 51.9% of the variance in competitive advantage can be explained by financial resource management strategies. Financial resource management strategies only explain 51.9% of manufacturing SME's competitive advantage. While financial resource management strategy is a statistically significant predictor, it explains only half of the variation in competitive advantage.

Table 2: Model Summary between Financial Resource Management Strategies and Competitive Advantage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.721[a]	.519	.517	.22810

a. Predictors: (Constant), Financial_Resource_Management_Strategy

The ANOVA results for the model assessing the relationship between Financial Resource Management Strategies and Competitive Advantage is statistically significant (F =187.956, p < 0.05) as shown in Table 3. This indicates that there was a statistically significant relationship between Financial Resource Management Strategies and Competitive Advantage of medium-size manufacturers in Ruiru, Kenya.

Table 3: ANOVA between Financial Resource Management Strategies and Competitive Advantage

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.780	1	9.780	187.956	.000[b]
	Residual	9.053	174	.052		
	Total	18.833	175			

a. Dependent Variable: Competitive_Advantage

b. Predictors: (Constant), Financial_Resource_Management_Strategy

The regression coefficients presented in Table 4 shows that there was positive and statistically significant effect of Financial Resource Management strategies on Competitive advantage of manufacturing firms in Ruiru, Kenya (β=.440, t= 13.710, p < .05). The regression equation for predicting competitive advantage based on Financial Resource Management strategies is therefore given by:

Competitive advantage = 1.967 + 0.4400 ∗ Financial Resource Management strategies

This equation reveals that holding all other variables constant, for every unit increase in Financial Resource Management strategies, Competitive advantage of manufacturing firms in Ruiru, Kenya is expected to increase by 0.440 units. It underscores the significance of managing cashflows, controlling costs and adhering to best budgeting practices in the manufacturing sector.

Table 4: Regression Coefficients between Financial Resource Management Strategies and Competitive Advantage

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.967	.100		19.631	.000
	Financial_Resource_Management_Strategy	.440	.032	.721	13.710	.000

a. Dependent Variable: Competitive_Advantage

Human Resource Utilization Practices and Competitive Advantage

Pearson Correlation between Human Resource Utilization Strategies and Competitive Advantage

Correlational analysis was conducted to determine the strength and direction of the relationship between Human Resource Utilization Strategies and Competitive Advantage. The results presented in Table 5 indicate that there was a statistically significant positive relationship between human resource utilization strategies and competitive advantage of manufacturing firms in Ruiru, Kenya (r (176) =0.677, p<0.05).

Table 5: Pearson Correlation between Human Resource Utilization Strategies and Competitive Advantage

		Human_Resource Utilization_ Practices	Competitive Advantage
Human_Resource_ Utilization Practices	Pearson Correlation	1	.677**
	Sig. (2-tailed)		.000
	N	176	176
Competitive_Advantage	Pearson Correlation	.677**	1
	Sig. (2-tailed)	.000	
	N	176	176

**. Correlation is significant at the 0.01 level (2-tailed).

Simple Linear Regression between Human Resource Utilization Strategies and Competitive Advantage

The R Square value of 0.458 shown in Table 6 indicates that 45.8% of the variance in competitive advantage can be explained by human resource utilization strategies. Human resource utilization strategies only explain 45.8% of manufacturing SME's competitive advantage. While human resource utilization strategy is a statistically significant predictor, it explains only a moderate portion of the variation in competitive advantage.

Table 6: Simple Linear Regression between Human Resource Utilization Strategies and Competitive Advantage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.677[a]	.458	.455	.24220

a. Predictors: (Constant), Human_Resource_Utilization_Practices

The ANOVA results for the model assessing the relationship between Human Resource Management Strategies and Competitive Advantage is statistically significant ($F = 147.054$, $p < 0.05$) as shown in Table 7. This indicates that there was a statistically significant relationship between Human Resource Utilization Strategies and Competitive Advantage of medium-size manufacturers in Ruiru, Kenya.

Table 7: ANOVA between Human Resource Utilization Strategies and Competitive Advantage

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.626	1	8.626	147.054	.000[b]
	Residual	10.207	174	.059		
	Total	18.833	175			

a. Dependent Variable: Competitive_Advantage
b. Predictors: (Constant), Human_Resource_Utilization_Practices

The regression coefficients presented in Table 8 shows that there was positive and statistically significant effect of Human resource utilization strategies on Competitive advantage of manufacturing firms in Ruiru, Kenya (β=.600, t= 12.127, $p < .05$). The regression equation for predicting competitive advantage based on Human resource utilization strategies is therefore given by:

$$\textit{Competitive advantage} = 1.297 + 0.600 * \textit{Human resource utilization strategies}$$

This equation reveals that holding all other variables constant, for every unit increase in Human resource utilization strategies, Competitive advantage of manufacturing firms in Ruiru, Kenya is expected to increase by 0.600 units. It underscores the significance of enhancing skill development, actively engaging employees and institutionalizing robust performance management systems in the manufacturing sector.

Table 8: Regression Coefficients between Human Resource Utilization Strategies and Competitive Advantage

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.297	.168		7.725	.000
	Human_Resource_Utilization_Practices	.600	.049	.677	12.127	.000

a. Dependent Variable: Competitive_Advantage

Technological Adoption Strategies and Competitive Advantage

Pearson Correlation between Technological Adoption Strategies and Competitive Advantage

Correlational analysis was conducted to determine the strength and direction of the relationship between Technological Adoption Strategies and Competitive Advantage. The results presented in Table 9 indicate that there was a statistically significant positive relationship between technological adoption strategies and competitive advantage of manufacturing firms in Ruiru, Kenya ($r(176) = 0.584$, $p<0.05$).

Table 9: Pearson Correlation between Technological Adoption Strategies and Competitive Advantage

		Technological Adoption Strategies	Competitive Advantage
Technological Adoption_ Strategies	Pearson Correlation	1	.584**
	Sig. (2-tailed)		.000
	N	176	176
Competitive Advantage	Pearson Correlation	.584**	1
	Sig. (2-tailed)	.000	
	N	176	176

**. Correlation is significant at the 0.01 level (2-tailed).

Simple Linear Regression between Technological Adoption Strategies and Competitive Advantage

The R Square value of 0.341 shown in Table 10 indicates that 34.1% of the variance in competitive advantage can be explained by technological adoption strategies. Technological adoption strategies only explain 34.1% of manufacturing SME's competitive advantage. While Technological adoption strategy is a statistically significant predictor, it explains only a modest portion of the variation in competitive advantage.

Table 10: Model Summary between Technological Adoption Strategies and Competitive Advantage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.584[a]	.341	.337	.26714

a. Predictors: (Constant), Technological_Adoption_Strategies

The ANOVA results for the model assessing the relationship between Technological Adoption Strategies and Competitive Advantage is statistically significant (F =89.894, p < 0.05) as shown in Table 11. This indicates that there was a statistically significant relationship between Technological Adoption Strategies and Competitive Advantage of medium-size manufacturers in Ruiru, Kenya.

Table 11: ANOVA between Technological Adoption Strategies and Competitive Advantage

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.415	1	6.415	89.894	.000[b]
	Residual	12.418	174	.071		
	Total	18.833	175			

a. Dependent Variable: Competitive_Advantage
b. Predictors: (Constant), Technological_Adoption_Strategies

The regression coefficients presented in Table 12 shows that there was positive and statistically significant effect of Technological adoption strategies on Competitive advantage of manufacturing firms in Ruiru, Kenya (β=.427, t= 9.481, p < .05). The regression equation for predicting competitive advantage based on Technological adoption strategies is therefore given by:

$$Competitive\ advantage = 1.862 + 0.427 * Technological\ adoption\ strategies$$

This equation reveals that holding all other variables constant, for every unit increase in Technological adoption strategies, Competitive advantage of manufacturing firms in Ruiru, Kenya is expected to increase by 0.427 units. It underscores the significance of process automation, cybersecurity management and digital marketing in the manufacturing sector.

Table 12: Regression Coefficients between Technological Adoption Strategies and Competitive Advantage

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.862	.155		12.010	.000
	Technological_Adoption_Strategies	.427	.045	.584	9.481	.000

a. Dependent Variable: Competitive_Advantage

Conclusions

In conclusion, the financial resource management strategy is significantly and positively correlated with competitive advantage of medium-size manufacturers in Ruiru, Kenya. In addition, human resource utilization practices have has a positive correlation with the competitive advantage of manufacturing firms in Ruiru, Kenya. The study further underscored the importance of technological adoption strategies in affecting competitive advantage of medium-size manufacturers in Ruiru, Kenya. The study thus concludes that technological adoption, human resource utilization and financial resource utilization positively and significantly influence competitive advantage of medium-size manufacturers in Ruiru, Kenya.

Recommendations

First, medium-size manufacturers need to channel savings from efficiency measures directly into growth initiatives. In addition, the study recommends conducting regular workforce audits and aligning staff with production demand based on data driven scheduling techniques. Lastly, the study recommends scheduling regular hands-on training sessions during integration of new systems to foster smooth adoption. The manufactures should also allocate annual budgets for technology upgrades aligned with operational needs and innovative trends. Participation in industry forums and conducting periodic tech audits could identify and close performance gaps. The shortening of delivery times would need streamlining of logistics, maintaining lean inventory, and integrating real-time tracking tools to consistently meet client expectations.

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