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# EFFECT OF GREEN SUPPLY CHAIN MANAGEMENT PRACTICES ON THE PERFORMANCE OF SOLAR ENERGY COMPANIES IN KENYA

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## ABSTRACT

The study sought to in-depth analyse and describe the GSCM practices and their effect on the operational performance of solar energy companies' in1Kenya. The study employed a descriptive research design. The study population comprised of fifty-one (51) solar energy firms registered by the Energy and Petroleum Regulatory Authority of Kenya as of 30th December 2019. The study adopted a stratified sampling technique to identify 64 respondents from four departments relating to supply chain management. Both primary data and secondary sources weere used to avail data for the1study. The data for analysis, primary in nature was obtained by employing unstructured questionnaires to guide the1respondents. Secondary data mainly come from journals and1newspapers, textbooks and reports by relevant1institutions. Quantitative data was coded and entered into Statistical Packages for Social Scientists (SPSS v21) and broken down utilizing distinctive measurements. Qualitative data was analysed based on themes. The findings were in tables, charts and graphs. The R value as reported by the predictor variables returned a value of .834 implying that the association between the dependent variable and the predictor factors was positive. Correlation value obtained from the results stood at of 0.695means that 69.5% of the changes in performance of solar firms in Kenya could be attributed to green procurement, green marketing, green distribution, and reverse logistics). Thus, the model used to fit the study variables was a perfect fit. Regression results showed that there was a significant relation between the independent and dependent variables. at ($\beta$=0.715), p=0.000 <0.05). Consequently, the project concluded that Performance of solar energy companies can be improved by; green procurement, green marketing, green distribution, reverse logistics. The study recommended that companies to adopt green supply chain management practices matrix to boost their performance.

**Key Words:** *Green Procurement, Green Marketing, Performance*

## INTRODUCTION

At the dawn of last decade, in 2010, Renewable energy sources like wind and solar were specks on the future of the universal energy grid contributing for just 4% of worldwide generation potential and a small percentage of cumulative electricity generated (Beck & Martinot, 2016). Adoption of green supply best practices management in the solar energy sector is an approach to hasten and develop procedures as well as produce with a key focus on requirements of environmental regulation. As consumers are adamant on production of goods and service delivery that maintain sustainability, the management is required to settle on a choice that helps the joining coordination of environmental practices all through the supply chain (Waters & Rinsler, 2014).

Leading manufacturers in developed countries generally have high environmental awareness and implement proactive environmental management practices such as green supply chain management (Oberlin, 2011). Research was carried out on small and medium-sized Japanese manufacturers, leading Chinese manufacturers and traditional Chinese manufacturers to determine their level of adoption of GSCM practices (Kuriyama, 2017). Statistical results show that leading Chinese manufacturers have the highest awareness of both domestic and international environmental regulations/policies, and implement all GSCM practices at the highest level. Leading Chinese manufacturers and Japanese manufacturers are aware of international environmental regulations/policies, but such awareness only motivates them to implement eco-design practices (Golinska, 2015). Traditional Chinese manufacturers have limited awareness of international environmental regulations/policies, but such awareness brings all types of GSCM practice.

In Nigeria, it is reported that Nigerians burn an average of 40 million liters of petrol/diesel per day for the private generation of electricity (Mohammed *et al.*, 2014). Keeping the efficient supply of energy in the hands of licensed providers appears to be a long way away, so is seeking alternative clean power (such as from wind, solar and waste) (Verbruggen & Lauber, 2012). The Nigeria Energy Commission whose mandate includes to guarantee adequate, sustainable and optimal supply of energy at appropriate cost and in an environmentally responsible manner to the various sectors of the economy, by utilizing all viable energy resources in an optimal mix – appears incapable of championing initiatives in alternative clean energy (Emodi & Boo, 2015).

Kenya has made tremendous targeted investments in both private and public sectors. As such, major milestones have been attained largely in the areas of renewable energy resources, agriculture, water harvesting, environmental legislation, and sound waste management through recycling efforts and waste water treatment among others. There has been a growing transformation in the generation of green energy in Kenya (Ondraczek, 2014). Among some of the green energy programs include; production of geothermal power, harnessing solar energy, production of energy from biogas among others. The government through relevant ministries and programs has made deliberate efforts to invest alongside other partners in geothermal energy production that are being led by the Geothermal Development Company. This multi-stakeholder programs can produce sufficient energy for domestic and industrial and might

even be enough to export to neighbouring countries if only they are fully exploited (Siapei, 2015).

A lot of value is being placed on investment in wind energy. A good example is the Turkana Wind Farm established in March 2012 has grown to be the largest wind energy plant in Africa. The plant has 365 wind turbines with a capacity of 300 MW, these turbines are set up near Lake Turkana (Olsen & Westergaard-Kabelmann,2018). The quantity of wind energy production is a factor in the speed of the week (Hansen & UNEP, 2016). There has been a similar milestone achieved with the generation of solar energy in Kenya. Solar energy penetration into domestic use in the country has been very successful.

Organizations have a number of reasons for implementing these green supply chain policies, from reactive regulatory reasons, to proactive strategic and competitive advantage reasons (Muma *et al.,* 2014). Organizations that purchase inputs from a specific supplier also acquire waste from each supplier up the supply chain. These distinctions are essential because agencies that adopt GSCM practices evaluate the environmental impacts of their first-tier suppliers (Handfield *et al.,* 2008). The pressure and drive accompanying globalization have prompted enterprises to improve their environmental performance (Zhu & Sarkis, 2016). Consequently, corporations have shown growing concern for the environment over the past ten years (Sheu *et al.*, 2015). The adoption of GSCM practices and investment in cleaner technologies by Solar energies may not only enhance the environmental sustainability but also increase the firms' profitability in long-run and create competitive edge.The background above is a clear indication that green supply chain best practices in management is a contributing factor to organizational performance of firms and specifically the Kenyan solar market.

**Statement of the Problem**

Kenya is a signatory to the 2013 Paris Agreement where it committed itself to reduce its emissions by 30% by 2030 in its nationally determined contribution (UNEP, 2018). Sadly, in 2018, Kenya was ranked among the top countries with high carbon gap with unclear national actions put in place to achieve the Cancun pledges (Olhoff & Christensen, 2018). The need to boost overall business performance has resulted in the need for businesses to pay attention to the reduction of pollution and its impact on the environment during the whole business cycle. Research for Africa, (2018) reveals, that 67% of the market share of solar firms in Kenya posted good returns within their three years of inception. This could be attributed to the firm's orientation of green marketing (Motari, 2017), posits that on the contrary 10% to 30% of solar energy firms registered in Kenya by 2016, closed down their operation.

There is a clear distinction between solar energy companies that thrive and those that fail. Apart from project management it is important to investigate other factors that create this difference (Sofie, 2018). However, this has not been the case in the Kenyan solar energy sector as some firms are yet to fully embrace green supply chain management best practices and those that have adopted these strategies they are still not fully utilized (Ministry of Energy and Petroleum, 2016).

The sluggishness witnessed in the solar energy sector to adopt green supply chain management practices only leads to increased emission of greenhouse gases which causes global warming and threatens global climate (Akanwa & Joe-Ikechebelu, 2019). Adoption of green supply chain management practice may require companies to go beyond mare corporate responsibility on environmental conservation as it is likely to affect the company's profitability in today's competitive markets (Zalengera *et al*., 2014). The solar energy companies in Kenya have made little efforts to take advantage of opportunities that come along with the adoption of GSCM. This can majorly be attributed to lack of awareness of the impact of GSCM (Karanja & Gasparatos, 2019)

Green supply chain best practices in management are a field that has received wide recognition in the Kenyan academic sphere. However, available literature regardless points to deficiency in conclusively of green supply with regard to renewable power and in extension solar firms. Vashta (2012), Mwaura (2016), Momanyi (2013) and Gatari and were (2014) limited its cope to the beverage industries seems to be over investigation on beverages and food industries green supply chain studies. In retrospect, firm variables under study were firm efficiency and competitiveness.

Aleri and Monari (2018) investigated the impact of green logistics management on the success of Kenyan licensed automotive companies while Kirunga and Kihara (2018). Detailed the impact of green practices best practices on chemical manufacturing firms in Kenya. The study variable was organizational performance. Thus, it is imperative for this study to bridge the gaps of conclusively in green supply chain management in renewable sources of energy in Kenya. With this knowledge gap, this study, therefore, intended to examine the effect of green supply chain management on the performance of the Solar energy industry in Kenya.

**Objectives of the Study**

i. To determine the effect of green procurement on the performance of Solar energy companies in Kenya
ii. To examine the effect of green marketing on the performance of Solar energy companies in Kenya

## LITERATURE REVIEW

### Theoretical Review

### Resource-based Theory

According to resource-based view hypothesis the distinguishing proof and ownership of inside key assets add to a company's capacity to make and keep up with an upper hand and improve output (Barney 1991; Hart 1995; Crook et al., 2008). An asset is viewed as key if it meets certain criteria; important, non-substitutable, uncommon or explicit, and matchless to add to improve the exhibition of the firm (Barney 1991; Crook et al., 2008). Value alludes to the degree to which the assets are lined up with the outer condition to misuse openings and diminish dangers. Substitutability is the degree to which contenders can make identical assets. Asset rarity

translates to the asset's perceived scarcity in the industry. Incomparability is the degree to which rivals can't acquire or duplicate the assets, or can just do as such at a huge cost impediment (Hoskisson et al., 1999). As per the resource-based view, companies endeavour to distinguish key assets that will probably make the raise its competitiveness in the market (Sirmon et al., 2007).

The RBV worldview has been utilized broadly by SCM scholars (Vachon & Klassen 2006; Chen et al., 2009). The theory is appropriate for research on the effect of green inventory management on the company's output since it explains how organizations utilize vital assets to improve a firm's output. Businesses are at an intersection today, where coordination between corporate activities and the environment is no longer seen as a spatial relation, yet as being inseparably interconnected (Hart and Dowell 2010). RBV, with regards to ecological obligation, proposes that organizations perceive and apply vital assets and abilities to make one of a kind and hard to impersonate rehearses that at the same time diminish the effect of the company's procedure on the common habitat and make an incentive for the company (Hart 1995; Aragon-Correa and Sharma 2003; Hart and Dowell 2010).

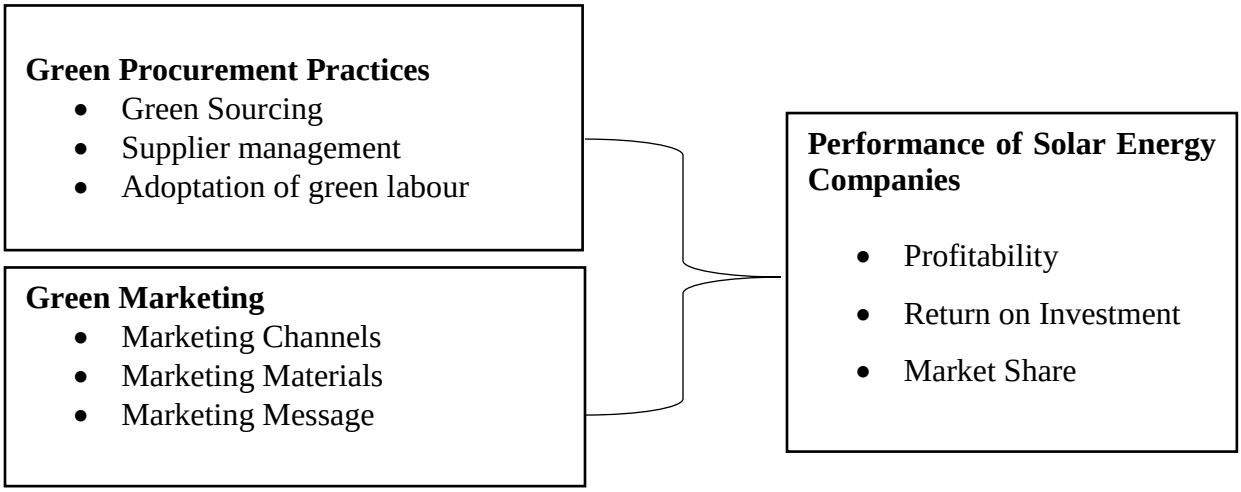
**Supply Chain Operations Reference Model Theory (SCOR)**

SCOR was created by the Supply Chain Council (SCC) to act as the cross-industry regulator for supply chain execution. The model can be used to define all sort of supply chain (Complex or simple supply chain) by making use of a common set of definitions and enabling a common understanding. The model makes it easy for companies to effectively determine and compare supply chain performance and those of the related operation within or against other companies.

This theory can show that all firms exist to make a profit and therefore a firm that embraces sustainable supply chain is better placed over its competition. Therefore, if solar energy companies can effectively run the sustainability program, they can enhance the performance of the firm in the industry making it profitable (Wang, 2012). Previous research by scholars in this field, for instance, Sannes (2008) was able to bring out the cost of doing business was affected by how well the firm was able to give to the society and what it was able to take as its raw materials.

The more sustainable practices it embraced the more positive synergy it attracts thus good performance which eventually brings profitability (Muma *et al*, 2014). It is likewise examined why Lean ought to be of such extraordinary enthusiasm to store network and coordination experts on how they can give their organization an upper hand by supporting procedures dependent on at least one of the accompanying ideas of separation, cost authority and reaction (Nyaoga et al., 2011).

**Conceptual Framework**




**Green Procurement Practices**

In green procurement, the department responsible for purchasing on behalf of the company does not only buy items, instead, but they also focus on values through comprehensive consideration of the total cost of the process in terms of eliminating waste, and which focuses on the business of waste disposal activities (Lyons & Farrington, 2016). It is at the process of purchasing that the elimination of waste starts therefore recycling and reusing waste by the company is a key component of successful green purchasing. As posited by Avery (2015), promoting the successful completion of the activities of green purchasing requires that the buyers and suppliers work closely together. Suppliers must thus ensure that the materials as well as other components entering the firm, in the process of procuring and purchasing, are up to standard. At the same time, the managers of the purchasing firm should demand that members that are up the supply chain ensure that the products provided are environmentally friendly and that they commit to the reduction of waste. In this study, green procurement is defined in terms of green sourcing, supplier's management and adoption of green labour (World Bank, 2017).

**Green Marketing Practices**

Green showcasing includes sponsorship activities identified with the surrounding, ecological marking and not forgetting refreshing the organization site about natural issues among others least utilization of paper in a commercial. Further, the surrounding preserving centred bundling and surrounding protection ensuring conveyance is on the whole activities that may improve the natural output of the firm and its production network, (Rao, 2015). A considerable lot of these activities include bargains between different players and ecological thought to improve the natural output of the company (Wu and Dunn, 2014). Organizations who want to adopt a green marketing approach can be able to solve a wide variety of problems. some of these concerns, include, generating donations that ration vitality and other common investments in their conception protocols (Venables, 2016); Creating commercials and other one-time advertisements

that accurately reflect a company's commitment to the environment (Andrews and Shimp 2017); setting prices for green products that match shoppers' cost aversion with their willingness to pay more for environmental protection (Dangelico and Vocalelli, 2017); diminishing contaminations and preserving assets in the transportation of items to advertise (Aziziankohan et al., 2017); and a large group of other promoting related choices.

## Empirical Review

### Green Procurement Practices, green marketing and firm Performance

Agyepong and Nhamo (2015) carried out a study to examine green procurement done in metropolitan counties in S. Africa. Data was realized using a questionnaire which had borrowed some questions from the study Bouwer *et al.* (2005) which was done in Europe. Secondary data was gotten from green procurement policies and several publicly available documents. The study findings established that application of green procurement through tendering choice, call for tender and the definite obtaining of products is not determined.

Nderitu and Ngugi (2014), carried out a study at the East African Breweries Limited (EABL) on the impact of green procurement the company's output. Some of the green procurement variables investigated included; staff competence, ICT infrastructure, supplier participation and capital expenditure. This descriptive research targeted a population of 122 employees where a sample of 37 respondents was considered. Primary as well as secondary information was utilized in the study. Descriptive and inferential statistics were used in data analysis. The paper further employed inference statistics whereby a regression test to seek the connection that exists between the dependent and the explanatory variable.

The study findings established that the various attributes of green procurement influences performance. Staff competence was noted as a great contributor to the effects of green procurement on performance

Elsewhere, Mbaluka *et al.,* (2014) carried out descriptive research to examine the implementation of green procurement in decentralized systems focusing on the Kiambu County Government. The study used a sample of 100 respondents which was made of Procurement supervisors, Store keepers, Logistics and Finance chiefs. The study findings established that Green Public Procurement activities assume the position of a major concept in the decentralized form of governance and slowly being embraced in the procurement functions.

Hasan and Ali, (2015) embarked on conceptual research regarding green marketing policy and how it affects the performance of companies in Malaysia. The study was significant since it examined the green marketing strategies that Malaysian certified ISO 14001 EMS companies had taken up. According to the study findings, the output realized from the green innovation, product and procedure followed positively influenced firm's performance.

Wu and Lin, (2016) conducted a study to examine the extent to which green marketing strategy has impacted on the performance of organic farms in Taiwan. The questionnaire survey was used together with physical comparison demonstration analysis. Some of the green marketing variables examined included; corporate image, the quality of products and environmental

protection. According to the study findings, organic farms should hold on to green marketing strategies so that they can continue improving their quality of product and services while promoting a positive corporate image. Further, the study finding established that products and services that are of high quality coupled with a good cooperate image have the potential to boost business performance.

Eneizan, Abd-Wahab and Obaid (2016) carried out a study in an attempt to establish the extent to which green marketing policy affects the output of companies. The study reviewed different works of literature on the green marketing strategy and firms' output. Some of the green marketing variables reviewed included; green pricing, green product, green advertisements, green processing, green distribution and green people. The study established that companies who have implemented the above green publicizing strategies have likelihood to record more profit.

Fraj, Martínez, and Matute (2011) carried out a research study to determine the influence of green marketing approach on organizational overall output. Data was realized from 361 manufacturing companies in a European country. The study adopted the use of Structural equation modelling with EQS software to analyse the data. According to the study results, green marketing strategy had a positive influence on profitability as it helped organizations optimize their performance and reduce expenditure.

Mungai (2017) also conducted a research study on green marketing approaches on the overall output of flower firms in Kenya with a focus on the Oserian Development Company Limited. This was a census survey which incorporated 44 departmental managers were enrolled as the sample for the study. Raw information was realized by the use of a survey. The already available content was realized from online sources and material literature. The study findings established that green product, price and promotion had a positive influence on performance. However, green distribution did not have a significant influence on the overall output of the company

## RESEARCH METHODOLOGY

The study adopted a descriptive research design. A descriptive survey analysis is a way of gathering data by assessing or surveying a group of people to identify particular aspects of a broad group of people, artifacts, or organizations. (Orodho, 2003). The unit of analysis of the study were the solar firms in Kenya whereas 204 managers from the procurement finance and operations department in Kenya formed the unit of observation to completing the questionnaire. The study used primary data and secondary data. Primary data was obtained using by use of standardized questionnaires. Secondary data was obtained from existing content information was realized from publications and printed sourced archived by the National Environmental Management Authority, energy and petroleum regulatory authority and Ministry of Environment annual reports, journals and books. The purpose of the study was explained and consent to participate in the study was sought through and introductory letter. Appointment dates with individuals head of departments in head branched was set. Drop and pick on the spot and Drop-and-pick-later techniques of questionnaire administering was implored with explanations of how to fill them. Data was then coded and classified in terms of similarities then tabulated. Descriptive statistics such as percentages, means and standard deviations were used to analyze

quantitative data. SPSS version 26 program was also used to analyze quantitative data and results presented in form of charts, graphs and frequency tables for easier interpretation.

## RESEARCH FINDINGS AND DISCUSSIONS

### Response rate

A sum of 204 questionnares were disseminated to the manager representative from either the procurement, finance or operations department in the Solar energy companies. Out of the entire sample size, 157 were receptive respresenting a feedback of 77 %. According to quantitative figures, this contributed for more than 50%, which is regarded sufficient (Dunn 2017).

## Descriptive Analysis of the Variables of the Study

### Green procurement practices

The statements regarding green procurement practices were established and summarized into mean and standard deviation as shown in Table 1.

The response for the first comment with a mean of (4.4) revealed that the respondents agreed that the Company has adopted e–request for bids in the procurement process. This comment however had varied reaction and answers from the respondents as shown by a std dev of 0. 658. The response for the second comment with a mean of (4.01) agreed with the statement that the company has incorporated e-submission of bids in its procurement process. This comment however had varied reaction and answers from the respondents as shown by a 0.479 indicating the responses were varied. The third comments findings with a majority mean of (4.64) agreed with the statement that The Company also adopted technology in the evaluation of tenders. This comment however had varied reaction and answers from the respondents as shown by a std dev was 0.51 indicating the answers were distributed. The response for the fourth comment with a mean of (4.12) agreed with the statement by comprehensively considering the total cost in the process of eliminating waste. STD DEV around the average of was 0.544 indicating the responses were varied. Finally, comment 5 revealed a majority mean of (3.59) agreed with the statement close cooperation with our suppliers promotes the successful completion of green purchasing activities. STD DEV around the average of 0.8576 indicating the responses were varied.

The above results mirror Avery (2015), who opine that promoting the successful completion of the activities of green purchasing requires that the buyers and suppliers work closely together. Suppliers must thus ensure that the materials as well as other components entering the firm, in the process of procuring and purchasing, are up to standard. At the same time, the managers of the purchasing firm should demand that members that are up the supply chain ensure that the products provided are environmentally friendly and that they commit to the reduction of waste.

**Table 1: Green Procurement**

| Statement | Mean | Std dev. |
|---|---|---|
| The company has adopted e–request for bids in the procurement process | *4.4* | 0.658 |
| The company has incorporated e-submission of bids in its procurement process | *4.01* | 0.479 |
| The company also adopted technology in the evaluation of tenders | 4.64 | 0.51 |
| The purchasing department focuses on value by comprehensively considering the total cost in the process of eliminating waste | 4.12 | 0.544 |
| Close cooperation with our suppliers promotes the successful completion of green purchasing activities | 3.59 | 0.856 |

**Green Marketing**

The Likert scale responses on green marketing statements were also established and summarized into mean and standard deviation as shown in Table 2. The response for the first comment with a mean of (4.44) agreed with the statement that the company has adopted green innovation processes that help in marketing the products. This comment however had varied reaction and answers from the respondents as shown by a std dev of 0.702 indicating the responses were varied. The response for the second comment with a mean of (4.21) agreed with the statement that our corporate image has improved due to the green practices adopted by the company. This comment however had varied reaction and answers from the respondents as shown by a std dev of 0.501 indicating varied responses along the Likert scale. The response for the third comment with a mean of (3.65) showed that respondents agreed with the statement that The Company also adopted technology in the evaluation of tenders. This comment however had varied reaction and answers from the respondents as shown by a std dev of was 0.841 indicating the responses were varied. The response for the fourth comment with a mean of (4.09) showed that respondents with the statement Green marketing practices have helped in improving the quality of our products and services. This comment however had varied reaction and answers from the respondents as shown by a std dev of was 0.841 indicating the responses were varied. The findings in comment five posted a mean of (4.03) showing agreement with the statement Green marketing practices have led us to improve our profitability by optimizing marketing performance and reducing costs. This comment however had varied reaction and answers from the respondents as shown by a std dev 0.677 indicating the responses were varied. These findings are corroborated by Wu and Lin, (2016) conducted a study to examine the extent to which green marketing strategy has impacted on the performance of organic farms in Taiwan. According to the study findings, organic farms should hold on to green marketing strategies so that they can continue improving their quality of product and services while promoting a positive corporate image. Further, the study finding established that products and services that are of high quality coupled with a good cooperate image have the potential to boost business performance

**Table 2: Green Marketing**

| Descriptive Statistics | Mean | Std. dev |
|---|---|---|
| The company has adopted green innovation processes that help in marketing the products | 4.44 | 0.702 |
| Our corporate image has improved due to the green practices adopted by the company | 4.21 | 0.501 |
| Our environmental protection policies help in marketing the organization | 3.65 | 0.814 |
| Green marketing practices have helped in improving the quality of our products and services. | 4.09 | 0.597 |
| Green marketing practices have led us to improve our profitability by optimizing marketing performance and reducing costs | 4.03 | 0.677 |
| Valid N (listwise) | | |

**Correlation Analysis**

The study found that there was a positive and significant association between green procurement practices firm performance of solar energy companies (r=.505, p=0.000). The correlation mirror those of Nderitu and Ngugi (2014), carried out a study at the East African Breweries Limited (EABL) on the impact of green procurement the company's output. Some of the green procurement variables investigated included; staff competence, ICT infrastructure, supplier participation and capital expenditure. The study findings established that the various attributes of green procurement influences performance. Staff competence was noted as a great contributor to the effects of green procurement on performance. The results further indicated that there is a positive and significant relationship between green marketing and firm performance of solar energies (r=.616, p=0.000). This signify that an increase in green marketing results in an increase in firm performance of solar energies. The results agreed with those of Eneizan, Abd-Wahab and Obaid (2016) who carried out a study in an attempt to establish the extent to which green marketing policy affects the output of companies.

**Table 3: Summary of Pearson's Correlations**

| | | Green Procurement | Green Marketing | Performance |
|---|---|---|---|---|
| **Green procurement practises** | Pearson Correlation | 1 | | |
| | Sig. (2-tailed) | | | |
| **Green marketing** | Pearson Correlation | .294** | 1 | |
| | Sig. (2-tailed) | .000 | | |
| **Performance** | Pearson Correlation | .505** | .606** | 1 |
| | Sig. (2-tailed) | 0,000 | 0.000 | |

## Regression Analysis

**Table 4 Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .834[a] | .695 | .677 | 0.127922 |

**Table 5 Analysis of Variance**

| | Sum of Squares | d.f | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 5.002 | 4 | 1.251 | 59.571 | .000[b] |
| Residual | 1.990 | 153 | 0.021 | | |
| **Total** | **6.992** | **156** | | | |

**Table 6 Regression of Beta Coefficient and Significance**

| | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|
| | β | Std. Error | Beta | t | Sig. |
| (Constant) | 2.07 | 0.193 | | 10.725 | .000 |
| Green Procurement | .166 | 0.041 | 0.255 | 4.048 | .000 |
| Green Marketing | .138 | 0.053 | 0.235 | 2.603 | .001 |

The results in Table 4. represents the fitness of the regression model used in explaining the study phenomena. The independent variables reported R value of .834indicating that there was perfect relationship between dependent variable and independent variables. R square value of 0.695means that 69.5% of the corresponding variation in performance of solar energy companies in Kenya can be explained or predicted by (green procurement practises and green marketing) which indicated that the model fitted the study data.

The significance value is 0.000 which is less than 0.05 thus the model is statistically significance in predicting green procurement and green marketing influence performance of solar energy companies in Kenya. The F critical at 5% level of significance was 28.61. Since F calculated which can be noted from the ANOVA table above is 59.57 which is greater than the F critical (value= 28.61), this shows that the overall model was significant. Thus, it is factual to mirror this study with the results Lewis (2016) who opine that the he models shows the upcoming importance of GSCM in the current world

An overall regression of coefficients establishes the independent contribution of each variable to the dependent variable. Table 4.10 observes that green procurement practices and green marketing and firm performance were positively and significantly related ($\beta$=0.715, p=0.000). The P-value was 0.000 which is less 0.05 and thus the relationship was significant. These findings are congruent with those of Avery (2015) who opines that promoting the successful completion of the activities of green purchasing requires that the buyers and suppliers work closely together. Suppliers must thus ensure that the materials as well as other components entering the firm, in the process of procuring and purchasing, are up to standard. At the same time, the managers of the purchasing firm should demand that members that are up the supply chain ensure that the products provided are environmentally friendly and that they commit to the reduction of waste.

## Conclusion

The study shows that it has a significant influence on Performance of solar energy companies. This means that raising a unit's renewable procurement would improve the efficiency of solar energy firms. This illustrates that green procurement has a positive effect on solar energy corporations' success. Green marketing regression coefficient indicates that it has a substantial impact on solar energy companies' efficiency. This ensures that when a unit's level of conformity with green marketing increases, so will the efficiency of solar energy firms. This demonstrates that green marketing has a positive impact on solar energy company results.

## Recommendations

The study advises procurement managers in supply chain ensure that the products provided are environmentally friendly and that they commit to the reduction of waste. In this study, green procurement is defined in terms of green sourcing, supplier's management and adoption of green labour. The study also study recommends that Organizations who want to adopt a green marketing approach can be able to solve a wide variety of problems. Some of these concerns, include, generating donations that ration vitality and other common investments in their conception protocols

## REFERENCES


Agyepong, A. O., & Nhamo, G. (2015). An assessment of green procurement practices in South African metropolitan municipalities. *Journal of Public Administration*, *50*(1), 50-69.

Aitken, J., & Harrison, A. (2013). Supply governance structures for reverse logistics systems. *International Journal of Operations & Production Management*.

Andrews, J. C., & Shimp, T. A. (2017). *Advertising, promotion, and other aspects of integrated marketing communications*. Nelson Education.

Aragon-Correa, J. A. and S. Sharma (2003), "A Contingent Resource-Based View of Proactive Corporate Environmental Strategy," The Academy of Management Review, 28 (1), 71-88.

Chen, H., P. J. Daugherty and T. D. Landry (2009), "Supply Chain Process Integration: A Theoretical Framework," Journal of Business Logistics, 30 (2), 27-46.

Emodi, N. V., & Boo, K. J. (2015). Sustainable energy development in Nigeria: Current status and policy options. *Renewable and Sustainable Energy Reviews*, *51*, 356-381.

Eneizan, B. M., Abd-Wahab, K., & Obaid, T. F. (2016). Effects of green marketing strategy on the financial and non-financial performance of firms: A conceptual paper. *Oman Chapter of Arabian Journal of Business and Management Review*, *34*(3796), 1-14.

Fahimnia, B., Sarkis, J., & Davarzani, H. (2015). Green supply chain management: A review and bibliometric analysis. *International Journal of Production Economics*, *162*, 101-114.

Guta, B. (2016). Relationship between reverse logistics practices and organizational performance (Doctoral dissertation, Addis Ababa University)

Hansen, U. E., & UNEP, D. (2016). Mapping of Solar PV and Wind Energy Markets in Kenya: Current State and Emerging Trends.

Hart, S. L. (1995), "A Natural-Resource-Based View of the Firm," Academy of Management Review, 20 (4), 986-1014.

Hart, S. L. and G. Dowell (2010), "A Natural-Resource-Based View of the Firm: Fifteen Years After," Journal of Management, Forthcoming

Hasan, Z., & Ali, N. A. (2015). The impact of green marketing strategy on the firm's performance in Malaysia. *Procedia-Social and Behavioral Sciences*, *172*, 463-470.

Hoskisson, R., M. Hitt, W. Wan and D. Yiu (1999), "Theory and Research in Strategic Management: Swings of a Pendulum," *Journal of Management*, 25 (3), 417-456.

Islam, M., Turki, A., Murad, M., & Karim, A. (2017). Do sustainable procurement practices improve organizational performance? *Sustainability*, *9*(12), 2281.

Kadam, P., & Bhalerao, S. (2010). Sample size calculation. *International Journal of Ayurveda research*, *1*(1), 55.

Karanja, A., & Gasparatos, A. (2019). Adoption and impacts of clean bioenergy cookstoves in Kenya. *Renewable and Sustainable Energy Reviews*, *102*, 285-306.

Karanja, A., Mburu, F., & Gasparatos, A. (2019). A multi-stakeholder perception analysis about the adoption, impacts and priority areas in the Kenyan clean cooking sector. *Sustainability Science*, 1-19.

Kuriyama, N. (2017). Japanese human resource management: Labour-management relations and supply chain challenges in Asia.

Kirunga, F. & Kihara, A. (2018). Influence of green distribution practices on environmental performance of chemical manufacturing firms in Kenya. Journal of International Business, Innovation and Strategic Management, 1(7), 197 - 214.

Lewis, H., Gertsakis, J., Grant, T., Morelli, N., & Sweatman, A. (2017). *Design+ environment: a global guide to designing greener goods*. Routledge.

Lewis, P., Thornhill, A., & Saunders, M. (2003). *Employee relations: understanding the employment relationship*. Pearson Education.

Mbaluka, P. N., Nzomo, M. P., Shale, D. N. I., & Jkuat, K. (2014). AN assessment of the effect of green procurement implementation in devolved systems in Kenya: A case of County Government of Kiambu.

Mwaura, A. W., Letting, N., Ithinji, G. K., & Bula, H. O. (2016). Green distribution practices and competitiveness of food manufacturing firms in Kenya.

Olatunji, S. O., Olawumi, T. O., & Odeyinka, H. A. (2016). Nigeria's public procurement law–Puissant issues and projected amendments. *Public Policy and Administration Research*, *6*(6), 73-85.

Olhoff, A., & Christensen, J. M. (2018). Emissions Gap Report 2018.

Oberlin, S. A. (2011). The role of households in solid waste management in East African capital cities. S.l: s.n.

Olsen, M. D., & Westergaard-Kabelmann, T. (2018). Socio-economic study of key impacts from Lake Turkana Wind Power (LTWP).

Ondraczek, J. (2014). Are we there yet? Improving solar PV economics and power planning in developing countries: The case of Kenya. *Renewable and Sustainable Energy Reviews*, *30*, 604-615.

Venables, A. J. (2016). Using natural resources for development: why has it proven so difficult?. *Journal of Economic Perspectives*, *30*(1), 161-84.

Verbruggen, A., & Lauber, V. (2012). Assessing the performance of renewable electricity support instruments. *Energy Policy*, *45*, 635-644.

World Bank, 2015. Kenya's Geothermal Investments Contribute to Green Energy Growth, Competitiveness and Shared Prosperity. February 23, 2015.