

An Analysis of Commercial Banks' Responses to Climate Change; a Case of Commercial Banks in Kitui County Kenya.

Festus Kitonga¹, Dr. Boniface Manono², Dr. Muusya Mwinzi³

 Crossref DOI: [10.61108/ijsshr.v1i1.19](https://doi.org/10.61108/ijsshr.v1i1.19)

¹South Eastern Kenya University, Student

²South Eastern Kenya University, Supervisor

³South Eastern Kenya University, Supervisor

ABSTRACT

Warming of the climate system is unequivocal, and since the 1950s, many of the observed climate changes are unprecedented over decades to millennia. The main objective of this study was to assess the impact of climate change on banking performance in Kenya. The specific objectives were to assess the impact of climate change strategy, corporate governance, climate change disclosure, and climate change policy against the banking performance in Kenya. The total target population was all the commercial banks in operating Kitui town with 250 employees which according to Kenya central bank annual supervision report, the town has a total of 10 bank branches 2019. Descriptive survey design and correlational research design were used in this study. Primary and secondary data were used. While self-administered questionnaire and interview guide were used to collect primary data, the study reviews the previous evaluation reports to seek the secondary data on performance. The data collected was then analyzed by both descriptive and inferential statistical tools. Being that the current study was dealing with the relationship study, the study therefore used regression model as a tool of analysis and the results generated were presented in form of tables. The results of this study is to benefit policy makers, managers, administrators, entrepreneurs, researchers, consultants, scholars and trainers involved in strategic entrepreneurship development. This study tested the null hypotheses that climate change strategy, corporate governance, climate change disclosure, and climate change policy have no significant impact against the banking performance in Kenya. Pragmatism paradigm approach and mixed method research was adopted in this study. The questionnaire was tested for validity and reliability. Quantitative and qualitative techniques were used to analyze the collected data with the assistance of Statistical Package for Social Sciences (SPSS) software. Multiple regression and correlation analysis were carried out. The study found out that banking performance in Kenya was impacted positively by the change strategy, corporate governance, climate change disclosure, and climate change policy.

Keywords: Climate Change Strategy, Corporate Governance, Climate Change Disclosure, Climate Change Policy, Banking Performance

1.0 INTRODUCTION

1.1 Background of Study

Climate change are increasingly recognized as the fundamental challenges for businesses hence there is need to protect the environment (Hoffman & Woody, 2008). The impact of climate change on companies and society has intensified (Kolk & Pinkse, 2005; Stern, 2007). Over the past century, the average global temperature has increased by more than 0.7°C and will continue to rise, with projections of 0.5°C to 5°C

per decade (IPCC, 2013). Increases in the average global temperature, changes in precipitation patterns, rising sea levels, drought and massive increases in weather-related natural catastrophes are consequences of climate change (IPCC, 2013).

The major drivers of climate change are the increased concentration of greenhouse gases (GHG) in the atmosphere, including the emissions of methane (CH₄), carbon dioxide (CO₂) and nitrous oxide (N₂O). Stern (2007) reported that the amount of GHG emissions in the global environment has almost doubled and continues to increase. The acceleration of GHG emissions worldwide is related to energy consumption and transportation. It is estimated that, by more than 95 percent probability that the human activities are responsible for the emission of the heat trapping Greenhouse gases (Change 2015). Carbon dioxide in the atmosphere has increased by 35% in the past 250 years, by far exceeding natural variations over the past 650,000 Years, and probably the past 10 million years (IPCC, 2007).

Climate change is already a reality. Ever-more-ferocious cyclones and extended droughts lead to the destruction of infrastructure and the disruption of livelihoods and contribute to mass migration. Actions to combat rising temperatures, inadequate though they may have been so far, have the potential to drive dislocation in the business world as fossil fuel giants awaken to the need for renewable sources of energy and automakers accelerate investments in cleaner vehicles. But measuring economic costs of climate change remains a work in progress. A study by Gold, Russell. (2019). "On the First Climate-Change Bankruptcy, Probably Not the Last." assess the immediate costs of changing weather patterns and more frequent and intense natural disasters, but most of the potential costs lie beyond the horizon of the typical economic analysis. The economic impact of climate change will likely accelerate, though not smoothly. Crucially for the coming generations, the extent of the damage will depend on policy choices that we make today.

Policymakers and investors increasingly recognize climate change's important implications for the financial sector. Climate change affects the financial system through two main channels. The first involves physical risks, arising from damage to property, infrastructure, and land. The second, transition risk, results from changes in climate policy, technology, and consumer and market sentiment during the adjustment to a lower-carbon economy. Exposures can vary significantly from country to country. Lower- and middle-income economies are typically more vulnerable to physical risks.

For financial institutions, physical risks can materialize directly, through their exposures to corporations, households, and countries that experience climate shocks, or indirectly, through the effects of climate change on the wider economy and feedback effects within the financial system. Exposures manifest themselves through increased default risk of loan portfolios or lower values of assets. For example, rising sea levels and a higher incidence of extreme weather events can cause losses for homeowners and diminish property values, leading to greater risks in mortgage portfolios. Corporate credit portfolios are also at risk, as highlighted by the bankruptcy of California's largest utility, Pacific Gas and Electric. In what The Wall Street Journal called the first "climate-change bankruptcy" (Gold 2019), rapid climatic changes caused prolonged droughts in California that dramatically increased the risk of fires from Pacific Gas and Electric's operations. Tighter financial conditions might follow if banks reduce lending, in particular when climate shocks affect many institutions simultaneously.

1.2 Statement of the Problem

Climate change is threatening every aspect of the life. Existing climate variability has significant economic costs in Kenya. While there may be broad agreement that climate change is the greatest economic and moral challenge of our time, there is far less agreement about how to address it. (Bowman 2010) Periodic floods and droughts cause major macro-economic costs and reductions in economic growth Kenya (Stockholm Environment Institute report 2009). Future climate change will lead to very large economic costs, almost 3% of GDP loss each year by 2030 in (Stockholm Environment Institute 2009). Every institution and individual must act to limit GHG pollution within their own sphere of

influence. As the epicenter of a countries economy, there is need to establish the current in place policies by commercial banks on climate change to actualize the proposal of reducing GHG emissions. Banking sectors as any other investment is also at risk of climate change risk impacts. ((Demertzidis et al. 2015). Banks have to change from the “business as usual” way of operation if they have to be mitigated against climate change risk as well as if they want to stand to be counted in the world effort of mitigating and creating climate change resilient world. Based on problem at hand, there is need to establish the position and efforts of commercial banks in deducing the GHG emission.

1.3 Objectives of the Study

1.3.1 General objective of the Study

The general objective of this study is to assess the impact of climate change on banking performance in Kenya

1.3.2 Specific Objectives

- i. To find out the impact of climate change strategy on banking performance in Kenya
- ii. To determine the impact of Corporate governance in terms of climate change on banking performance in Kenya
- iii. To evaluate the impact of the climate change disclosure on banking performance in Kenya
- iv. To assess the impact of climate change policy on banking performance in Kenya

1.4. Research Hypothesis

The following hypotheses was guide the study;

H0₁: Climate change strategy has a positive impact on banking performance in Kenya.

H0₂: Corporate Governance in terms of climate change has a positive impact on banking performance in Kenya.

H0₃: Climate change disclosure has a positive impact on banking performance in Kenya.

H0₄: Climate change policy has positive impact on banking performance in Kenya.

1.5 Significance of the Study

This study is designed to help assessing how commercial banks are responding to climate change impacts. The study will help the management of commercial bank in understanding staffs knowledge of climate change impacts to their organization. The study will help commercial banks Climate change knowledge level and Climate change impacts affecting their organization and hence be able to make informed decisions and appropriate strategic responses not only for their risk management but also for achieving the low carbon economy dream.

Climate change also provide not only risk but also the opportunities to banks which banks may not be aware of, This researcher brought to notice the opportunities banks can take in their line of business and achieve more sustainable growth. Findings of this study highlighted pertinent issues regarding the industry which can help government in policy formulation especially CBK as the regulator of commercial banks The research also hopes to help fill the knowledge gap regarding strategic responses initiatives banks can take to respond to climate changes.

2.0 Literature Review

2.1 Theoretical Review

A theoretical review refers to the theory that a researcher chooses to guide him/her in his/her research (Cooper & Schindler, 2014). In this study, the theoretical review consisted of theories, which exhibit impact of climate change on organizational performance of financial institution using two theories namely: resource-based view theory, and Institutional theory,

2.1.1 Resource-Based Views Theory

Traditionally, industry-based and resource-based views have been used to explain business strategy and performance. The industry-based view suggests that conditions within an industry drive business strategy

and performance (Porter, 1980); whereas, the resource-based view (RBV) (Barney, 1991) argued that it is the specific resources of the organisation that drive business strategy and performance. Organization's resources can be classified into two: that is tangible which are financial, technological, physical and human while intangible are: brand-name, reputation, and know-how resources. According to Barney (2000), resources lead to sustainable competitive edge when they are accessible, rare, imitable and non-substitutable. Resources such as technology, natural resources, finances and economies of scale can create value. However, the resource-based view theory argues that these sources of value are available to all and easy to copy, compared to the complex social system.

2.1.2 Institutional Theory

However, both perspectives are inadequate for examining the institutional underpinning, especially in the emerging economies, as the institutions are significantly different from those in developed economies (Peng et al., 2008). As organisations often respond differently towards climate change, even industries within the same sector and country (Jeswani et al., 2008), Levy and Kolk (2002) suggested that institutional theory offered the potential to explain the difference in organisations' strategic responses. Institutional theory provides a basis for examining social pressures and conformity to rules and norms of the institutional environment (DiMaggio & Powell 1983; Scott, 2008). Institutional theory proposes that regulatory, normative, and cognitive pressures influence organisations to respond and adopt specific practices (Scott, 2008). Therefore, organisations facing the same institutional pressures are more likely to have similar responses. For instance, coercive (regulatory) pressures may encourage organisations to voluntarily disclose their sustainability information as a strategy to gain legitimacy (Amran & Haniffa, 2011). Existing research by Amran et al. (2012) applied institutional theory to explain climate change mitigation efforts, arguing that businesses from various industries adopted similar mitigation practices due to institutional pressures. Similarly, in a longitudinal study, Bansal (2005) examined Canadian firms in the oil and gas, mining, and forestry industries, and found that institutional factors influenced corporate sustainable development. Hence, institutional theory suits this context and may offer a good explanation for organisations' adoption of climate change business strategy

2.2 Conceptual Framework

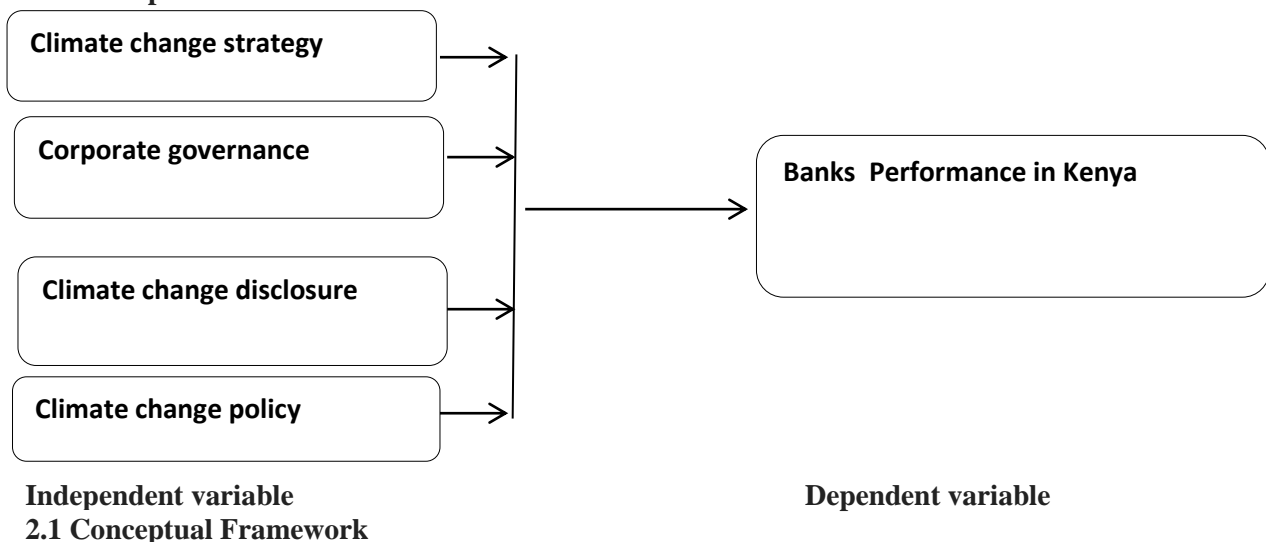


Fig1.1: Conceptual Framework

2.4 Empirical Review

Previous researches confirmed that organizations require greater assistance and direction on how to address Climate Change Strategy on Banking Performance.(Hamann et al. 2017; Singh et al. 2018; Mitchell et al. 2020; Villegas Pinuer et al. 2021). Numerous studies have explored the relationship between climate change strategy and banking performance. A study by Smith et al. (2017) examined the adoption of green lending practices by banks and found a positive correlation between sustainable lending and financial performance. Similarly, Jones and Lee (2019) investigated the integration of environmental risk assessment into banking operations and reported improved risk-adjusted returns. In the context of Kenya, Nyaga and Muthinja (2020) analyzed the implementation of climate-resilient lending practices by Kenyan banks and identified a significant positive impact on profitability. These findings collectively suggest that a well-executed climate change strategy can enhance banking performance through risk reduction, customer attraction, and revenue generation.

Corporate governance practices related to climate change have gained attention in recent years. A study by Brown and Deegan (2018) examined the role of climate change committees in influencing banks' environmental decisions and found that boards with dedicated committees are more likely to adopt sustainable practices. In the Kenyan context, Njiraini and Kibera (2019) investigated the relationship between board diversity and climate change initiatives in banks and concluded that diverse boards are more likely to prioritize climate-related matters, positively impacting performance. These studies suggest that effective corporate governance, particularly through specialized committees and diverse boards, can contribute to improved climate-related decision-making and subsequently enhance banking performance.

Climate change disclosure practices have become essential for banks to communicate their sustainability efforts and risk management strategies. A study by Chang et al. (2021) explored the relationship between climate disclosure and bank performance and found a positive association between transparent reporting and stock returns. In the Kenyan context, Ouko and Mutua (2018) investigated the extent of climate change disclosure among Kenyan banks and highlighted the potential for enhanced stakeholder trust and investor confidence through comprehensive reporting. These findings suggest that robust climate change disclosure practices can positively influence banking performance by attracting socially responsible investors and fostering trust among stakeholders.

The influence of climate change policy on banking performance has been examined in several studies. A research by Scholtens and Zhou (2020) analyzed the impact of government climate policies on bank profitability and found that banks in countries with stringent climate regulations exhibit better financial performance. In the Kenyan context, Keter and Kipchumba (2019) investigated the alignment of Kenyan banks' strategies with national climate policies and reported that policy adherence positively affects bank reputation and customer loyalty. These studies collectively suggest that a supportive regulatory environment and alignment with climate change policies can contribute to improved banking performance through risk mitigation, operational efficiency, and market positioning (Kirea,& Omwenga,2023)..

2.5 Critique for Available Literature

While many studies emphasize the positive relationship between climate change strategy and banking performance, the literature tends to lack in-depth exploration of potential negative consequences. For instance, there might be short-term costs associated with adopting climate-resilient practices, such as increased operational expenses or initial difficulties in transitioning. Moreover, the literature often lacks a comprehensive assessment of the specific indicators used to measure banking performance. Without a standardized set of metrics, comparing findings across studies becomes challenging. Future research should consider conducting longitudinal studies to better capture the long-term effects of climate change strategy implementation. Additionally, researchers should explore potential trade-offs between immediate financial costs and long-term benefits, providing a more balanced view of the impact on banking performance (Charles, & Benson, 2023).

The literature frequently assumes a direct and linear relationship between corporate governance structures, climate change awareness, and banking performance. However, this overlooks potential complexities and nuances within the governance landscape. The impact of corporate governance might vary based on the composition of boards, cultural factors, and the commitment of individual board members to climate-related matters. Future studies should employ qualitative research methods, such as interviews and case studies, to delve deeper into the mechanisms through which corporate governance influences climate change decision-making and its subsequent impact on banking performance.

While much of the literature highlights the positive correlation between climate change disclosure and banking performance, it often neglects the challenges and limitations of disclosure practices. There might be concerns about greenwashing, where banks overstate their environmental efforts to attract investors. Additionally, the literature rarely explores the potential negative impact of disclosure on banks that face difficulties in aligning with sustainable practices. Researchers should address the potential biases and limitations associated with disclosure data. A more critical examination of the quality, transparency, and accuracy of disclosed information would provide a more nuanced understanding of its impact on banking performance.

The literature tends to assume a direct and immediate relationship between climate change policy adherence and banking performance. However, the actual influence of policy on performance might be contingent on various factors, including the level of enforcement, banks' proactive approach to policy integration, and the adaptability of banks to regulatory changes. Future research should consider exploring the intermediate mechanisms through which climate change policies influence banking performance. Comparative analyses of banks that successfully align with policies and those that struggle to do so could provide valuable insights into the complexities of policy impact.

2.6 Research Gap

There is a gap in the literature regarding how the level and quality of climate change disclosure by commercial banks in Kitui County, Kenya, affect their reputation, risk management, and financial performance. There is a need to investigate how specific climate change strategies adopted by commercial banks in Kitui County, Kenya, influence their financial performance, considering factors such as loan portfolios, risk exposure, and customer engagement. There is a research gap in understanding how corporate governance practices, including the composition of boards, oversight mechanisms, and stakeholder engagement, impact the climate change strategies and subsequent performance of commercial banks in Kitui County, Kenya. There is a need to investigate how compliance with or alignment to climate change policies, both at national and international levels, affects the operational efficiency, risk exposure, and profitability of commercial banks operating in Kitui County, Kenya.



3.0 Materials and Methods

The research design and philosophy of the study were shaped by Orodho's definition of research design as a plan for data collection and analysis, influenced by researchers' beliefs. The study utilized a descriptive survey design, leaning towards qualitative methods, beneficial for efficient data collection from a large group. However, limited research specific to Kenyan commercial banks created a research gap. The study adopted a blend of positivist and interpretivist research philosophies to comprehensively understand the impact of climate change. These paradigms complemented each other's limitations, with positivism relying on standardized instruments and interpretivism emphasizing subjective interpretation. The target population comprised commercial banks in Kitui town with 250 employees, addressing a gap in research regarding banking performance in the Kenyan context. A sampling frame facilitated participant selection, and stratified random sampling ensured representation from each subgroup. The research employed questionnaires for data collection, distributed among three bank departments. Primary and secondary data were collected, where primary data was obtained from employees through questionnaires. The pilot study tested instrument reliability and validity. Data analysis involved mixed methods, including Pearson's correlation coefficient and regression analysis for quantitative data, with results presented through tables and graphs. Qualitative data was presented descriptively. This comprehensive approach aimed to address gaps in existing literature and provide valuable insights into commercial banks' responses to climate change in Kitui County, Kenya.

4.0 Results

4.1 Response rate

The total number of questionnaires distributed were 75. These questionnaires were self-administered to employees of commercial banks in Kenya. A total of 70 questionnaires were returned properly completed (Table 4.1). This represented an overall response rate of 93.3% (Table 4.1). According to Kothari (2007), a response rate of 50% is acceptable to analyse and publish, 60% is good, 70% is very good and beyond 80% is an excellent response rate.

4.2 Descriptive Analysis of study variables

4.2.1 Descriptive Analysis for Study on impact of climate change strategy on banking performance in Kenya

The first objective of the study sought to examine the impact of climate change strategy on banking performance in Kenya. To achieve this, the respondents were required to give their rating on a five point Likert scale. Since the data was in ordinal scale percentage was used to summarize the responses as shown in Table 4.16. 68.4% of the respondents agreed that they are familiar with climate change strategies among the staffs, 22.5% strongly agreed. With a mean score of 1.9 and standard deviation of 0.6, it can be concluded that the majority of the banks do practice climate change strategies among the staffs.

A value, 27.2% of the respondents agreed that Depth knowledge on source of climate change caused by projects funded by commercial banks and 13% of the respondents strongly agreed on the same. This makes 40% of the respondents cumulatively in an agreement that commercial banks has depth knowledge on source of climate change caused by projects funded by commercial them. With a mean score of 3.2 and standard deviation of 1.4, the study concluded that the majority of the respondents agreed that commercial banks has depth knowledge on source of climate change caused by projects funded by commercial them.



Thirdly, 47.8% disagreed that the current climate change strategies adopted by banks has been caused natural and human factors. This has also been confirmed by a value of 3.2 and 1.2 for both the mean score and standard deviation respectively.

A fraction of 41.1% agreed that Human activities are entirely to blame for the current climate change, 26.9% strongly agreed on the same. The study therefore concluded that the majority of the respondents are in an agreement that Human activities funded by commercial banks are entirely to blame for the current climate change. This has been corroborated by the mean score of 2.3 and 1.1 standard deviation. These results are consistent with other studies for example, Olivier Boiral (2018) on the study of climate change and business strategy reported a positive relationship.

The Cronbach Alpha Reliability Coefficient for these six items that were used to measure the impact of climate change strategy on banking performance in Kenya was 0.701. That the reliability coefficient for these items was 0.70 indicates internal consistencies of the items that were used to indicate the direction of this variable in respect to the research objectives. The descriptive statistics are shown in Table 4.6

Table 4.2: Descriptive Analysis for Study on impact of climate change strategy on banking performance in Kenya

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	SD
I am familiar with climate change strategies among the banking staffs.	22.2	68.4	7	2.5	0.0	1.9	0.6
Depth knowledge on source of climate change caused by projects funded by commercial banks.	13	27.2	9.5	24.1	26.3	3.2	1.4
Current climate change strategies adopted by banks has been caused natural and human factors.	11.4	18	14.2	47.8	8.5	3.2	1.2
Human activities are entirely to blame for the current climate change.	26.9	41.1	11.1	18	2.8	2.3	1.1

4.2.1. 2Climate change risks affecting climate affecting banks

It was established that most (40%) of the banks are at credit risk due to climate change. This was followed by market risks with 18.3% and the credit risk at 16%. The credit risk are as a result of mainly by inability of debtors to honor their loan payment obligation due to weather or climate phenomena generated by on-going climate changes. According to world risk report 2018, credit risk accounts to 20% of total exposure, Market risks are due to change client s preferences, shifts in supply and demand of certain commodities and products. while the physical risk are events driven eg lack of water, Extreme temperatures all affecting banks organization (Task force on cliamte-related financial disclosures Report 2017)

Table 4.3: Climate change risks affecting banks

Risk	Frequency	Percentage
Physical risks	10	16.7
Litigation and regulatory risk	6	10
Market risk	11	18.3
Credit risks	24	40
Financial risks	9	15



Total	60	100
--------------	-----------	------------

4.2.2.1 Commercial banks perceptions towards climate change risks

The study also sort to understand the how banks staffs perceived the risked paused by Climate change, Specifically if the climate change risk are a major or minor risks, It was established only 33% had opinion that climate change is major risk with 32% with the opinion that climate change risk are average risks, This makes a total 65% and commercial banks being risk averse intuitions we can conclude climate change risk of concern. The results have been tabulated in table 4.8

Table 4.4: Commercial banks perceptions towards climate change risks

	N	%
Major risk	20	33
Average risk	19	32
Minor risk	11	18
Unsure of risk	10	17
Total	60	100%

4.2.2 Descriptive Analysis for Study on impact of Corporate governance practices in terms of climate change on banking performance in Kenya

The second objective of the study sought to establish the impact of Corporate governance practices in terms of climate change on banking performance in Kenya. Percentages, mean score and standard deviation were used to summarize the findings as summarized in Table 4. . 56.3% agreed that they are familiar with Corporate governance practices in terms of climate change in their business, 38% strongly agreed on their familiarity with Corporate governance practices in terms of climate change in their business, 5.7% were neutral that is to say that they were not sure whether they were familiar with Corporate governance practices in terms of climate change in their business or not while none of the respondents neither disagreed nor strongly disagreed with this fact. With a mean score of 1.7 and standard deviation of 0.6, the study can conclude therefore that the majority of the respondents were familiar with the Corporate governance practices in terms of climate change.

On the other hand, 16.5% of the respondents strongly agreed that Continuous research on environmental and climate change training have impact on banking services, 47.2% agreed on the same while 15.5% were not sure of the same. Cumulative figure of 20.8% disagreed that Continuous research on environmental and climate change training have impact on banking services. With the mean score of 2.4 and standard deviation of 1.1, the study can thus conclude that the majority (63.7%) agreed that that Continuous research on environmental and climate change training helps their organisations improve on the performance in the long run.

The third item that was also analysed was whether the reconfiguration of internal and external operations helps the company to use resources wisely in terms of safeguarding climate change in the pursuit of company goals. In this case, 38.9% of the respondents agreed that reconfiguration of internal and external operations helps the company to use resources wisely in terms of safeguarding climate change in the pursuit of company goals, 24.4% agreed, 36.7% neither agreed nor disagreed on the role of internal and external reconfiguration and none of the respondents disagreed on the same. Having scored a mean of 2.1 and a standard deviation of 0.8, the study can indicate that the majority of the respondents (63.3%) agreed that reconfiguration of internal and external operations helps the company to use resources wisely in terms of safeguarding climate change in the pursuit of company goals.

The fourth item on whether the Banks adopt energy saving strategies in operation. On this item however, 21.8% of the respondents strongly agreed with this fact, 34.8% agreed, 30.4% neither agreed nor disagreed, and 13% disagreed. This item of the study achieved a mean of 2.3 and standard deviation of

1.0. This result therefore indicates that the majority (56.6%) of the respondents agreed that Banks adopt energy saving strategies in operation.

The fifth item was on whether they assessment of a client's environmental record before give out loans where 10.8% and 60.1% of the respondents strongly agreed and agreed respectively that they assessment of a client's environmental record before give out loans, 19% neither agreed nor disagreed, 10.1% disagreed on the same. This item sored a mean of 2.3 and 0.8 as a standard deviation. With these results, the majority of the respondents (70.9%) agreed that Bank do assessment of a client's environmental record before give out loans.

Lastly, the sixth item looked at the Regular environmental and climate change audit are conducted yearly where 4.1% strongly agreed and 30.4% agreed that Regular environmental and climate change audit are conducted yearly. 31% neither agreed nor disagreed and 34.5% cumulatively disagreed that this is the fact. With a mean of 3.0 and a standard deviation of 1.0, the study can indicate that this item is needed to be conduct Regular environmental and climate change audit yearly. The descriptive statistics are shown in Table 4.10.

Table 4.10: Descriptive Analysis for Study on impact of corporate governance practices in terms of climate change on banking performance in Kenya

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	SD
I am familiar with Corporate governance practices in terms of climate change in their business,	38.0	56.3	5.7	0.0	0.0	1.7	0.6
Continuous research on environmental and climate change training have impact on banking services	16.5	47.2	15.5	18	2.8	2.4	1.1
Reconfiguration of internal and external operations helps the company to use resources wisely in terms of safeguarding climate change in the pursuit of company goals.	24.4	38.9	36.7	0.0	0.0	2.1	0.8
Banks adopt energy saving strategies in operation	21.8	34.8	30.4	13.0	0.0	2.3	1.0
Banks do assessment of a client's environmental record before give out loans	10.8	60.1	19.0	10.0	0.0	2.3	0.8
Regular environmental and climate change audit are conducted yearly	4.1	30.4	31.0	27.2	7.3	3.0	1.0

4.2.3 Descriptive Analysis of the impact of the climate change disclosure on banking performance in Kenya

The third objective of the study sought to establish the impact of the climate change disclosure on banking performance in Kenya. Results of the study were summarized as in table 4. . 60.8% of the respondents agreed that they were familiar with climate change disclosure practices in their business followed by 35.1% who strongly agreed. 2.8% neither agreed nor disagreed on the same. This first item of the study variable scored a mean of 1.7 and a standard deviation of 0.6. Cumulatively, 95.9% of the respondents were familiar with climate change disclosure practices in their business. These results

therefore indicate that the majority of the respondents are familiar with climate change disclosure practices in their business.

In addition, 47.2% of the respondents agreed that climate change disclosure practices has improved performance of their business followed by 42% who strongly agreed. 9.4% neither agreed nor disagreed on this item of the study while 1.3% disagreed on this fact. Having achieved a mean score of 1.7 and a standard deviation of 0.7, the study can conclude therefore that the majority (89.2%) of the respondents agreed that climate change disclosure practices has improved performance of their business. 38.3% respondents agreed that they have caution when dealing with climate change issues especially in projects similarly 30.7% strongly agreed. 31% of the respondents neither agreed nor disagreed while none of the respondents disagreed to this item. With a mean score of 2.0 and standard deviation of 0.8, the study can indicate that the majority (69.0%) of the respondents were in an agreement that they have caution when dealing with climate change issues especially in projects.

The fourth item that was tested was on whether there is carbon exposure evaluation before banks gives out loans to financing project. Here, 54.4% of respondents agreed that there is carbon exposure evaluation before banks gives out loans to financing project similarly 43% strongly agreed, 2.5% neither agreed nor disagreed while none of the respondents refuted this fact. These results therefore indicate that the majority of the respondents (97.4%) agreed that there is carbon exposure evaluation before banks gives out loans to financing project with a mean score of 1.6 and a standard deviation of 0.5.

The fifth item focused on the presence of pricing carbon credits where 67.1% agreed that there is presence of pricing carbon credits and 5.7% strongly agreed on this fact, 24.4% neither agreed nor disagreed while 2.8% of the respondents disagreed. Looking at the result of the study, the majority agreed to the fact that there is presence of pricing carbon credits scoring a mean of 2.2 and a standard deviation of 0.6. The sixth item in this category was on Costing climate change issues where 68.7% agreed that Banks are able to do Costing climate change issues, 26.3% strongly agreed, 5.1% neither agreed nor disagreed while none of the respondents disagreed. With a mean score of 1.8 and a standard deviation of 0.5, the study can indicate that the majority of the respondents agreed that Banks are able to do Costing climate change issues. The result in different departments have been discussed below

Table 4.11: Descriptive Analysis of the impact of the climate change disclosure on banking performance in Kenya

Statements	SA	A	N	D	SD	Mean	SD
I am familiar with climate change disclosure practices in their business	35.1	60.8	2.8	1.3	0.0	1.7	0.6
The climate change disclosure practices has improved performance of their business	42.0	47.2	9.4	1.3	0.0	1.7	0.7
The caution when dealing with climate change issues especially in projects	30.7	38.3	31	0.0	0.0	2.0	0.8
There is carbon exposure evaluation before banks gives out loans to financing project.	43.0	54.4	2.5	0.0	0.0	1.6	0.5
The presence of pricing carbon credits	5.7	67.1	24.4	2.8	0.0	2.2	0.6
Banks are able to do Costing climate change issues	26.3	68.7	51	0.0	0.0	1.8	0.5

4.2.4 Descriptive Analysis of the impact of climate change policy on banking performance in Kenya

The fourth objective of the study sought to determine the impact of climate change policy on banking performance in Kenya. Percentages, mean and standard deviation were used to summarize the findings as shown in Table 4.28. 41.1% of respondents agreed that they are familiar with climate change policy in

their banking industry, 26.3% strongly agreed, 24.1% neither agreed nor disagreed on the same while 8.5% disagreed. With these results and a mean score of 2.2 and a standard deviation of 0.9, the study can authoritatively indicate that the majority of the respondents are familiar with the familiar with climate change policy in their banking industry.

Secondly, 28.7% disagreed that neglect of climate change policy can be a major source of failure/loss in their banking industry and 27% strongly agreed that it can contribute to company failure, 16.9% agreed while 27.4% were neutral. This item achieved a mean score of 2.6 and a standard deviation of 1.2. Cumulatively therefore, majority of the respondents (56.1%) did not know what this item was and also disagreed that neglect of climate change policy can be a major source of failure/loss in their banking industry.

Thirdly, 75.9% of the respondents agreed that Good climate change policies has been proven to be truly inspiring and describes a desirable future state for their banking systems, 13.6% strongly agreed it is inspiring. This item scored a mean of 2.0 and a standard deviation of 0.5. It is therefore evident enough that the majority of the respondents agreed to the fact that Good climate change policies has been proven to be truly inspiring and describes a desirable future state for their banking systems. 65.8% agreed that well-chosen climate change policies can help their company decrease production cost and increase profitability while 31.6% strongly agreed to this fact. Having achieved a mean score of 1.7 and a standard deviation of 0.5, majority of the respondents are in an agreement that well-chosen climate change policies can help their company decrease production cost and increase profitability. A fraction of 57.9% and 37% of the respondents agreed and strongly agreed respectively that as the Climate change policies becomes visible to customers, the reputation of their company is enhanced and the likelihood of being viewed as a market leader increases. 5.1% neither agreed nor disagreed and this item attracted none of the opposition view from the respondents. This is a clear indication that the majority of the respondents agreed that as the Climate change policies becomes visible to customers, the reputation of their company is enhanced and the likelihood of being viewed as a market leader increases.

Table 4:12 Descriptive Analysis of the impact of climate change policy on banking performance in Kenya

Statements	SA	A	N	D	SD	Mean	STD
I am familiar with climate change policy in their banking industry.	26.3	41.1	24.1	8.5	0.0	2.2	0.9
Neglect of climate change policy can be a major source of failure/loss in their banking industry	27.0	16.9	27.4	28.7	0.0	2.6	1.2
Good climate change policies has been proven to be truly inspiring and describes a desirable future state for their banking systems	13.6	75.9	10.4	0.0	0.0	2.0	0.5
Climate change policies can help their company decrease production cost and increase profitability	31.6	65.8	2.6	0.0	0.0	1.7	0.5
Climate change policies becomes visible to customers, the reputation of their company is enhanced and the likelihood of being viewed as a market leader	37.0	57.9	5.1	0.0	0.0	1.7	0.6

4.3 Inferential Analysis

4.3.1 Correlation Analysis

The study sought to establish the strength of the relationship between climate change strategy, corporate governance, climate change disclosure, and climate change policy and banking performance in Kenya. To achieve this, Pearson's correlation was carried out since both independent and dependent variables are in

ratio scale. According to Kothari (2004), product moment correlation should be carried out if and only if both dependent and independent variables are in either ratio or interval scale. If the correlation coefficient is -1 then there is an inverse relationship and an increase in dependent variable is associated with a decrease in independent variable and +1 there is a perfect positive significant relationship and an increase in dependent variable is associated with an increase in independent variable (Kothari, 2011; Oso & Onen, 2009).

The study findings depicted in Table 4.20 indicated that there was a significant positive impact of climate change strategy on banking performance in Kenya ($\rho=0.6530$, p -value <0.05). This implies that a unit change in climate change strategy increases banking performance by 65.3%. Secondly there was a positive and significant impact of Corporate governance in terms of climate change on banking performance in Kenya ($\rho =0.608$, P value <0.05). This implies that a unit change in Corporate governance in terms of climate change increases banking performance by 60.8%. Thirdly, there was a positive and significant impact of Corporate governance in terms of climate change on banking performance in Kenya ($\rho = 0.514$, p value <0.05).

This implies that a unit change in Corporate governance in terms of climate change increases bank performance by 51.4%. Finally, there was a positive and significant the impact of climate change policy on banking performance in Kenya ($\rho = 0.521$, p value <0.05). This implies that a unit change in climate change policy increases banking performance by 52.1%.

Table 4.14 Correlation Analysis

	Bank Performance	climate change strategy	corporate governance	climate change disclosure	climate change policy
Bank Performance	1				
Climate Change Strategy	.653**	1			
Corporate Governance	.608**	0.441	1		
Climate Change Disclosure	.514**	0.403	-0.508	1	
Climate Change Policy	.521**	0.303	0.305	0.280	1

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

Results in Table 4.14 shows that there was no variable which was omitted in the model because the p value was less than 0.05. Therefore, we could not reject the null hypothesis.

4.3.2. Analysis of the Overall Model

In this section the findings are discussed focusing on the main objectives of this study which sought to determine the impact of climate change on banking performance in Kenya. To achieve this, four climate change strategy, corporate governance, climate change disclosure, and climate change policy against the banking performance in Kenya. Overall, it was found that climate change had a significant positive impact on bank performance measures thereby rejecting the null hypothesis that was tested that is, Climate change have no significant impact on the bank performance. To prove this a multiple linear regression model was adopted for testing the significance of the impact of the independent variables on the dependent variable. Therefore, the overall model for the study was: -

$$BP = \beta_0 + \beta_1 (\text{climate change strategy}) + \beta_2 (\text{corporate governance}) + \beta_3 (\text{climate change disclosure}) + \beta_4 (\text{climate change policy}) + \varepsilon$$

Inferential Analysis of the Overall Model

Sekaran (2003) argued that if the study seeks to analyse the data beyond means and standard deviations for example if there is need to examine the relationship between variables then bivariate analysis such as correlation and regression analysis are the most appropriate. Thus, the researcher applied Pearson correlation analysis to examine the strength of the impact of climate change on bank performance. Moreover, regression analysis was used to examine the nature of the impact as well as test the hypothesis

of the study. The level of significance was tested at 5% and according to Oso and Onen (2009) with this significance level then the researcher has 95% chances of making the correct decision that there exists a significant impact of independent on dependent variable.

The overall model shows that 66.3% of the variation in bank performance can be jointly explained by climate change strategy, corporate governance, climate change disclosure, and climate change policy jointly. The remaining percentage can be explained by other factors which are excluded from the model. Summary is as shown in Table 4.28.

Table 4.28 Model Summary for the Overall Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
5	.814a	0.663	0.639	0.845	2.259

a Predictors: (Constant), climate change strategy, corporate governance, climate change disclosure, and climate change policy

b Dependent Variable: Banking performance

The ANOVA results in Table 4.28 shows that climate change strategy, corporate governance, climate change disclosure, and climate change policy all jointly have a significant impact on Banking performance, and at least one of the slope coefficient is none zero.

Table 4.29 ANOVA for the Overall Model

Model	Sum of Squares	Df	Mean Square	F	Sig.
5 Regression	905.087	4	226.272	5.933	.000b
Residual	2516.922	66	38.135		
Total	3422.009	70			

a Predictors: (Constant), climate change strategy, corporate governance, climate change disclosure, and climate change policy

b Dependent Variable: Banking performance

Results in Table 4.36 shows that there was a positive and significant impact on climate change strategy on the bank performance ($\beta = 1.06$, p value <0.05). This implies that a unit change in climate change strategy increases banking performance by 1.02 units. Secondly, there was a positive and significant impact on corporate governance on the bank performance ($\beta = 1.06$, p value <0.05). This implies that a unit change in corporate governance increases banking performance by 1.06 units. Thirdly, there was a positive and significant impact on climate change disclosure on the bank performance ($\beta = 0.41$, p value <0.05). This implies that a unit change in climate change disclosure increases bank performance by 0.41 units. Finally, there was a positive and significant impact on climate change policy on the bank performance ($\beta = 0.71$, p-value < 0.05). This implies that a unit change in climate change policy increases the bank performance by 0.71 units

Table 4.30 Regression Coefficients for the Overall Model

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
5(Constant)	4.87	0.16		30.39	0.00
Climate Change Strategy	1.06	0.16	0.32	6.60	0.00
Corporate Governance,	1.02	0.16	0.31	6.35	0.00
Climate Change Disclosure	0.41	0.16	0.11	2.28	0.01
Climate Change Policy	0.71	0.16	0.22	4.42	0.00

a. Dependent Variable: bank performance

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of Findings

The current study stemmed from the realization of the research problem in literature the impact of climate change on banking performance in Kitui County, Kenya. Empirically most of the studies on the impact of climate change have been skewed towards use of primary data and only specific impact of climate change and viability had been evaluated. Among the several studies which had been done in the Kenyan perspective majority have not examined the causal joint effect of climate change and viability on the food security in Kajiado County.

Consequently, the researcher's primary purpose was to examine the impact of climate change on banking performance in Kitui County, Kenya. Further, the study sought to test four hypotheses; Climate change strategy has no significant positive impact on banking performance in Kenya, Corporate Governance in terms of climate change has no significant positive impact on banking performance in Kenya, Climate change disclosure has no significant positive impact on banking performance in Kenya and Climate change policy has positive impact on banking performance in Kenya.

In order to meet the overall objective and test the study hypotheses the study adopted descriptive research design. Stratified sampling technique was used to select a sample of 75 employees of the commercial banks in Kitui County, Kenya. Primary data was collected from employees of the commercial banks in Kitui County and out of 75 questionnaires which were issued only 70 were completely filled and returned which yielded a response rate of 93.3%. The independent variables attributed examined in the study were climate change strategy, corporate governance, climate change disclosure, and climate change policy in Kenya. Descriptive analysis such as frequency, percentage, mean and standard deviation were used to analyze the data which was summarized using figures and tables. Correlation analysis was used to examine the strength of the impact of climate change on banking performance in Kitui County, Kenya. and regression analysis was used to examine the nature of the the impact of climate change on banking performance in Kitui County, Kenya. On overall 66.3% of the variation in bank performance can be explained by climate change strategy, corporate governance, climate change disclosure, and climate change policy in Kenya while the remaining percentage can be explained by other factors excluded in the model. The findings of the study demonstrated that how climate change have impact on banks performance.

5.2 Conclusion

This section presents the conclusions made in the current study. Research objective one in this study was to find out the impact of climate change strategy on banking performance in Kenya. The indicators for bank performance in this case were number of products, market share, number of employees, profitability, annual running expenditure, and number of customers. It was therefore concluded that there was a positive and significant impact of climate change strategy on banking performance in Kenya.

Research objective two in this study was to find out the impact of Corporate governance in terms of climate change on bank performance in Kenya. The indicators for bank performance in this case were number of products, market share, number of employees, profitability, annual running expenditure, and number of customers. It was therefore concluded that there was a positive and significant impact of Corporate governance in terms of climate change on banking performance in Kenya.

Research objective third in this study was to find out the impact of climate change disclosure on bank performance in Kenya. The indicators for bank performance in this case were number of products, market share, number of employees, profitability, annual running expenditure, and number of customers. It was therefore concluded that there was a positive and significant impact of climate change disclosure on banking performance in Kenya.

Research objective fourth in this study was to assess the impact of climate change policy on banking performance in Kenya. The indicators for bank performance in this case were number of products, market



share, number of employees, profitability, annual running expenditure, and number of customers. It was therefore concluded that there was a positive and significant impact of climate change policy on banking performance in Kenya.

5.3 Recommendations

Based on the findings of this study, it was recommended that; The members of the public should be encouraged to develop more climate change policy and practice them since climate change is threat to their business. The bank regulator need to come up with carbon reporting and exposure calculation method and policy, this is to help banks calculate and report there Carbon foot prints and exposure. This practice is gaining momentum world wide. The government to put in place banking policies requiring all commercial banks to come up with climate change mitigation and offset strategies.

5.4 Suggestion for further research

From the findings, the R^2 was 66.3% which means that the independent variables (climate change strategy, corporate governance, climate change disclosure, and climate change policy jointly) explained bank performance to an extent of 66.3%. There are other factors which are not captured by the proposed model in this study which are captured by 33.7% which is not explained. Another study can be carried out to determine other factors explaining 33.7% of bank performance in view of the study context and scope. This study analyzed the contribution of an analysis of Kenya commercial banks' responses to climate change, case of commercial banks in Kitui town. Further research can be done in other counties to ascertain whether the results are in line so as to come up with a solution. Also more research can be done if the commercial banks climate change and environmental policies are effective to respond to climate change.

References

- [1]. Abram, N. J., McGregor, H. V., Tierney, J. E., Evans, M. N., McKay, N. P., Kaufman, D. S., ... & Steig, E. J. (2016). Early onset of industrial-era warming across the oceans and continents. *Nature*, 536(7617), 411-418.
- [2]. Bahl Sarita, (2012) "The role of green banking in sustainable growth", International Journal of marketing, Financial Services and Management Research, Vol.1 No. 2, February 2012, ISSN 2277 3622, Online Available at indianresearchjournals.com
- [3]. Barasa, S. W. (2018). *Institute for climate change and adaptation* (Doctoral dissertation, University of Nairobi).
- [4]. Bhar, R. (2015). Commodity export prices and exchange rate: An Australian perspective. *International Journal of Economics and Finance*, 7(1), 1-13.
- [5]. Bowman, M. (2010). The role of the banking industry in facilitating climate change mitigation and the transition to a low-carbon global economy. *Environment and Planning Law Journal*, 27, 448.
- [6]. Centre for Environmental Research & Education. (2014, 03 06). Home: Centre for Environmental Research & Education. Retrieved from Centre for Environmental Research & Education: <http://www.cere-india.org/>
- [7]. Charles, M., & Benson Ochieng, S. (2023). Strategic Outsourcing and Firm Performance: A Review of Literature. *International Journal of Social Science and Humanities Research (IJSSHR) ISSN 2959-7056 (o); 2959-7048 (p)*, 1(1), 20–29. <https://doi.org/10.61108/ijsshr.v1i1.5>
- [8]. Cogan, D. G. (2008). Corporate governance and climate change: The banking sector.
- [9]. Demaria, S., & Rigot, S. (2018). *Environmental Reporting Practices: Are CAC 40 firms compliant with the recommendations of the Task Force on Climate-related Financial Disclosures?* (No. halshs-01959064).
- [10]. Demertzidis, N., Tsalis, T. A., Loupa, G., & Nikolaou, I. E. (2015). A benchmarking framework to evaluate business climate change risks: A practical tool suitable for investors decision-making process. *Climate Risk Management*, 10, 95-105.
- [11]. Financial times 2018. Counties face higher debts bills due to climate risk
- [12]. Financing Climate Change : Carbon Risk in the Banking Sector Executive Summary." n.d., no. 617
- [13]. Furrer, B. (2010). *Corporate climate strategies and their determinants: an analysis of banks' responses to climate change* (Doctoral dissertation, ETH Zurich).

- [14]. Furrer, B., Hoffmann, V., & Swoboda, M. (2009). Banking & Climate Change: Opportunities and Risks. *An Analysis of Climate Strategies in more than, 100*.
- [15]. Garbuzova, M., & Madlener, R. (2012). Towards an efficient and low carbon economy post-2012: opportunities and barriers for foreign companies in the Russian energy market. *Mitigation and adaptation strategies for global change, 17(4)*, 387-413.
- [16]. Georgopoulou, E., Mirasgedis, S., Sarafidis, Y., Hontou, V., Gakis, N., Lalas, D., ... & Zavras, V. (2015). A methodological framework and tool for assessing the climate change related risks in the banking sector. *Journal of Environmental Planning and Management, 58(5)*, 874-897.
- [17]. Gichira, P. S., Agwata, J. F., & Muigua, K. D. (2014). Climate Finance: Fears and Hopes for Developing Countries. *JL Pol'y & Globalization, 22*, 1.
- [18]. Gifford, R. (2011). The dragons of inaction: psychological barriers that limit climate change mitigation and adaptation. *American psychologist, 66(4)*, 290.
- [19]. Kireia, E. M., & Omwenga, D. J. Q. (2023). Determinants of Waste Management Programmes on Sustainable Environmental Conservation in Mukuru Slums in Kenya. *International Journal of Social Science and Humanities Research (IJSSHR) ISSN 2959-7056 (o); 2959-7048 (p), 1(1)*, 137–150. <https://doi.org/10.61108/ijsshr.v1i1.18>
- [20]. Kumar Dash Saroj et al (2013) "Service Quality Measurement and its evaluation of leading Private Banks of India in Delhi and NCR Region". An analytical study International Journal of Contemporary Business Studies, Vol: 4, No: 1. January, 2013 ISSN 2156-7506, Available online at <http://www.akpinsight.webs.com>
- [21]. Lamboll, R., Nelson, V., & Nathaniels, N. (2011). Emerging approaches for responding to climate change in African agricultural advisory services: Challenges, opportunities and recommendations for an AFAAS climate change response strategy. *AFAAS, Kampala, Uganda and FARA, Accra, Ghana, 160*.
- [22]. Ms. Neetu Sharma et al (2015) "A study on customer's awareness on Green Banking initiatives in selected public and private sector banks with special reference to Mumbai" PP 28-35, n.d
- [23]. Nachmany, M., & Setzer, J. (2018). Policy brief Global trends in climate change legislation and litigation: 2018 snapshot. *Grantham Research Institute on Climate Change and the Environment*.
- [24]. Nath, V., Nayak, N., & Goel, A. (2014). Green banking practices—A review. *IMPACT: International Journal of Research in Business Management (IMPACT: IJRBM) Vol, 2*, 45-62.
- [25]. National Environment Policy Act. (2014, 03 06). EPA Home: <http://www.epa.gov/compliance/basics/nepa.html#oversight>
- [26]. Nauclicr, T., & Enkvist, P. A. (2009). Pathways to a low-carbon economy: Version 2 of the global greenhouse gas abatement cost curve. *McKinsey & Company, 192(3)*.
- [27]. Norrington-Davies, G., & Thornton, N. (2011). Climate change financing and aid effectiveness: Kenya case study. *no. March*.
- [28]. O'Brien, K., & Sygna, L. (2013). Responding to climate change: the three spheres of transformation. *Proceedings of transformation in a changing climate, 19-21*.
- [29]. Omuko, L. A. (2015). Financing Climate Change Adaptation in Kenya. *Available at SSRN 2599283*.
- [30]. Quarterly, M. (2007). How companies think about climate change: A McKinsey Global Survey. *McKinsey Quarterly, December*.
- [31]. Reckien, D., Flacke, J., Dawson, R. J., Heidrich, O., Olazabal, M., Foley, A., ... & Geneletti, D. (2014). Climate change response in Europe: what's the reality? Analysis of adaptation and mitigation plans from 200 urban areas in 11 countries. *Climatic change, 122(1-2)*, 331-340.
- [32]. Schücking, H., Kroll, L., Louvel, Y., & Richter, R. (2011). Bankrolling climate change—a look into the portfolios of the world's largest banks. *Technical Reporturgewald, GroundWork, Earthlife Africa Johannesburg, BankTrack, Nijmegen, The Netherlands*.
- [33]. Shakil, M. H., Azam, M. K. G., & Raju, M. S. H. (2014). An evaluation of green banking practices in Bangladesh. *European Journal of Business and Management, 6(31)*, 8-16.
- [34]. SM Mahfuzur, R., & Barua, S. (2016). The design and adoption of green banking framework for environment protection: Lessons from Bangladesh. *Rahman, SMM, & Barua, S.(2016). The design and adoption of green banking framework for environment protection: lessons from Bangladesh. Australian Journal of Sustainable Business and Society, 2(1)*, 1-19.
- [35]. Stockholm Environment Institute. 2009. "Economics of Climate Change Kenya" xlv (18): 82. doi:doi:10.1201/b16969-7.

- [36]. Sustainable, The, and Development Goals. 2016. "The Sustainable Development Goals Report."
- [37]. Unit, E. I. (2015). The cost of inaction: recognizing the value at risk from climate change. London: The Business Intelligence Unit. *The Economist*. <http://www.economistinsights.com/financialservices/analysis/cost-inaction>. Accessed October, 18, 2015.
- [38]. Vijai, C. (2018). A Study on Customer's Awareness on Green Banking Initiatives in Selected Public and Private Sector Banks with Special Reference To Cuddalore District. *International Journal of Innovative Research in Science, Engineering and Technology*, 7(11), 9362-9367.
- [39]. Vikas Nath et al (2014) "Green Banking Practices – A Review", Vol. 2, Issue 4, April 2014
- [40]. Yanda, P., Mushi, D., Henku, A. I., Maganga, F., Minde, H., Malik, N., ... & Tilley, H. (2013). Tanzania national climate change finance analysis. *London: Overseas Development Institute, and the Centre for Climate Change Studies, University of Dar es Salaam*

