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Environmental Regulation Practice and Sustainable Performance of Multinational Tea Firms in Kenya

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Abstract: Performance of firms has remained a global issue based on changes in climate and global warming among others. This issue has forced countries to adopt green strategies so as to reduce the effect of climate change on business sustainability. Climate change affect agricultural-processing firms directly leading to poor performance. Environmental regulation is one of the green supply chain practices introduced to businesses as a measure to solving problem of sustainable performance. This study aimed at determining the relationship between environmental regulation and sustainable performance of multinational tea firms in Kenya.The study was anchored on sustainable and institutional theories. Correlational and cross-sectional research design was adopted. A sample of 225 managers were selected using stratified sampling technique from a target population of 512 from the three multinational tea firms of James Finlay, George Williamson and Ekaterra with primary data being collected using a questionnaire. Content, face, criterion and construct validity of the instrument was achieved through interrogation of instrument by supervisors and experts. Reliability was examined using Cronbach Alpha coefficient where a score of 0.801 was realised. Linear regression and correlation analysis were used in establish coefficient of determination and correlation coefficient. The R squared value showed that environmental regulation had no impact on sustainable firm performance (R^2 = 0.000, F=.034; p>0.05), this indicates that sustainable firm performance was not attributable to environmental regulation. Implying that whenever multinational tea firms invested on environmental regulation as a green supply chain practice there was no impact on their sustainable performance. The study recommends that multinational tea firms in Kenya should establish why this practice is not impacting on performance as expected. The findings may be beneficial to the tea industry players, policy makers, scholars, the general public as well as the county and national governments as it will give them necessary information that may assist in developing sustainable performance strategies in the tea sector.

Keywords: Environmental regulation, Sustainable Performance, Climate Change, Global warming

I. Introduction

For decades, environmental issues have been increasing and traveling faster than forest fire, country to region, region to world level territory, which is a serious cause of climate change and global warming. In addition, scarcity of natural resources and air and water pollution badly affect the fauna and flora, human life with different diseases such as ischemic heart disease, lung cancer, chronic obstruction pulmonary disease, stroke, Dracunculiasis, Cholera, Hepatitis, Typhoid fever, and Norovirus (Sar, Dong, Wei, Khalid, & Yu, 2017).

The basic ideology behind green concept is to enhance environmental sustainability, but firms adopt green concept as "kill two enemies with one bullet". Because green supply chain practices can reduce the environmental pollution and production costs and it also can spur economic growth, create competitive advantage in terms of greater customer satisfaction, positive image and reputation and provide better opportunity to export their products in pro-environmental countries (Khan & Dong, 2017).

The definition of green idea is expanding with new innovations and techniques focused on enhancing environmental sustainability, which can be recognized by corporate social responsibility, green manufacturing, waste reduction, recycling and remanufacturing sustainable/environmentally friendly supply chain and green supply chain.

Globally, as the environmental awareness is increasing, firms are facing heavy pressure from different stakeholders including government and customers to mitigate their harmful effect on the environment (Luthra, Garg & Haleem, 2016). Indeed, corporate sector needs to consider integrating their business practices in service and manufacturing industry with sustainability and reducing end-to-end supply chain costs to achieve competitive advantage (Gunasekaran & Spalanzani, 2012). In the last couple of decades, growing impacts of global warming, climate change, waste and air pollution issues have involved increasing world-wide attention of experts to think more eco-friendly and find optimum possible solution towards "Green" (Rostamzadeh, Govindan, Esmaeili, & Sabaghi, 2015).

Rath (2013) identified that GSCP (green supply chain practices) plays part in motivating organizational sustainability. With the environmental concerns rising continuously, GSCP deserves a persistent community

concern in developed nations. Further, it has recently woken up the developing nations to the green movement (Kumar, Jain & Kumar, 2014).

In order to obtain a long-term production in organizations there is need to adopt green economy strategies, policies and concepts. Supply chain controls entire life cycle of product from manufacturing to end product from supplier, manufacturers, warehouses, distributors and retail to the end consumer (Sahar, Afifudin, & Indah, 2020). Green supply chain Practice (GSCP) is a concept of integrating environmental processes through the use of green strategies and technologies into the traditional supply chain. These strategies are applied at sourcing through green purchasing, manufacturing through eco-designing, distribution through green logistics and management through environmental regulation. Green supply chain practices envisage environmental regulation, green logistics, eco-design, and green purchasing (Padash, Bidhendi, &Ardestani, 2015). In Malaysia, green supply chain practices has been rapidly expanding in order to include environmental conservation. The firms have invested in green design, green information technology, industrial symbiosis, reverse logistics and carbon management practices to combat the effect of carbon on environment (Islam, Karia, Fauzi, & Soliman, 2017).

Environmental legilation is crucial in enabling green dynamic capability and tenable innovation to improve performance of firms (Xing, Liu, Shen, & Wang, 2020). Ramanathan, He, Black, Ghobadian, & Gallear (2017) asserts that environmental regulation are achieved by firms that are adopt dynamic approach to environmental regulations innovatively. Elmagrhi, Ntim, Elamer, & Zhang (2018) also found that environmental policies and regulation can be achieved through implimentation of environmental strategies, enviromental implementation and environmental disclosure. Borsatto, Bazani, & Amui (2020) pointed that countries' environmental regulation had positive impact on green innovatoin that results to global compact and environmental investment.

II. Problem Statement

Environmental regulation is intended at reducing environmental degradation and enable sustainable performance of firms along the supply chain. Multinational Tea firms are major economic drivers in Kenya providing employment to the society and act as source of foreign exchange. The tea sector which heavily depends on manufacturing of commodities is among the target sectors in the improvement of the environment. However, despite the adoption of environmental regulation methods, sustainable performance has not been fully realised, and it unclear whether these regulations can positively influenced performance of tea firms in Kenya. The symptoms of poor sustainable performance are poor performance of tea produce in global market, increase of unemployment in the multinational firms, and global warming effects resulting to drought, frost and floods. Kenya tea's performance on the global market, with earnings for the product dropping by 9.1% as indicated in the third quarter of 2021 compared with similar period in 2020. There is an autcry due to failure to find ways of conserving the environment and tenable use of natural resource resulting from deforestation, land and environmental degradation in the tea sector. To address these challenges there is a need to balance between economical, ecological and social benefit in many agricultural manufacturing firms especially the Multinational tea firms. Therefore, this study sought to find out the relationship between environmental regulation and sustainable performance of multinational tea firms in Kenya.

Hypothesis:

There is no significant relationship between environmental regulation and sustainable performance of multinational tea firm in Kenya.

III. Literature Review

The study was anchored on ecological, sustainable and institutional theories. Maoris created the ecological modernization theory in the 1800s. According to the theory, preventive innovation, state planning and coordination, and technological advancement can be used to jointly accomplish industrial development and environmental protection (Iles, 2019). Green technology adoption in supply, procurement and purchasing, manufacturing, logistics and distribution would enable greening of supply chain (Kouhizadeh & Sarkis, 2018). Hence, these would enable environmental as well as socio-economic benefit to the organization. This theory therefore, supports environmental regulation which are entailed in green supply chain practices and treat the practices as fundamental aspect of in creating economic development.

Brundtland introduced the sustainable theory also known as Brundtland theory in 1984. The theory proposes that successful sustainable performance through achieving present goals of the organization without affecting the future generation (Ditlev-Simonsen, 2022). Therefore, sustainability has three concepts that is environmental, society and economy. Due to change in climate organization are nowadays involved in taking measured that ensure carbon emission resulting greening supply chain and other functions in the organization. In

order to ensure sustainable development, green supply chain practices employ green technology and green strategies in green manufacturing, green logistics, and green energy use (Nureen, Liu, Irfan, Malik, & Awan, 2023). The factor that can affect the implementation of green strategies; ethics, people, technology, innovation, environment and climate change.

Institutional theory explains the role of institution in adoption of new concept of management. According to institutional theory, the researchers discovered that firms' adoption of green practices and supply chain practices were influenced by external factors. The development of clean mechanisms, clean energy regulation, and restrictions on toxic emissions resulting from the production of electronic components were all cited as these factors or drivers for the adoption of green supply chain activities (Garai, Mondai, & Roy, 2018).

IV. Environmental regulation and performance of a firm

Environmental regulation are procedures, policies and strategies applied by the firm to ensure green strategies are developed to sustain the firm. Xing, Liu, Shen, & Wang (2020) argues that environmental regulation is crucial, green supply chain practices that enable firms to use sustainable innovation and green dynamic capability to improve financial performance. Those firms that use dynamic approach in solving environmental regulation innovatively were proactive and better in environmental performance (Ramanathan, He, Black, Ghobadian, & Gallear, 2017).

The relationship between financial performance and environmental regulation was studied by Xing, Liu, Shen, & Wang in (2020). The study also looked at whether green innovation and dynamic capability could mediate the link between environmental regulation and financial performance. Information was gathered from 355 Chinese manufacturing companies.

The results showed that green dynamic capability and sustainability exploration innovation as well as green dynamic capability and green exploitation innovation were two different mediation paths through which environmental regulation had a significant impact. Therefore, dynamic capability and innovation had mediating effect on environmental regulation and financial performance. The environmental regulation was examined on financial performance which represent economic performance. The current study focused on performance of the firm which entailed social, environmental and economic performance.

Ramanathan, He, Black, Ghobadian, & Gallear (2017) examined environmental regulation, innovation and performance of firms. Nine cases of Chinese and United Kingdom (UK) firms were used. The study reviewed Porter hypothesis where data from cases study were conceptualized. Findings indicated that dynamic approach depending on resources and capabilities in the firm to respond to environmental regulation innovatively. These firms took a proactive approach in managing environmental performance to achieve economic development. The current study used a survey of multinational firms rather than a case study of firms.

Elmagrhi, Ntim, Elamer, & Zhang (2018) analyzed environmental policies and regulation, governance structure and environmental performance in relation to the role of female directors. Female directors' age and level of education, gender diversity in the board influenced Chinese corporations' environmental performance. A dataset from 2011 to 2015 of 383 listed A-shares Chinese firms with 1,674 observation. The findings revealed that female directors' age had positive influence on environmental performance in terms of strategy, implementation and disclosure. The current study examined multinational firms rather than listed public companies.

Environmental regulations was investigated by Borsatto, Bazani, & Amui (2020) in relation to green innovation and financial performance. A sample of 159 industrial companies were analyzed using Structural Equation Modeling. The findings of environmental regulations and size of the firm were founf to have a significant positive impact on environmental investments. However, countries competitiveness had no positive influence on green innovation efforts. Similarly, internationalization of companies had no significant effect on companies' green innovation constructs. Green innovation did not reflect positively on financial performance. The current study used moderated linear regression model rather than structural equation modelling.

Padash, Bidhendi, & Ardestani (2015) examined the development of the green strategy management framework. The Plan-Do-Check-Act cycle, which is emphasized in the environmental management system model, is the first framework and the first system to guarantee the monitoring, tracking, and reporting of emissions data. The model helps manage the environment and reduce carbon emissions, which is appropriate for a green manufacturing strategy. The second model is an ecological management and audit scheme, which contributes significantly to material and energy efficiency through the management of biodiversity, waste reduction, and emissions. Through the use of key performance indicators, which over 4600 organizations have adopted, it ensures environmental performance and monitoring. The life cycle assessment (LCA) model evaluates the environment based on an activity, process, or product and considers the resources used, the energy used, as well as any environmental wastes. The current study examined green supply chain management on performance.

V. Sustainable Performance of Firms

Performance is multi-dimensional concept that entail operational, social, economic and environment performance. However, some green supply chain studies put a focus on environmental performance, and this still remains one dimension of performance. According to Younis, Sundarakani, & Vel (2015) who examined green supply chain practices (Padash, Bidhendi & Ardestani, 2015; Ahmed, Hui, Ahmed, Tarek & Mahmoud, 2020). Economic, social and environmental perforamance remained to be the main indicators of tenable performance (Alnoor, Eneizan, Makhamreh and Rahoma, 2019; Qorri, Mujkić, Gashi & Kraslawski, 2018). Other measure of performance are green performance and corporate tenable performance as employed by Chen, Chang & Lin (2014) and Widisatria & Nawangsari (2021) respectively.

Environmental biodiversity has gained more concern globally with environmentalist and nations coming in passing policies that would incorporate public as well as private sector (Gajendrum, 2017). Social and environmental dimensions has remained to be crucial in modern society, it is significantly affected by green and tenable supply chain management mainly in the emerging economies (Gamboa-Bernal, Morento-Mantilla, & Orjuela-Castro, 2020).

Conceptual Framework

The conceptual framework below indicates the relationship between environmental regulation and sustainable performance of multinational tea firms in Kenya.

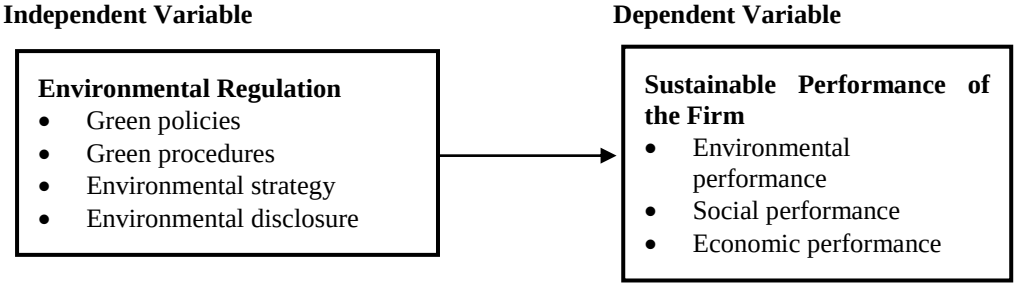

Figure 1 Conceptual framework

Source: Researcher, (2023)

VI. Research Design

Correlation and cross-sectional research designs were utilized in this study. The study focused on Kericho and Bomet Counties. The two counties are the part of South Rift region. Kericho County lies between longitudes 35^0 02^0 West and 35^0 40^0 East and also between the Equator and latitude 0230 South. The study targeted 512 top, middle and lower-level managers from tea plucking to tea product distribution from the three multinational companies. The managers were appropriate for the study because they have knowledge on the green supply chain practices. A sample of 225 respondents was selected using stratified and simple random sampling methods. The study utilised Primary data collected using a structured questionnaire. Simple linear regression analysis was conducted to test the effect of eco-design on sustainable performance where R and R2 values were generated and interpreted.

VII. Findings and Discussion

Environmental Regulation and Sustainable Performance of the Firm

Hypothesis Ho_1, stated,

There is no significant relationship between environmental regulation and sustainable performance of multinational tea firm in Kenya

Table 1 indicates the correlation for the relationship between environmental regulation as an independent variable and sustainable performance was positive and insignificant ($r = 0.013$, $p>0.05$). This demonstrates that there was no significant relationship between environmental regulation and sustainable performance of multinational tea firms implying that whenever firms in the industry invested on environmental regulation there was a no improvement on their sustainable performance.

Table 1 Environmental regulation and Sustainable Performance of Multinational Tea Firms

Variable	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	**Std . Error**	**Beta**		
(Constant)	32.751	2.274		14.403	
Environmental regulation	- .018	.097	-.025	-.185	.853
R =.013					
R^2=.000					
F =.034					

*p<0.05
Source: Research Data, (2023)

The results further indicated that environmental regulation negatively predicted sustainable performance of multinational tea firms (β1= -.018, t= -.185; p>0.05), meaning a unit increase in resource regulation produced a -0.018 change in sustainable performance. The R squared value showed that environmental regulation had no impact on sustainable firm performance (R^2 = 0.000, F=.034; p>0.05), this indicates that sustainable firm performance was not attributable to environmental regulation. Therefore, the Hypothesis that there is a significant relationship between environmental regulation and sustainable firm performance is therefore rejected.

The findings are inconsistent with those of Xing *et al.,* (2020) study on the relationship between financial performance and environmental regulation in China whose findings showed that green dynamic capability and sustainability exploration innovation as well as green dynamic capability and green exploitation innovation were two different mediation paths through which environmental regulation had a significant impact. The results of the current study similarly did not find support from an environmental regulations study investigated by Borsatto *et al.,* (2020) in relation to green innovation and financial performance which established that environmental regulations and size of the firm were found to have a significant positive impact on environmental investments. Padash *et al.,* (2015) examined the development of the green strategy management framework they found out that the model helps manage the environment and reduce carbon emissions, which is appropriate for a green manufacturing strategy.

VIII. Conclusion Recommendation

On environmental regulation, the study concluded that there was no significant impact on sustainable performance of multinational tea firms in Kenya. This means that multinational tea firms in Kenya could not benefit in their effort to use existing environmental regulations. This could be attributed to political and social factors in their areas of operation.

IX. References

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