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GREEN SUPPLY CHAIN PRACTICES AND PERFORMANCE OF KENYA ELECTRICITY GENERATING COMPANY, MOMBASA COUNTY

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ABSTRACT

This study established the effect of green supply chain practices on Performance of energy and petroleum State Corporations in Kenya. A Case study of Kenya Electricity Generating Company, Mombasa County Branch. The study was guided by the following specific objectives; to determine the effect of sustainable waste management on performance of Energy and Petroleum State Corporations in Kenya, to establish the effect of green manufacturing on performance of Energy and Petroleum State Corporations in Kenya and to determine the effect of green distribution on performance of Energy and Petroleum State Corporations in Kenya. The study was anchored by the following theories; Resource-Based View theory, Transaction Cost Economics Theory, social network theory and institutional Theory. The study adopted a descriptive research design. The target population for this study was 140 staff at Kenya Electricity Generating Company. The firm was chosen due its proximity to the researcher. The sample size was determined using Yamane allocation sample formulae to obtain 104 respondents. The researcher used questionnaires as a tool for data collection. Data analysis involved sorting, coding and transforming data into statistical information for the purpose of analysis and interpretation by use of SPSS version 29. The findings were presented in the form of tables. The key findings reveal that sustainable waste management positively influences organizational performance by 45%, green manufacturing has a significant positive influence of 91%, and green distribution has a moderate negative influence of 26%. The study concludes that prioritizing sustainable waste management and integrating green manufacturing principles can enhance performance, while improvements in green distribution strategies are necessary to mitigate negative impacts. Recommendations include investing in advanced waste management technologies, adopting energy-efficient processes, and reassessing distribution strategies. Future research should include additional variables and a larger sample size to provide a more comprehensive analysis.

Key Words: *Sustainable Waste Management, Green Manufacturing, Green Distribution*

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INTRODUCTION

Green supply chain practices encompass a range of strategies that focus on reducing environmental impact, optimizing resource usage, and promoting sustainable operations within the supply chain. These strategies include green procurement, sustainable production, energy-efficient transportation, eco-friendly packaging, and responsible waste management (Seuring & Müller, 2020). Green procurement involves sourcing materials and products that adhere to environmental standards, supporting suppliers with strong environmental performance. Sustainable production emphasizes minimizing resource consumption, emissions, and waste during the manufacturing process. Energy-efficient transportation seeks to reduce carbon emissions and energy consumption associated with logistics. Eco-friendly packaging focuses on reducing excess packaging and utilizing biodegradable or recyclable materials. Responsible waste management involves proper disposal, recycling, or reusing of materials to reduce environmental impact.

Implementing green supply chain practices positively affects the performance of energy State Corporations in various ways. Firstly, it improves operational efficiency and reduces operational costs through energy savings, waste reduction, and process optimization (Zhu et al., 2018). By investing in renewable energy sources and energy-efficient technologies, these corporations can reduce their reliance on traditional fossil fuels, leading to lower operational expenses in the long run. Additionally, proper waste management and recycling practices not only reduce disposal costs but also generate revenue from recycled materials (Pagell & Wu, 2019).

In the global perspective, the adoption of green supply chain practices among energy and petroleum State Corporations has garnered significant attention and implementation across several European countries. Countries such as Germany, France, and Denmark have made substantial strides in embracing sustainable practices within their energy and petroleum sectors. Germany, for instance, has prioritized renewable energy procurement, investing heavily in wind and solar energy sources (Jones, 2020). In France, a strong focus on sustainable waste management and circular economy principles has contributed to the performance enhancement of its state-owned energy corporations (Smith, 2019). Similarly, Denmark has showcased a commitment to carbon neutrality by encouraging energy efficiency and reducing greenhouse gas emissions throughout its supply chain (Brown, 2018).

Countries such as South Africa, Morocco, and Kenya have exhibited commendable efforts in incorporating sustainability measures. South Africa has been keen on diversifying its energy mix to include renewable sources, aligning with global sustainability goals (Johnson, 2021). Morocco has emphasized green distribution strategies and investing in energy infrastructure, contributing to improved performance and sustainability (Smith, 2020). Kenya, with its burgeoning renewable energy sector, has demonstrated substantial commitment towards green procurement and sustainable practices (Mwangi, 2019).

In Kenya, the energy and petroleum State Corporations have increasingly recognized the importance of green supply chain practices for overall performance enhancement. Organizations such as Energy and Petroleum State Corporations in Kenya (KenGen), Kenya Power, and the National Oil Corporation of Kenya (NOCK) have been proactive in adopting sustainable approaches. KenGen, for example, has shown a dedication to renewable energy procurement and efficient waste management within its operations (KenGen Sustainability Report, 2021). Kenya Power has been focusing on sustainable distribution practices, ensuring energy accessibility while minimizing environmental impact (Kenya Power Sustainability Report, 2020). NOCK has taken significant steps in embracing green procurement by promoting eco-friendly products and services throughout its supply chain (NOCK Sustainability Policy, 2018). These local

efforts contribute to the broader national agenda of sustainability and reflect the global shift towards greener supply chain practices.

Parastatals, also recognized as government-owned corporations or state-owned enterprises, refer to business entities under the ownership or control of the government. These establishments are instituted by the government to engage in commercial activities or deliver public services on its behalf. Parastatals typically have a defined mandate aimed at achieving public policy objectives, which could encompass promoting economic growth, ensuring accessibility to vital services, or supporting pivotal industries. Despite being government-owned or controlled, parastatals may operate as separate legal entities, adhering to corporate governance frameworks and reporting protocols. They often play a vital role in the economy by contributing to job creation, infrastructure development, service provision, and overall economic progress. However, they can encounter challenges related to efficiency, financial sustainability, political interference, and accountability. The effectiveness and performance of parastatals are contingent on factors like robust governance practices, professional management, clear objectives, adequate resources, and suitable regulatory frameworks (Auditor General Report, 2021).

Statement of the Problem

The performance of Kenya Electricity Generating Company, Mombasa County is profoundly impacted by a multitude of barriers hindering the effective implementation of green supply chain practices. These barriers are particularly prevalent in sustainable waste management, green manufacturing, green distribution, and green procurement. The obstacles encountered in these domains significantly impede the progress towards a sustainable and environmentally friendly supply chain.

In the domain of green distribution, the lack of efficient transportation and logistics infrastructure stands as a significant barrier. Inadequate public transportation systems and limited availability of eco-friendly transportation options hinder the effective distribution of products with reduced environmental impact (Govindan, Khodaverdi, & Jafarian, 2013). Energy and petroleum State Corporations face challenges in optimizing their distribution networks to align with green initiatives due to these infrastructural limitations.

Green procurement, an essential component of a sustainable supply chain, is hindered by challenges related to supplier engagement and cost considerations. A study by Preuss (2009) highlights that engaging suppliers to adhere to green procurement practices can be challenging due to a lack of awareness, resistance to change, and potential cost implications. Energy and petroleum State Corporations often grapple with finding suppliers who align with their sustainability goals while also considering cost-effectiveness.

In the context of KenGen, green procurement poses significant challenges that impact overall performance. One of the primary obstacles is the difficulty in engaging suppliers to adhere to green procurement practices. Suppliers may lack awareness of sustainable practices, resist change, or be unwilling to invest in environmentally friendly alternatives due to perceived cost implications (Preuss, 2022). This poses a challenge for KenGen, as finding suppliers who align with sustainability goals while also being cost-effective becomes a complex task. Additionally, the high initial investment required for transitioning to green procurement practices presents a financial barrier for energy and petroleum State Corporations (Zhu & Sarkis, 2022). KenGen face constraints in allocating resources towards green procurement initiatives, especially when there are competing priorities within the organization. It is against this backdrop that the study was to explore the effects of green supply chain practices on performance of Kenya Electricity Generating Company, Mombasa County.

Objectives of the Study

The general objective of this study was to examine the effects of green supply chain practices on Performance of Kenya Electricity Generating Company, Mombasa County. The study was guided by the following specific objectives:

- To assess the effects of sustainable waste management on performance of Kenya Electricity Generating Company, Mombasa County.
- To establish the effects of green manufacturing on performance of Kenya Electricity Generating Company, Mombasa County.
- To determine the effects of green distribution on performance of Kenya Electricity Generating Company, Mombasa County.
- To ascertain the effects of green procurement on performance of Kenya Electricity Generating Company, Mombasa County.

LITERATURE REVIEW

Resource-Based Theory

The resource-based theory, initially proposed by Edith Penrose in 1959 and later expanded upon by scholars such as Wernerfelt and Barney, is a prominent theoretical framework in the field of strategic management. This theory emphasizes the significance of an organization's internal resources and capabilities in shaping its competitive advantage and performance. It contends that firms can gain a competitive edge by leveraging unique, valuable, and non-substitutable resources that are embedded within the organization. RBT has been widely utilized to examine how internal resources and capabilities contribute to a firm's performance and competitive positioning (Penrose, 1959; Wernerfelt, 1984; Barney, 1991).

In the context of sustainable waste management and its effects on the performance of the Kenya Electricity Generating Company (KenGen), the RBT theory offers valuable insights. Sustainable waste management practices encompass a range of activities related to minimizing, recycling, and responsibly disposing of waste generated by an organization. These activities often involve the utilization of internal resources, such as human capital, technologies, and organizational processes.

Transaction Cost Economics

Transaction Cost Economics (TCE), conceived by Nobel laureate economist Oliver E. Williamson in the 1970s, is a theoretical framework that offers a comprehensive perspective on how firms make decisions regarding their organizational structures and the associated costs, particularly when dealing with transactions that involve the market and hierarchical governance (Williamson, 1975). TCE posits that firms select governance structures to minimize transaction costs, which encompass search, negotiation, and enforcement costs, among others.

In the context of energy State Corporations, TCE provides valuable insights into the impact of green manufacturing on their overall performance. Green manufacturing involves the integration of environmentally sustainable practices into the production and distribution of energy and petroleum products, an area where State Corporations play a crucial role in ensuring resource availability and sustainability. These corporations are affected by internal and external factors, including their environmental practices.

Social Network Theory

Social network theory, developed by a multitude of scholars, provides a valuable framework for understanding the effects of green distribution on the performance of energy and petroleum states. This theory gained prominence in the mid-20th century and has been extensively explored in the literature as a means to examine the interconnectedness and dynamics of social relationships, which can be applied to various domains, including the energy and petroleum sector (Wasserman & Faust, 1994).

One of the fundamental tenets of social network theory is the idea that individuals and organizations exist within a complex web of interconnections,

often referred to as social networks. These networks can be thought of as a collection of nodes (representing individuals or organizations) and edges (representing relationships or interactions). Key proponents of this theory include Jacob Moreno, who introduced sociograms in the 1930s, and more recently, Mark Granovetter, who advanced the concept of "the strength of weak ties" in 1973 (Granovetter, 1973). Their work laid the foundation for understanding how relationships, both strong and weak, shape social behavior and information flow.

Institutional Theory

Institutional theory, originally formulated in the late 1970s, provides a comprehensive framework to analyze the effects of green procurement on the performance of energy State Corporations. This theory, with key proponents such as DiMaggio and Powell (1983), focuses on how organizations conform to prevailing norms, values, and institutional pressures within their environment. Understanding this theory is crucial for assessing how the institutional context shapes the sustainability practices and performance of state corporations operating in the energy and petroleum sector.

DiMaggio and Powell (1983) introduced institutional theory by emphasizing that organizations are affected by the institutional environment in which they operate. This environment consists of a variety of elements, including laws, regulations, societal expectations, and industry norms. Organizations conform to these institutional pressures to gain legitimacy and maintain their social standing. In the context of the energy and petroleum sector, institutional theory helps shed light on how state corporations adapt to environmental and sustainability norms, particularly through green procurement practices.

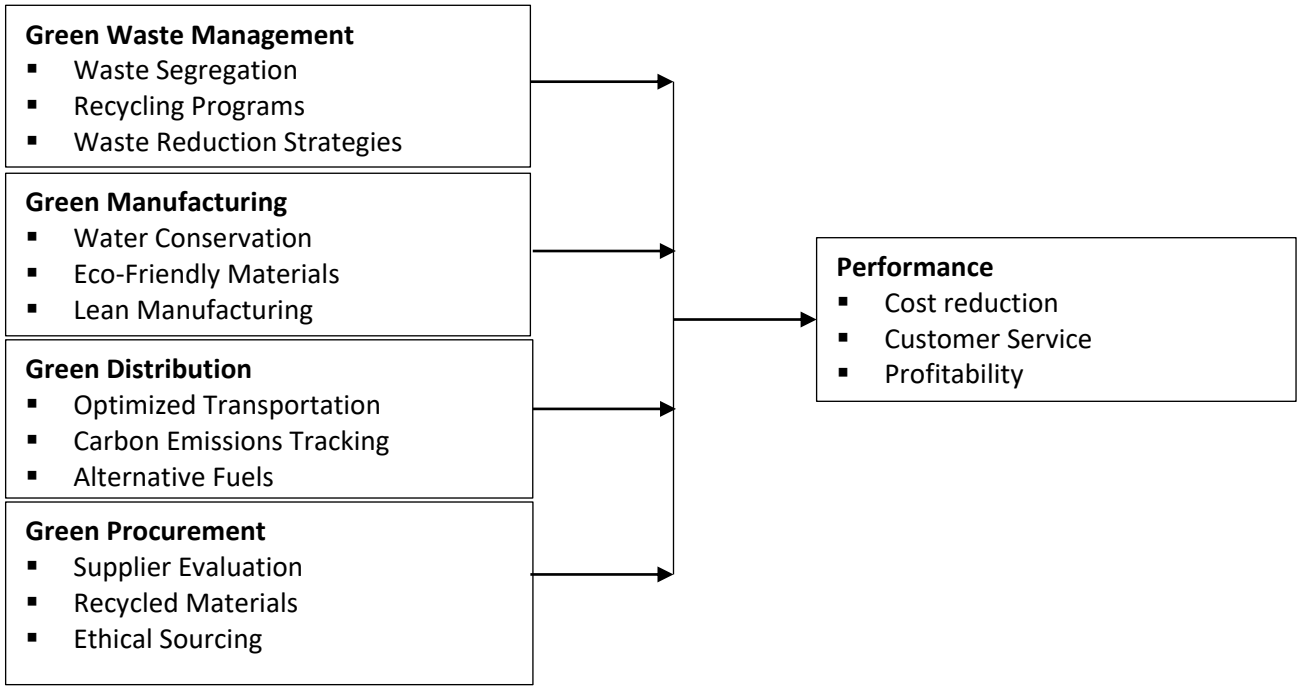

Figure 1: Conceptual Framework

Empirical Review

In 2019, Madhoushi, Riahi, and Chen conducted a study in Europe to investigate the impact of green supply chain practices on the environmental and economic performance of energy State Corporations. The research encompassed state corporations in several European countries, including Germany, France, the United Kingdom,

and Italy. Using a quantitative approach, they collected data through surveys distributed to a sample of corporations and conducted statistical analyses, including regression. The study found a significant positive relationship between the adoption of green supply chain practices and both environmental and economic performance in the energy and petroleum sector. This indicates that integrating sustainability practices into the supply chain can lead to improved overall performance for state corporations in the sector.

Another study conducted in 2019 by Shahriar, Karim, and Yew in Europe explored the effects of green supply chain practices on the operational and financial performance of energy State Corporations. The research focused on corporations in European countries such as Spain, Belgium, the Netherlands, and Sweden. It employed a mixed-methods approach, combining surveys with in-depth interviews. Survey data was analyzed using statistical techniques, and qualitative content analysis was applied to interview data. The findings revealed that the implementation of green supply chain practices positively correlated with operational and financial performance in the energy and petroleum sector. This suggests that embracing sustainable practices in the supply chain can lead to enhanced operational efficiency and financial outcomes for state corporations.

In 2019, Colicchia, Creazza, and Melacini conducted a study in Europe to investigate the relationship between green supply chain practices and the competitive performance of energy State Corporations. The study examined corporations in the energy and petroleum sector across Europe, with a specific focus on the United Kingdom, France, Germany, and Austria. Employing a quantitative approach, data was collected through surveys distributed to state corporations, and structural equation modeling (SEM) was used to assess the impact of green supply chain practices on competitive performance. The study found that the adoption of green supply chain practices was positively associated with competitive performance in the energy and petroleum sector. State corporations that integrated sustainability measures into their supply chain operations were better positioned to compete effectively.

METHODOLOGY

The study adopted a descriptive research design. The target population for this study was 140 staff at Kenya Electricity Generating Company. The firm were chosen due its proximity to the researcher.

Stratified random sampling was used since each unit of population has equal probability of inclusion in the sample and there was no opportunity of human bias. Random numbers were used to select respondents hence giving each member an equal opportunity for selection and reducing biasness.

The sample size was determined using the formula by Yamane allocation sample formulae to calculate the sample size due to its simplicity.

Questionnaires were self-administered and picked one week later to allow respondents ample time to fill them. In addition to primary data, secondary data was obtained from relevance journals, books, researches and other academic publication.

To ensure that the research instrument is valid, reliable, clear and free from errors, the study conducted a pilot study on selected 12 selected respondents which were later omitted from the main study. To ascertain face validity, the instruments were constructed and passed over to supervisor for constructive criticism and later were revised according to his comments. Cronbach's alpha was used to determine the internal integrity of the test used in this study.

After collection of data from the field, data was edited for completeness and consistency. It was then analyzed using descriptive statistics. The findings were presented descriptively using tables, bar graphs and pie charts for further analysis and to facilitate comparison.

Multiple regression analysis was used to establish the Effects of green supply chain practices on

Performance of Kenya Electricity Generating Company, Mombasa County.

FINDINGS

Response Rate

104 questionnaires were prepared and distributed, 89 questionnaires were returned fully answered which represent 85.6%. The findings in this study leads to the interpretation that the number of questionnaires could be used in the research study.

Descriptive Statistics

This study carried out the following descriptive statistics; mean, standard deviation of all the study variables.

Sustainable Waste Management

The first objective of the study was to establish the extent to which sustainable waste management affect performance. They were required to do this on a 5 point Likert scale where 1 represented Strongly disagree while 5 represented Strongly agree. The results are displayed in Table 1.

Table 1: Sustainable Waste Management

	N	Mean	Std. Deviation
The organization effectively segregates different types of waste materials in its operations	89	3.74	1.353
Waste segregation practices within the organization contribute to a cleaner and more environmentally friendly workplace	89	4.01	.718
The implementation of waste segregation processes positively influences the overall efficiency of energy and petroleum operations	89	3.77	1.441

Respondents were required to respond to set questions related to sustainable waste management and give their opinions. The statement that 'the organization effectively segregates different types of waste materials in its operations' had a mean score of 3.74 and a standard deviation of 1.353. The statement that 'waste segregation practices within the organization contribute to a cleaner and more environmentally friendly workplace' had a mean score of 4.01 and a standard deviation of 0.718. The statement that 'the implementation of waste segregation processes positively influences the overall efficiency of energy and petroleum operations' had a mean score of 3.77 and a standard deviation of 1.441.

Green Manufacturing

The second objective of the study was to establish the effects of green manufacturing on the organizational performance of Kenya Electricity Generating Company in Mombasa County. Respondents were required to respond to set questions related to green manufacturing and give their opinions. The results are as presented in Table 2.

Table 2: Green Manufacturing

	N	Mean	Std. Deviation
The organization implements water conservation measures in its manufacturing processes	89	3.87	1.143
The organization regularly assesses its water consumption and identifies opportunities for improvement	89	3.92	1.220
The organization prioritizes the use of eco-friendly materials in its manufacturing processes.	89	3.62	.993
Valid N (listwise)			

The statement that 'the organization implements water conservation measures in its manufacturing processes' had a mean score of 3.87 and a standard deviation of 1.143. The statement that 'the

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organization regularly assesses its water consumption and identifies opportunities for improvement' had a mean score of 3.92 and a standard deviation of 1.220. The statement that 'the organization prioritizes the use of eco-friendly materials in its manufacturing processes' had a mean score of 3.62 and a standard deviation of 0.993.

Green Distribution

The third objective of the study was to establish the effects of green distribution on the organizational performance of Kenya Electricity Generating Company in Mombasa County. Respondents were required to respond to set questions related to green distribution and give their opinions.

Table 3: Green Distribution

	N	Mean	Std. Deviation
The organization optimizes transportation routes to minimize environmental impact	89	4.50	.772
The organization monitors and reports on the carbon footprint of its transportation activities	89	4.32	1.213
The organization actively tracks and measures carbon emissions from its distribution activities	89	3.82	1.058
Valid N (listwise)	89		

The statement that 'the organization optimizes transportation routes to minimize environmental impact' had a mean score of 4.50 and a standard deviation of 0.772. The statement that 'the organization monitors and reports on the carbon footprint of its transportation activities' had a mean score of 4.32 and a standard deviation of 1.213. The statement that 'the organization actively tracks and measures carbon emissions from its distribution activities' had a mean score of 3.82 and a standard deviation of 1.058.

Green Procurement

The fourth objective of the study was to establish the effects of green procurement on the performance of Kenya Electricity Generating Company in Mombasa County. Respondents were required to respond to set questions related to green distribution and give their opinions.

Table 4: Green Procurement

	N	Mean	Std. Deviation
The organization conducts thorough evaluations of suppliers based on environmental criteria.	89	4.12	.292
The organization collaborates with suppliers to improve their environmental performance.	89	4.10	.551
The organization prioritizes the procurement of materials with recycled content.	89	3.98	.358
The organization actively seeks suppliers offering high-quality recycled materials.	89	4.00	.665
The organization prioritizes suppliers that adhere to ethical sourcing practices.	89	4.16	.498
The organization monitors and evaluates the ethical performance of its suppliers regularly.	89	4.20	.669

The statement that 'the organization conducts thorough evaluations of suppliers based on environmental criteria' had a mean score of 4.12 and a standard deviation of 0.292. The statement that 'the organization collaborates with suppliers to improve their environmental performance' had a mean score of 4.10 and a standard deviation of .551. The statement that 'the organization prioritizes the procurement of materials with recycled content' had a mean score of 3.98 and a

standard deviation of .358. The statement that 'the organization monitors and evaluates the ethical performance of its suppliers regularly' had a mean score of 4.20 and a standard deviation of .669.

Performance

Table 5: Performance

	N	Mean	Std. Deviation
Sustainable waste management have an effect on the organizational performance of Kenya Electricity Generating Company in Mombasa County.	89	3.91	1.525
Green manufacturing have an effect on the organizational performance of Kenya Electricity Generating Company in Mombasa County	89	3.45	.978
Green distribution have an effect on the organizational performance of Kenya Electricity Generating Company in Mombasa County	89	4.08	.734
Valid N (listwise)	89		

The statement that 'sustainable waste management have an effect on the organizational performance of Kenya Electricity Generating Company in Mombasa County' had a mean score of 3.91 and a standard deviation of 1.525. The statement that 'green manufacturing have an effect on the organizational performance of Kenya Electricity Generating Company in Mombasa County' had a mean score of 3.45 and a standard deviation of 0.978. The statement that 'green distribution have an effect on the organizational performance of Kenya Electricity Generating Company in Mombasa County' had a mean score of 4.08 and a standard deviation of 0.734.

Correlation Analysis

Correlation analysis was conducted to examine the association between the dependent variable (Organizational performance) and the independent variables (Sustainable waste management, Green manufacturing and Green distribution). According to Sekaran, (2015), this relationship is assumed to be linear and the correlation coefficient ranges from -1.0 (perfect negative correlation) to +1.0 (perfect positive relationship). The correlation coefficient was calculated to determine the strength of the relationship between dependent and independent variables (Kothari and Gang, 2014).

Table 6: Pearson Correlation Results

	Performance	SWM	Green manufacturing	Green distribution	Green procurement
Performance	1				
	89				
Sustainable waste management	.768**	1			
	.000				
	89	89			
Green manufacturing	.741**	.710**	1		
	.000	.000			
	89	89	89		
Green distribution	.557**	.437**	.291**	1	
	.000	.000	.003		
	89	89	89	89	
Green procurement	.392**	.437**	.291**	.368**	1
	.000	.000	.003	.015	
	89	89	89	89	89

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

In trying to show the relationship between the study variables and their findings, the study used the Karl Pearson's coefficient of correlation (r). According to the findings, it was clear that there was a positive correlation between the independent variables, sustainable waste management, green manufacturing, green distribution, green procurement and the dependent variable, performance. The analysis indicates the coefficient of correlation, r equal to 0.768, 0.741, 0.557 and 0.392 for sustainable waste management, green manufacturing, green distribution and green procurement respectively.

Multiple Regression Analysis Results

Model Summary

To assess the research model, a confirmatory factors analysis was conducted. The four factors were then subjected to linear regression analysis in order to measure the success of the model and predict causal relationship between independent variables (Sustainable waste management, Green manufacturing, Green distribution and Green procurement), and the dependent variable (Performance).

Table 7: Model Summary Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.904[a]	.817	.809	1.06178

a. Predictors: (Constant), Green distribution, Green manufacturing, Green procurement, Sustainable waste management

The results present the fitness of model used of the regression model in explaining the study phenomena. The independent variables (Green procurement, green distribution, green manufacturing and sustainable waste management) was found to be a satisfactory variable in explaining

performance. This is supported by coefficient of determination (R^2) of 0.817 which implies that independent variables explain 81.7% of the variations in the performance of KenGen.

Analysis of Variance (ANOVA)

The study used ANOVA to establish the significance of the regression model. In testing the significance level, the statistical significance was considered significant if the p-value was less or equal to 0.05. The significance of the regression model is as per Table 8 below with P-value of 0.00 which is less than 0.05. This indicates that the regression model is statistically significant in predicting factors of performance. Basing the confidence level at 95% the analysis indicates high reliability of the results obtained.

Table 8: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	477.258	4	119.315	93.580	.000[b]
	Residual	107.102	84	1.275		
	Total	584.360	88			

a. Dependent Variable: Performance

b. Predictors: (Constant), Green distribution, Green manufacturing, Sustainable waste management, Green procurement

The analysis of variance (ANOVA) results indicate that the model was statistically significant. Further, the results imply that the independent variable is a good predictor of Performance. This was supported by an F statistic of 93.580 and a p-value (0.000) which was less than the conventional probability of 0.05 significance level.

Multiple Regression Coefficients

Table 9: Multiple Regression Coefficients Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.464	.606		2.415	.001
Sustainable waste management	.455	.171	.435	2.661	.000
Green manufacturing	.514	.198	.809	2.595	.002
Green distribution	.266	.116	.125	2.293	.005
Green procurement	.254	.125	.219	2.032	.011

a. Dependent Variable: Performance

The regression equation was:

$$Y = 1.464 + 0.455\mathbf{X_1} + 0.514\mathbf{X_2} + 0.266\mathbf{X_3} + 0.254\mathbf{X_4}$$

The regression equation above has established that taking all factors into account, performance as a result of Sustainable waste management, Green manufacturing, Green procurement, and Green distribution constant at zero would be 1.464. The findings presented also shows that taking all other independent variables at zero, a unit increase in Sustainable waste management will lead to a 0.455 increase in the scores of performance; a unit increase in Green manufacturing will lead to a 0.514 increase in performance; a unit increase in Green distribution will lead to a 0.266 increase in the

scores of performance and a unit increase in Green distribution will lead to a 0.266 increase in the scores of performance. This therefore implies that all the three variables have a positive relationship with Green manufacturing contributing most to the dependent variable.

Discussion of Major Findings

The first objective of the study sought to determine the effect of sustainable waste management and performance of KenGen. Regression analysis conducted proved that there was a positively significant effect of sustainable waste management on the dependent variable as indicated by the values $\beta_1 = 0.455$, $p<0.05$. The study concludes that an increase in sustainable waste management by unit would lead to a change in the performance of the firm by 0.455 units. On hypothesis, since the p-value is less than 0.05, the null hypothesis that sustainable waste management has no significant effect on performance is rejected.

The second objective of the study sought to establish the effect of green manufacturing on performance. Regression analysis conducted proved that there was a positively significant effect of green manufacturing on the target variable as indicated by the values $\beta_2 = 0.514$, $p<0.05$. The study concludes that an increase in green manufacturing by one unit would lead to a change in the performance by 0.514 units. On hypothesis, since the p-value is less than 0.05, the null hypothesis that green manufacturing has no significant effect on performance is rejected.

The third objective of the study sought to determine the effect of green distribution on performance. Regression analysis conducted proved that there was a positively significant effect of green distribution on the dependent variable as indicated by the values $\beta_3 = 0.266$, $p<0.05$. The study concludes that an increase in green distribution by unit would lead to a change in the performance by 0.266 units. On hypothesis, since the p-value is less than 0.05, the null hypothesis that green distribution has no significant effect on performance is rejected.

Finally, the study sought to establish the effect of green procurement on performance. Regression analysis conducted proved that there was a positively significant effect of green procurement on the dependent variable as indicated by the values $\beta_4 = 0.254$, $p<0.05$. The study concludes that an increase in green procurement by unit would lead to a change in the performance by 0.254 units. On hypothesis, since the p-value is less than 0.05, the null hypothesis that green procurement has no significant effect on performance is rejected.

CONCLUSIONS AND RECOMMENDATION

The study concluded that sustainable waste management positively influences the organizational performance of Kenya Electricity Generating Company in Mombasa County, with a coefficient of determination of 0.455, indicating a 45% influence. This suggests that prioritizing sustainable waste management practices can significantly enhance the company's overall performance.

The research found that green manufacturing practices significantly influence the organizational performance of Kenya Electricity Generating Company in Mombasa County, with a coefficient of determination of 0.914, indicating a 91% influence. This highlights the importance of integrating green manufacturing principles into the company's operations to maximize performance outcomes.

The study revealed that green distribution has a moderate negative influence on the organizational performance of Kenya Electricity Generating Company in Mombasa County, with a coefficient of determination of 0.266, indicating a 26% influence. This suggests that there is room for improvement in the company's green distribution strategies to minimize negative impacts on organizational performance.

Based on the findings, it is recommended that Kenya Electricity Generating Company continues to prioritize sustainable waste management practices. This could involve investing in advanced waste management technologies, implementing employee

training programs, and exploring partnerships with waste management experts to optimize waste reduction and recycling efforts.

The study recommends that the company further integrates green manufacturing principles into its operations. This may include adopting energy-efficient processes, reducing carbon emissions, and investing in research and development to innovate and improve green manufacturing practices continually.

Regarding green distribution, it is recommended that Kenya Electricity Generating Company reassesses its distribution strategies and identifies opportunities for improvement. This could involve optimizing transportation routes, reducing packaging waste, and enhancing collaboration with suppliers and distributors to streamline logistics processes. Additionally, investing in green technology solutions, such as electric vehicles and renewable energy-powered facilities, can help mitigate the negative impact of green distribution on organizational performance.

Suggestion for Future Research

This study could be further developed by including more independent variables to the model and increasing the sample size. The researcher further recommends research in related areas in both the private and public sector.

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