

**THE RELATIONSHIP BETWEEN GREEN BANKING AND FINANCIAL  
PERFORMANCE OF COMMERCIAL BANKS IN KENYA**

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## **DECLARATION**

I, the undersigned, declare that this research project is my original work and that it has not been presented in any other university or institution for academic purposes.

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Signature. .... Date. ....

The research project has been submitted for examination with my approval as the University Supervisor.

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## **DEDICATION**

I dedicate this research project to God Almighty for giving me the strength to do this project and my family, most importantly my son Ben Andre Nyagah Nyuri.

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## **LIST OF ABBREVIATIONS**

<b>ABN AMRO N.V</b>	Algemene Bank Nederland Amsterdamsche and Rotterdamsche Bank
<b>CBK</b>	Central Bank of Kenya
<b>CSR</b>	Corporate Social Responsibility
<b>EP</b>	Equator Principles
<b>HVB</b>	HypoVereins Bank
<b>ISO</b>	International Organization for Standardization
<b>IT</b>	Information Technology
<b>KSH</b>	Kenya Shilling
<b>NEMA</b>	National Environmental Management Authority
<b>NGOs</b>	Non Governmental Organizations
<b>PIN</b>	Personal Identification Number
<b>ROI</b>	Return on Investment
<b>RTGS</b>	Real Time Gross Settlement
<b>SPSS</b>	Statistical Package for Social Sciences
<b>TT</b>	Telegraphic Transfer
<b>UNEP-FI</b>	United Nations Environmental Programs- Financial Initiatives
<b>USD</b>	United States Dollar
<b>WestLB AG</b>	Westdeutsche Landesbank
<b>WWF</b>	World Wide Fund



## ABSTRACT

For a very long time banks have operated without considering how their operations affect the environment. Recently there has been an emergence of a new concept in banking called green banking which is basically promoting environmentally friendly practices and reducing carbon footprints from banking activities. The implementation of green banking has been a challenge to so many commercial banks as they fear that it will increase their expenses and disrupt their normal operations. In this light the researcher has decided to establish whether there is a relationship between green banking and financial performance of commercial banks in Kenya. The researcher used secondary data from Central Bank of Kenya, Communications Authority of Kenya and Kenya National Bureau of Statistics. The target population was all the 43 commercial banks in Kenya, making the study a census. Secondary data was used in the study relating to financial performance and green banking initiatives of the commercial banks in Kenya for the period between 1st January 2011 and 31st December 2013. The data was collected from the annual reports of Central Bank of Kenya and also those of Communications Authority of Kenya. The data/information collected was used to study the variables. The research design used was descriptive. In order to establish whether there was a relationship between green banking and financial performance, the researcher used two green banking initiatives: mobile banking and online banking. Data was analyzed using regression analysis. The researcher also assessed the capital adequacy and liquidity of all commercial banks in Kenya to establish whether there was truly a relationship between green banking and financial performance. The financial performance measure used in the study was the aggregate profit before tax of all Kenyan commercial banks. Tables were used to present the data, while SPSS computer software aided in the analysis. The findings of the study were that there is a significant relationship between green banking and financial performance of commercial banks in Kenya. The findings also show that the two independent variables studied, explain 100% of the changes in the financial performance of commercial banks in Kenya as represented by  $R^2$ . The study found significance level was 0.001 and therefore there is a very significant relationship between green banking and financial performance of commercial banks in Kenya. Hence the linear regression is very significant in predicting how green banking affects financial performance of commercial banks in Kenya. The correlation coefficient of the study was 1; this means that there is a perfect positive relationship between financial performance and green banking. This also means that an increase in mobile banking and internet banking will lead to an increase in financial performance. The study makes the following recommendations: banks should increase awareness and CSR activities to sensitize both internal and external customers. CBK and other agencies should promote more publicity on the relationship between the banks and the environmental concerns that are related to financing policies. Finally the government could use this study to formulate friendly policy on environment conservation which the banks should adopt. There is a need to establish the effect of green banking in the economy, cost savings and risk management.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

The disastrous impact of recent storms, floods, droughts and excessive heat that many people have experienced around the world, motivate us to think seriously about global warming and its impact and to do whatever we can to address this problem. Governments, enterprises, and people, all have roles to play in combating global warming and building a sustainable environment. A good thing is that there is now greater awareness and a growing commitment to address environmental problems we face. An action to arrest environmental degradation would significantly affect not only current but also future generations and our further progress. So, a proactive multipronged action is necessary by all the industry and business sectors, regulatory agencies and the individuals (IDRBT publication, 2013).

What can, and should, Banking sector do in creating a greener and sustainable environment? What can each person in the banking sector do individually and collectively to address global warming and create a sustainable environment? Internationally, there are several initiatives to create a common protocol to manage environmental concerns. Among them the United Nations Environment Program Finance Initiative (UNEP FI) and the Equator Principles (EPs) are the two key initiatives. The United Nations Environment Program Finance Initiative (UNEP FI) seeks to encourage better implementation of sustainability principles at all levels of operations in financial institutions, namely through the incorporation of environmental, social, and governance factors in risk analysis. This initiative is a public-private partnership established between

the United Nations Environment Program (UNEP) and the financial sector. It works closely with over 200 members including leading banks, investment funds, and insurance companies to develop and promote linkages between sustainability and financial performance (IDRBT publication, 2013).

All over the world, banks and financial institutions are concerned about the overall impact of depletion of environment. General frameworks describing corporate climate strategies are difficult to transfer to the banking sector. Such frameworks usually focus on basic industries, examining the dependency of companies on fossil fuels and exploring the effects of extreme weather events and regulation on corporations. However, banks are not generally exposed to weather stresses nor are they heavily dependent on fossil fuels in their operations. Indeed, the main impact of climate change on banks is indirect: they are affected to the extent that their clients' activities and economic activities in general are constrained (IDRBT publication, 2013).

The key issue for banks will be assessing the impact of climate change on the asset quality of lending and investment portfolios. This will influence financing and investment policies as well as portfolio management. This will help them to develop a business model which is sustainable and adaptable to their environment policies. While many banks understand the significance of emission reduction, only very few have comprehensively integrated climate change-related aspects into their business processes. Besides this, internally, in their day-to-day operations also banks are devising strategies to make their systems and processes environment-friendly (IDRBT publication, 2013).

Green Banking is comparatively a new development in the financial world. It is a form of banking taking into account the social and environmental impacts and its main motive is to protect and preserve environment. Foreign banks are practicing green banking on a much serious note. Some of the foreign banks have introduced a formal Environmental and Social (E&S) risk policy to govern lending activities way back in 1997. They are also signatory to the Equator Principles (EP), and moved ahead in building on bank's work to measure social and economic impact of lending, reduce annual paper consumption of full-time employees and continue to reduce energy and water consumption, etc (IDRBT publication, 2013).

In the recent years, the international organization for standardization (ISO) has issued series of comprehensive guidelines for incorporating environmental protection and pollution prevention objectives into industrial activity worldwide, known collectively as ISO 14000 and it would therefore certainly give the much needed impetus for the banking industry to expand the use of environmental information in their credit extension and investment decisions (Stavros & Dimas, 2005).

### **1.1.1 Green Banking**

There is no one distinct definition of green banking; however the following will try to bring the meaning of green banking. It means promoting environmentally-friendly practices and reducing carbon footprints from banking activities (Schultz, 2010). There are many differences compared to normal banking, Green Banks give more weight to environmental factors, their aim is to provide good environmental and social business

practice, they check all the factors before lending a loan, whether the project is environmental friendly and has any implications in the future, you will awarded a loan only when you follow all the environmental safety standards (Ray, 2008).

There cost of traditional banking is just too much that banks should just embrace green banking. Some of the disadvantages of traditional banking are environmental degradation this due large amounts of carbon emissions, wastage of papers and trees, more man power required in the handling of paper work, delaying in getting transaction information, inconvenience in time as people stand for long hours in bank queue ([www.slideshare.net](http://www.slideshare.net)).

Green banking strategies involves two components (1) managing environment risk and (2) identifying opportunities for innovative environmentally oriented financial products (IFC, 2007). To manage environmental risk, the banks have to design proper environmental management systems to evaluate the risks involved in the investment projects. The risks can be internalized by introducing differential interest rates and other techniques. Moreover, banks can withdraw themselves from financing high-risk projects. The second component of green banking entails creating financial products and services that support commercial development with environmental benefits. These includes investment in renewable energy projects, biodiversity conservation, energy efficiency, investment in cleaner production process and technologies, bonds and mutual funds meant for environmental investments (Chandra and Sudeepta, 2011).

Benefits of Green Banking are immense as it avoids paper work as transactions or procedures are done online or electronically thus less cutting of trees. It also creates awareness to business people about environmental and social responsibility enabling them to do an environmental friendly business practice. Loans are issued at comparatively lesser rate, the interest of that loan is comparatively less with normal banks because ethical banks give more importance to environmental friendly factors - ecological gains (Mehtar, 2014).

Natural resources conservation is also one of the underlying principles in a green bank while assessing capital/operating loans to extracting/industrial business sector. Green (Ethical) banks adopt and implement environmental standards for lending, which is really a proactive idea that would enable eco-friendly business practices which would benefit our future generations. Green loans are offered to finance projects that encourage or promote environmental conservation projects, they are usually offered at a lower rate than normal loans ([www.firstgreenbank.com](http://www.firstgreenbank.com)). Green banks also save energy and time, faster services to customer. It also mitigates credit risk, legal risk and reputation risk and above all it generates clean and hygienic environment (Mehtar, 2014).

Other green banking initiatives are green mortgages which have also been introduced to the market; here the client can add up to 15% of the price to add eco- friendly materials to their homes an example being solar panels, solar lighting and water heaters. A green credit card allows card holders to earn rewards or points which can be redeemed for eco-friendly charitable organizations ([www.gogreenindia.com](http://www.gogreenindia.com)).

A green building is a building which is energy efficient, resource efficient and environmentally responsible. It incorporates design, construction and operation practices that significantly reduce/ eliminate its negative impact on the environment and its occupants. There are certain ways of greening a building like designing a building according to the trees on site (no cutting of trees), good interior design for daylight penetration, building plans and windows designed for cross ventilation, efficient air condition and heating systems, highly reflective roofing materials and preserving and protecting landscape during production (IDRBT publication, 2013).

Mobile banking which is also a green banking initiative, means transferring money from M-pesa to the Bank and from the bank to M-pesa accounts using a mobile phone. It comes with a premium to increase revenue. Most if not all Kenyan commercial banks have partnered with Safaricom to offer this service. The advantages of mobile banking are immense among them are convenience, it can be done from anywhere and at time, saves time and cost of travelling to your branch and queuing which can be as long as three hours, it reduces the risk associated with handling cash, it is also very convenient in emergency situations (one can access funds quickly), cash can be used to pay bills, purchases and money transfer. The service is also available for 24 hours ([www.safaricom.com](http://www.safaricom.com)).

On-line banking, another green banking initiative is basically a means of accessing ones bank via the internet. This service is also convenient, fast and can be done from any location.

The services provided by On-line banking are access to E-statements, ability to do transactions such as RTGS, TT, funds transfer and balance enquiry via the internet ([www.cbagroup.com](http://www.cbagroup.com)).

Use of ATM is also a means of doing green banking. One can use their debit card to do balance enquiry, mini statements, cash withdrawals, cheque deposits, cash deposits and funds with little or no use of paper ([www.cbagroup.com](http://www.cbagroup.com)).

A local example of a green banking initiative is one that is done by Post Bank of Kenya. It is one that facilitates debit card holders to self service transactions at branch counters. The customer swipes the card and this automatically gets posted in the core banking system, it is then verified by the teller. While this is done, manual filling up of vouchers are dispensed and the transaction is authenticated by the ATM pin. This is paperless mode, it can support cash deposit, cash withdrawal and funds transfer (IDRBT publication, 2013).

### **1.1.2 Financial Performance**

Financial performance is a subjective measure of how well a firm uses assets in running business and generating revenues (Greenwood & Jovanovic, 1990). It simply means the financial health of a firm. Some of the ways of assessing financial performance in order to find out whether a firm is performing poorly or well are profits, liquidity, solvency, financial efficiency and repayment capacity. The main one being profitability which measures the extent to which a business generates profits from the use of land, labour,



management and capital. It is measured using return on assets, return on equity and operating profit margin (Oltmans, Danny & Thomas, 1998).

Liquidity on the other hand is the ability of a firm to meet financial obligations as they come due in the short term without disrupting normal operations of business, this can be analyzed by looking at current ratios. Solvency which is also a measure of financial performance basically gauges a firm's ability to pay all financial obligations if assets are sold and if a firm can continue viable operations even after financial adversity (Oltmans, Danny & Thomas, 1998).

Financial efficiency measures the intensity with which a business uses its assets to generate gross revenues and the effectiveness of production, purchasing, product pricing and financing decisions (Oltmans, Danny & Thomas, 1998).

### **1.1.3 Effect of Green Banking on Financial performance**

Green banking is expected to be very costly for the organization in the initial years as the organizations will incur large amounts of capital costs. Cost reduction is also expected as there will be a decrease in paper work; there will be more recycling leading to an increase in profits. ROI in green banking is not highly sensitive to the amount of time it takes to deploy capital because many green banks offering recycle and redeploy capital relative quickly. ROI of green banks is sensitive to default risk because defaults are primary to operating costs for all products. High defaulters lead to high loss coverage and reduced interest income (Booz & Co, 2013).

Green banking has an effect in financial performance in that if a bank fails to practice green banking or finances a project that has adverse effects on the environment it may face credit risk, liquidity risk and also reputation risk.

The bank may have to incur clean up costs for the damages caused if it financed a project that has adverse effects on the environment. The bank may also suffer credit risk if it financed a project harmful to the environment, and perhaps the project is stalled or forbidden by regulatory authorities leading to a default in payment of the loan by the client. A financial institution may also face reputation risk when it fails to practice green banking causing it to lose business from clients who are sensitive to the environment (Mehtar, 2014).

#### **1.1.4 Commercial Banks in Kenya**

A bank can be defined as a financial institution authorized to provide a variety of financial services, including customer and business loans, checking services, credit cards and savings. In Kenya, banking was started by the British during the 1890s, the first bank being The National Bank of India (later National & Grindlays Bank) followed by the Standard Bank now the Standard Chartered Bank in 1910 and Bank of South Africa (currently Barclays) in 1925. Their primary interest was to finance external trade but later the banks expanded their functions to cover deposit taking, this was followed by opening branches in Nairobi, Mombasa and other major towns in Kenya. Presently commercial banks have increased from three to forty three. Banks are important as they help to increase savings, investment and employment. Banks also assist to transfer money, provide loans to government and capital formation (Ochieng & Maxon, 1992).

Commercial Banks are licensed and regulated pursuant to the provisions of the Banking Act and the Regulations and Prudential Guidelines.

They are the dominant players in the Kenyan Banking system and closer attention is paid to them while conducting off-site and on-site surveillance to ensure that they are in compliance with the laws and regulations. Out of the 43 institutions, 30 are locally owned and 13 are foreign owned. The locally owned financial institutions comprise 3 banks with significant shareholding by the Government and State Corporations, 27 commercial banks ([www.centralbank.go.ke](http://www.centralbank.go.ke)).

## **1.2 Research Problem**

One of the major reasons for green banking is the increasing energy consumption and energy prices. Government agencies, investors are demanding more disclosures from enterprises regarding their footprint and their environmental initiatives and achievement (IDRBT Publication, 2013).

The challenge is that the banking and financial institutions are not directly affected by the environmental degradation; today there are indirect cost savings to banks, due to strict environmental disciplines imposed by the environmental oversight authorities across the countries Kenya included. The bank debtors will have to follow certain standards to run their business and in the case of failure, it would lead to heavy penalties, fines and legal liabilities or closure of the businesses leading to a likelihood of default on the repayments on borrowed capital from the bank (Chandra and Sudeepta, 2011).

Green banking is associated with cost cutting in the long run, hence it is expected that a firm's financial performance will improve and net profit will increase.

There are several studies that have shown a positive relationship between financial performance and green banking. A study by Sahoo & Nayak in 2014 concluded that firms can achieve better returns towards sustainable business processes in an environmentally friendly manner.

There also a few studies that have shown no relationship whatsoever between green banking and financial performance (Chen & Metclaf, 1980). There are also studies that have shown a negative relationship between green banking and financial performance. (Hamilton, 1995) discovered that the firms that chose pollution control and disclosure of the carbon footprints were reported less profitable. Hence making it difficult to know which findings of the studies are right or wrong.

### **1.3 Research Objective**

To establish the relationship between green banking and financial performance of commercial banks in Kenya.

### **1.4 Value of the Study**

The study is intended to assist Kenyan banks engage and promote green banking as part and parcel of their daily operations. The study is also intended to show banks the benefits of green banking.

This study is intended also to benefit the CBK and NEMA to focus on green banking and come up with a proper structure of how it should be implemented by Kenyan banks.

The study is intended to assist central bank on how it should also come up with strategies of how banks should practice green banking and also play an oversight role.

The study aims to sensitize other stakeholder such as employees, shareholders and customers on the benefits of green banking and how they can be part and parcel of promoting green banking in their various banks.

To academicians it can be used to build knowledge on the discipline or as a source of reference and lastly researchers can use it engage in further studies in the field.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter reviews theoretical reviews on sustainability, green banking and determinants of financial performance. The empirical reviews show studies that establish whether there is a relationship between green banking and financial performance.

### **2.2 Theoretical Review**

This section reviews models, frameworks and principles that guide the study. This section contains a theory that focus purely on sustainability that is the one planet framework which has ten principles on how humans should protect the environment. There are also three theories (the London Principles, the Jeucken's model and the simulation model) that talk about both financial institutions and environmental sustainability. The London principles states briefly how financial institutions should aim at preservation of the environment while the Jeuken's model talks about how a bank moves from being completely environmentally unfriendly to being completely environmentally friendly. The simulation model is designed to analyze under which conditions green products can successfully be introduced. Lastly there are the Equator principles that talk how banks should determine, assess and manage environmental and social risks in projects.

#### **2.2.1 One Planet Living Framework**

The One Planet Living framework was developed by BioRegional and WWF in 2011 to help people and organizations to live and work within a fair share of our planet's resources. It uses ten guiding principles as a framework to help individuals and

organizations to examine the sustainability challenges that they face, and to develop appropriate solutions (Bonina, Burris & Kimberly, 2012).

The first principle is zero carbon which is making buildings more energy efficient and delivering all energy with renewable technologies. The second principle is zero waste which is reducing waste, reusing where possible, and ultimately sending zero waste to landfill. The third principle is sustainable transport which is basically encouraging low carbon modes of transport to reduce emissions and reducing the need to travel. The fourth principle is using sustainable healthy products, with low embodied energy, sourced locally and made from renewable or waste resources. The fifth principle is choosing low impact, local, seasonal and organic diets and reducing food waste (Bonina, Burris & Kimberly, 2012).

The sixth principle is using water more efficiently in buildings and in the products we buy, tackling local flooding and water course pollution. The seventh principle is protecting and restoring biodiversity and natural habitats through appropriate land use and integration into the built environment. The eighth principle is reviving local identity and wisdom, supporting and participating in the arts. The ninth principle talks about creating bioregional economies that support fair employment, inclusive communities and international fair trade. Lastly the tenth principle is about encouraging active, sociable, meaningful lives to promote good health and well being (Bonina, Burris & Kimberly, 2012).

### **2.2.2 Equator Principles**

The Equator Principles were launched in Washington D.C. on 4 June 2003 and were initially adopted by ten global financial institutions: ABN AMRO Bank, N.V., Barclays plc, Citi, Crédit Lyonnais, Credit Suisse First Boston, HVB Group, Rabo Bank Group, The Royal Bank of Scotland, WestLB AG, and Westpac Banking Corporation. Subsequently there were over forty further EP adoptions during the first three year implementation period. The Equator Principles is a credit management framework for determining, assessing and managing environmental and social risk in project finance construction. Project finance is used to fund the development and construction of major infrastructure and industrial projects ([www.equatorprinciples.com](http://www.equatorprinciples.com)).

The statement of principles are as follows; review and categorization here projects are classified according to the impact they have on the environment. Category A are for projects that have adverse environmental and social risk, Category B is for projects that have limited environmental and social risks and lastly Category C are for projects that have minimal or no environmental and social risks. The second step is environmental and social assessment. Here an assessment of environmental and social risks are identified, once that has been done an assessment document is produced to show how the risks will be mitigated or reduced ([www.equatorprinciples.com](http://www.equatorprinciples.com)).

The third step is to apply any applicable environmental and social standards. The client should comply with the relevant laws and regulations of the land.



The fourth step is developing an environmental and social management system and equator principles action plan. Category A and Category B projects will be required to also maintain the environmental and social risks as they change and they should also state how they will comply with the standards ([www.equatorprinciples.com](http://www.equatorprinciples.com))

The fifth step is stakeholder management which basically talks about how communities and other stakeholders will be involved in the project. Here a lot of consultation and participation is done to engage with stakeholders. The next step is the grievance mechanism, this is how conflicts will be resolved should a conflict arise between the stakeholders and the project owners. The seventh step is an independent review done by an independent environmental consultant on the assessment document and stakeholder engagement process documentation to assess equator principles compliance ([www.equatorprinciples.com](http://www.equatorprinciples.com)).

The eighth step is covenants that checks whether there is compliance (if there is compliance to the laws and regulations). The ninth step is independent monitoring and reporting. This is ongoing monitoring of the loan to check whether there is compliance and no default in payment. The last step is reporting and transparency. The reporting should be done annually; carbon emissions produced annually should also be reported ([www.equatorprinciples.com](http://www.equatorprinciples.com))

### **2.2.3 London Principles**

In 2002, the Corporation of London and individual finance sector institutions developed the London Principles to propose conditions for a financial system and the role of

financial institutions within its sustainable development priorities. Its fifth to seventh principles emphasize on environmental protection. The fifth principle states that financial institutions should reflect on the cost of environmental and social risks in pricing of financial and risk management products. The sixth principle states that financial institutions should exercise equity ownership to promote efficient and sustainable asset use and risk management. The last principle on environmental protection states that financial institutions should provide finance for development of environmentally beneficial technologies (UNEP-FI Guide to Banking & Sustainability, 2011).

The principle also encourages financial institutions beginning to develop a sustainability banking approach to ensure commitment at top level management, examine key business drivers, including principle areas of sustainability risk and opportunity. These financial institutions must examine organizational values of company in the context of sustainability.

Clear definition of the roles and responsibilities of the management team and choice of specific limited sustainability interventions with clear objectives must be done. Monitoring and evaluation of performance against specific criteria and objectives on environmental sustainability must also be done (UNEP-FI Guide to Banking & Sustainability, 2011)

#### **2.2.4 Jeucken's Model**

Jeucken's model developed by Jeuken in 2004 shows the phases of how a bank applies environmentally friendly procedures in their operations.

Defensive banking is the first phase: here the bank is a follower and contests every government measure with respect to the environment and sustainable development since its direct or indirect self interest is threatened. The bank considers all environmental laws and regulations are threats to the business. Care for the environment is considered a cost (Jeucken, 2004).

Preventive banking is the second phase; potential costs are identified here. These cost savings initially have an internal character; that is they relate to the banks own operation. Many banks are working on the internal environmental core (for example paper use, energy and water use). They also have an external core (with respect to products for example loans and products) purely in the sense of limiting risk and investment losses related to environmental and social risks. It includes looking into saving costs through fewer environmental or social risks in credit extensions. Preventive bank is inevitable for most banks as there is pressure from politicians and interest groups through laws and regulations (Jeucken, 2004).

The third phase is the Offensive phase: banks see new opportunities in the market place both in the area of specific products and new markets such as the fast-growing segment of environmental technology an example being financing sustainable energy. The bank is looking for profitable environmentally sound opportunities in the market which can compete with alternative investment and lending opportunities. It is a win-win situation as extra investments/ opportunities that benefit the environment have a pay off period that lies within the required time frame and level of risk is deemed acceptable (Jeucken, 2004).

Sustainable banking is the last phase which lays down qualitative preconditions so that all activities are sustainable; the ambition is to operate sustainability in every respect an example being the First Green Bank in the United States. Both internal activities and external activities (for example lending and investments) must meet the requirements of sustainable business are focused on valuing and stimulating sustainability among customers and other activities in the society (Jeucken, 2004).

### **2.2.5 The Simulation Model of Co-evolving Firms and Consumers**

The model was developed in 2002 and is designed to analyze under which conditions green products can successfully be introduced. Green products are defined as products with an alternative design such that less physical resources are required during its life cycle. Products are implemented as a chain of actions. The non-green type of product is sold to the consumers, and will not return back to the producer. The green product is leased to the consumers, the artificial consumers in the model. Although previous studies tended to examine individuals' moral reasoning and reactions to isolated events (e.g., Mazar, Amir, & Ariely, 2008), recent developments in moral psychology highlight the importance of a global sense of morality (Jordan, Mullen, & Murnighan, 2009; Zhong, Liljenquist, & Cain, 2009). These theories suggest that moral behaviors are figured into an implicit calculation of self perception such that virtuous behaviors boost moral self-image and transgressions dampen it.

The basic assumption is that people prefer to have a positive moral self, but maintaining it often comes at a cost saving because social and ethical dilemmas usually involve

conflicts of interest. Thus, people tend to be strongly motivated to engage in pro-social and ethical behaviors if their moral self is threatened by a recent transgression; they are least likely to scrutinize the moral implications of their behaviors and to regulate their behaviors right after their moral self has experienced a boost from a good deed. This implies that virtuous acts can license subsequent asocial and unethical behaviors.

### **2.3 Determinants of Financial Performance of Commercial Banks**

The financial performance of commercial banks can be analyzed by assessing green banking initiatives on how they affect profitability, liquidity and solvency. CAMEL which is an acronym for Capital adequacy, Asset quality, Management efficiency, Earning quality and liquidity is very instrumental in checking bank safety and soundness.

#### **2.3.1 Green Banking**

The broad objectives of green banks are avoiding waste and giving priority to the environment and the society. It is practiced to focus on environmental responsibility initiatives by providing financial innovation and ensuring sustainable development strategies. Green banking is also practiced to ensure banks use the few available resources responsibly. It is done so that the world can be habitable for a much longer time. Lastly green banking minimizes paper work as much as possible inside and outside the bank to achieve cost and time efficiency (Saha, 2013).

Green banking is associated with cost cutting in the long run, the First Green Bank in the United states is one of the first banks in the United States which has an environmental and social mission.

Even in difficult economic times, more specifically during the global recession in 2009, it attained profitability and had acquired current assets of USD 252 million and lent an excess of USD 201.5 million. Its main mission is to be as be as eco-friendly as possible ([www.firstgreenbank.com](http://www.firstgreenbank.com)).

### **2.3.2 Capital Adequacy**

It reflects the overall financial condition of banks and also the ability of management to meet the need of additional capital. If a financial institution has adequate capital depositors gain confidence (Prasad & Ravinder, 2012).

Financial institutions capital adequacy are categorized in the following order well capitalized, adequately capitalized, undercapitalized, significantly undercapitalized and critically undercapitalized. Financial institutions that maintain a level of capital fully commensurate with their current and expected risk profiles and can absorb any present or anticipated losses are classified as well capitalized. There should be no significant asset quality problems, earnings deficiencies, or exposure to credit or interest-rate risk that could negatively affect capital ([www.ncua.gov](http://www.ncua.gov)).

A capital adequacy classified as adequately capitalized is one that maintains a level of capital fully commensurate with its risk profile both now and in the future and can absorb any present or anticipated losses. There should be no significant asset quality problems, earnings deficiencies, or exposure to interest-rate risk that could affect the financial institution's ability to maintain capital level. Financial institutions in this category should meet their risk-based net worth requirements ([www.ncua.gov](http://www.ncua.gov))

An undercapitalized financial institution, normally exhibits more than ordinary levels of risk in some significant segments of their operation. There may be asset quality problems, earnings deficiencies, or exposure to credit or interest-rate risk that could affect the credit union's ability to maintain the minimum capital levels. Financial institutions in this category may fail to meet their risk-based net worth requirements ([www.ncua.gov](http://www.ncua.gov)).

A significantly undercapitalized financial institution is appropriate but asset quality, earnings, credit or interest-rate problems will not cause it to become critically undercapitalized in the next 12 months. The financial institutions do not have sufficient capital based on its capital level compared with the risks present in its operations. Critically undercapitalized financial institutions have significant asset quality problems, negative earnings trends, or high credit or interest-rate risk exposure and are exposed to levels of risk sufficient to jeopardize their solvency ([www.ncua.gov](http://www.ncua.gov)).

### **2.3.3 Asset Quality**

It describes what high ratio means and low ratio means in assessing asset quality. It measures the assets quality and ascertains the component of non-performing assets. (Prasad & Ravinder, 2012) Asset quality is determined by loan concentrations that present undue risk to the financial institution, the appropriateness of investment policies and practices, the investment risk factors when compared to capital and earnings structure and the effect of fair (market) value of investments vs. book value of investments ([www.ncua.gov](http://www.ncua.gov)).

The asset quality rating is a function of present conditions and the likelihood of future deterioration or improvement based on economic conditions, current practices and trends. The examiner assesses financial institution's management of credit risk to determine an appropriate component rating for Asset Quality. As stated earlier asset quality is interrelated to the assessment of credit risk thus the examiner needs evaluates the impact of other risks such as interest rate, liquidity, strategic, and compliance ([www.ncua.gov](http://www.ncua.gov)).

#### **2.3.4 Management Efficiency**

This is a subjective analysis of measuring the efficiency and effectiveness of management. (Prasad & Ravinder, 2012) Here the business strategy is imperative, the strategic plan should identify risks within the organization and outline methods to mitigate concerns. As part of the strategic planning process, financial institutions should develop business plans for the next one or two years. The board of directors should review and approve the business plan, including a budget, in the context of its consistency with the financial institution's strategic plan. The business plan is evaluated against the strategic plan to determine if it is consistent with its strategic plan. Examiners also assess how the plan is put into effect and the performance will be used to rate management ([www.ncua.gov](http://www.ncua.gov)).

Information systems and technology should be included as an integral part of the financial institution's strategic plan. An assessment of risk analysis, policies, and oversight of this area based on the size and complexity of the financial institution and the type and volume of e-Commerce services' offered will be done.



Internal controls are also assessed in this category. Effective internal controls enhance the safeguards against system malfunctions, errors in judgment and fraud. Without proper controls in place, management will not be able to identify and track its exposure to risk. Controls are also essential to enable management to ensure that operating units are acting within the parameters established by the board of directors and senior management. The most important aspects of internal control that will be assessed are information systems, segregation of duties, audit program, record keeping, protection of physical assets, education of staff and succession planning ([www.ncua.gov](http://www.ncua.gov)).

Other key factors to consider when assessing the management of a financial institution include, but are not limited to, Adequacy of the policies and procedures covering each area of the credit union's operations (written, board approved, followed), budget performance compared against actual performance, effectiveness of systems that measure and monitor risk ,risk-taking practices and methods of control to mitigate concerns, integration of risk management with planning and decision-making ,responsiveness to examination and audit suggestions, recommendations, or requirements, compliance with laws and regulations, adequacy of the allowance for loan and lease losses account and other valuation reserves ,appropriateness of the products and services offered in relation to the financial institution's size and management experience, loan to share ratio trends and history, market penetration, rate structure and cost/benefit analysis of major service products ([www.ncua.gov](http://www.ncua.gov)).

### **2.3.5 Earning Quality**

This determines the ability of a bank to earn consistently. It determines the profitability of a bank (explains its sustainability and growth earning in future). (Prasad & Ravinder, 2012) Key factors to consider when assessing the financial institution's earnings are: level, growth trends, and stability of earnings, particularly return on average assets, quality and composition of earnings, adequacy of valuation allowances and their effect on earnings, adequacy of budgeting systems, forecasting processes, and management information systems, future earnings prospects under a variety of economic conditions, net interest margin, net non-operating income and losses and their effect on earnings, quality and composition of assets, net worth level, and sufficiency of earnings for necessary capital formation ([www.ncua.gov](http://www.ncua.gov)).

### **2.3.6 Liquidity**

This measures the amount of cash available, a statement of cash flows can be used to assess liquidity (Prasad & Ravinder 2012). Asset/liability management is the process of evaluating, monitoring, and controlling balance sheet risk (interest rate risk and liquidity risk). The process integrates strategic, profitability, and net worth planning with risk management. The key areas assessed here are interest rate risk sensitivity and exposure, reliance on short-term, volatile sources of funds, including any undue reliance on borrowings, availability of assets readily convertible into cash; and technical competence relative to asset liability management, including the management of interest rate risk, cash flow, and liquidity, with a particular emphasis on assuring that the potential for loss

in the activities is not excessive relative to its capital. Interest rate, liquidity risks, strategic and reputation risks are also assessed here ([www.ncua.gov](http://www.ncua.gov)).

## **2.4 Empirical Evidence**

Empirical evidence are studies conducted previously on the relationship between green banking and financial performance by other researchers.

### **2.4.1 International Evidence**

Chen & Metclaf (1980) a study establishing whether there is a relationship between green banking and financial performance found that there was no relationship between green banking and financial performance, similar findings were found by Jaggi (1992).

Hart & Ahuja (1994) An empirical study to establish whether there is a relationship between the firm's profitability and its environmental initiatives found that there is a positive relationship between the firms profitability and its environmental in the long run.

Shrivistava (1995) examined the connections between the conduct of business by corporations and ecological sustainability. He positioned business as both a cause and a potential solution to threats created by environmental degradation and identified a set of strategic and operational options through which business may become a solution. The study showed a positive correlation between sustainability and volumes of business especially with individual customers rather than businesses.

Callado (2006) A study done in Spain showed that there is a positive valuation of social responsibility practices by the public a firm may obtain high profit margin and demand for its products.

Rajput, Aroro, Khanna (2013) An empirical study of the environment performance on financial performance in Indian banking sector showed that there was no relationship between environment performance and financial performance, dependent variables were net income and expenses while independent variables was implementation of green banking. The annual data for income, profit margin, net income and total expenses were collected from March 1997-March 2013. The analysis method used was panel regression method.

#### **2.4.2 Local Evidence**

Kingoo (2011) studied a relationship between electronic banking and financial performance of commercial banks in Kenya showed that a positive relationship existed between financial performance and E-banking (a green banking initiative). This positive relationship was discovered by the use of regression analysis.

Ngumi (2014) studied the effect of bank innovations on financial performance of commercial banks in Kenya. The banking innovations which are similar to green banking initiatives were credit cards, internet banking, mobile banking, Electronic funds transfer and point of sale terminals. In his study used regression analysis to establish whether a relationship existed and the findings were that there was a positive relationship between bank innovations and financial performance.

Kerre (2014) studied the effect of green banking on cost savings in Kenyan commercial banks. He analyzed their financial performance, and used regression analysis to establish whether there was a relationship. His findings were that banks experienced immense cost savings in the long run when they practiced green banking initiatives.

## **2.5 Summary of Literature Review**

The Jeucken's model states that a bank practices green banking in phases and is a continuum, starting with the defensive banking then to preventive banking then to offensive banking and lastly sustainability banking. This is not the case as banks can practice green banking in whatever phase they please and they can also stagnate in certain phase for example they a bank may stagnate in the preventive phase and not move to the offensive phase. The Jeucken's model is also criticized for only concentrating in the banking industry. This should not cause much a problem as other theories such as one planet living framework can be used. The equator principles have also been criticized for only concentrating in huge capital investments, there is no consideration of medium or small capital investments. To counteract this other banks can use the Jeucken's model that can be applied regardless of the size of the project.

In Kenya there is very little awareness and consciousness on sustainability issues. There is also no one method of sustainability each organization prepares its own sustainability in a different way making it hard to compare sustainability reports of two organizations. There is very little training and development of staff in green banking as it is prioritized last in many organizations.

In Kenya green banking initiatives primary objectives is to increase revenue and not conserve the environment. This is evident in (Ngumi 2014) who studied the effect of bank innovations on financial performance of commercial banks in Kenya. and (Kinno 2011) studied a relationship between electronic banking and financial performance of commercial banks in Kenya, in my study the focus is on environmental conservation.

Some scholars claim that green policies/products are profitable: green policies can reduce costs; green firms can shape future regulations and reap first-mover advantages (Rugman and Verbeke, 2000). However, this does not seem to be the norm within and across most industries. Many believe that green policies are expensive; especially after the initial gains – the ‘low hanging fruit’ – in reducing end-of-the-pipe pollution have been harvested (Walley and Whitehead, 1994). As a result, firms often need to charge premium prices for green products. Of course, if green products were cheaper than other products, their premium pricing would be less of an issue for consumers. The above discussion raises two issues regarding consumers’ benefit–cost calculus: first, whether consumers regard greenness of products/firms as ‘hygiene’ or ‘motivating’ factors, and second, to what extent green products create social benefits but impose private costs.

Pravakar and Bibhu (2008) have studied that in a globalised economy, the industries and firms are vulnerable to stringent environmental policies, severe law suits or consumer boycotts. Since banking sector is one of the major stake holders in the Industrial sector, it can find itself faced with credit risk and liability risks. Further, environmental impact might affect the quality of assets and also rate of return of banks in the long-run.

Thus the banks should go green and play a pro-active role to take environmental and ecological aspects as part of their lending principle, which would force industries to go for mandated investment for environmental management, use of appropriate technologies and management systems. Therefore this study will look at how the green banking operations will affect financial performance.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

In this chapter the research methodology to be used in the study is described. It presents the research design, study's target population, data collection and analysis procedure.

### **3.2 Research Design**

The research had a descriptive design; which is concern with describing a population with respect to important variables. (Mugenda &Mugenda, 2003) Green banking initiatives (internet banking and mobile banking) is the X variables and financial performance (aggregate profit before tax of all commercial banks in Kenya) being the Y variable.

### **3.3 Population**

Population is an entire group of individuals, events or objects having a common observable characteristic. The target population for this study comprised of all commercial banks in Kenya regulated by the Central Bank of Kenya which are forty three in number making the study a census.

### **3.4 Data Collection**

This study collected secondary data relating to financial performance and green banking of the commercial banks in Kenya for the period between 1st January 2011 and 31st December 2013. The secondary data was collected from the annual reports of Central Bank of Kenya.



### **3.5 Data Analysis**

Data analysis method was based on regression and correlation analysis so as to determine the relationship between financial performance and green banking.

#### **3.5.1 Data Analysis Model**

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where Y is the financial performance as measured by net profit after tax

X<sub>1</sub> and X<sub>2</sub> are the green initiatives used by the various banks in Kenya

X<sub>1</sub> is the amount of funds channeled through mobile banking

X<sub>2</sub> is the amount of funds channeled through in electronic banking

β<sub>0</sub> is the constant term

β<sub>1</sub> is the coefficient of X<sub>1</sub>

β<sub>2</sub> is the coefficient of X<sub>2</sub>

ε is the error term

#### **3.5.2 Test of Significance**

Once a relationship has been established to have existed between the dependent and independent variable, a test of significance was done to test how strong the relationship is. This was done by calculating R which is the correlation coefficient it basically measures the strength and direction of coefficient. The correlation coefficient can help establish whether there is a positive, negative or no relationship whatsoever between the variables.

$R^2$  is the coefficient of determination; it indicates how data fits a statistical model; line or curve. ANOVA which is an acronym for analysis of variance analyses the differences between groups and their associated procedures.

## **CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION**

### **4.1 Introduction**

This chapter presents analysis of the findings. The secondary data used was gathered from Central Bank of Kenya, Communication Authority of Kenya and Kenya National Bureau of Statistics. The findings are analyzed and presented in the form of tables and percentages. There is also a brief interpretation guided by the research objectives and a discussion on research findings from the analysis of the data.

### **4.2 Descriptive Statistics**

This is the discipline of quantitatively describing the main features of collection of information. The main aim of descriptive statistics is to summarize data and report findings.

#### **4.2.1 Amount of Funds Channeled through Mobile Banking**

The study sought to establish the amount of funds channeled through mobile banking in 2011-2013. The findings are shown below and also in appendix II.

**Table 4.1 Amounts of Funds Channeled through Mobile Banking**

<b>YEAR</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
<b>FUNDS IN BILLIONS</b>	1901.56	1545.38	1169.15

**Source: Research Findings**

The amount of funds channeled through mobile increased from ksh1169.15 billion in 2011 billion to ksh1545.38 billion in 2012, this is a 32.18% increase. In the year 2013 there was a further increase from ksh1545.38 billion in 2012 to ksh1901.56 billion in 2013, which is a 23.05% increase. This is attributed to the fact that the number of mobile banking subscribers and agents increased significantly over the years.

#### **4.2.2 Funds Channeled through Internet Banking**

The study sought to establish the amount of funds channeled through internet in 2011-2013. The findings are shown below

**Table 4.2 Amount of funds channeled through internet banking**

<b>YEAR</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
<b>Funds channeled in Ksh billions</b>	7.420	5.898	3.640

**Source: Research Findings**

Funds channeled through on-line banking increased from ksh3.64 billion in 2011 to ksh5.898 billion in 2012, this is a 62% increase and a further increase of ksh7.42 billion in 2013, making it an increase of 25.8% increase compared to the previous year.

#### **4.2.3 Liquidity and Capital Adequacy of all Commercial Banks in Kenya**

The study also analyzed liquidity and capital adequacy of all commercial banks in Kenya and the findings were as follows:

**Table 4.3 Liquidity and Capital Adequacy of all Commercial Banks in Kenya**

<b>As at end of</b>	<b>Net foreign Assets (ksh millions)</b>	<b>Total domestic Credit both private and government (ksh millions)</b>	<b>Commercial banks liquidity ratio</b>	<b>Advances to deposits ratio</b>
2011 Dec	296,966	1,532,051	37.8	79.0
2012 Dec	327,821	1,767,757	35.8	79.3
2013 March	321,314	1,824,705	42.5	80.2
2013 June	362,989	1,859,074	42.9	80.8
2013 September	374,637	1,918,458	40.8	81.4
2013 December	389,179	2,007,163	40.3	82.3

**Source: Research Findings**

The liquidity of commercial banks was 37.8 as at December 2011 and 35.8 as at December 2012, this is a 5.29% decrease in liquidity. Between March 2013 and December 2012 the liquidity improved significantly, an increase of 18.72%, meaning that banks were in a better position to give loans and cater for all cash withdrawals. Between June 2013 and March 2013, there is a slight improvement in liquidity, from 42.5 to 42.9, a 0.94% increase. In September 2013 there is a significant drop in liquidity once again, from 42.9 in June 2013 to 40.8 in September 2013, a 4.9% decrease in liquidity. Lastly there seems to be a downward trend, the liquidity dropped further to 40.3, a 1.22%

decrease in liquidity. The advances to deposit ratio which shows capital adequacy has been on upward trend from 2011 December to 2013 December. The increase in capital adequacy is slight but stable of the years. This indicates that banks are more aggressive in lending which ultimately results to better profitability.

#### **4.2.4 Financial Performance of Commercial Banks in Kenya**

The study also sought to establish the aggregate financial performance of all commercial banks in Kenya and the findings are as follows

**Table 4.4 Financial Performance of Commercial Banks in Kenya**

**Figures in Ksh Billions**

<b>ITEM</b>	<b>JUNE 2013</b>	<b>JUNE 2012</b>	<b>JUNE 2011</b>
<b>TOTAL INCOME</b>	177.3	176.4	110.3
<b>EXPENSES BEFORE PROVISIONS</b>	121.4	128	65.6
<b>PROFIT BEFORE PROVISIONS</b>	67.0	57.9	43.8
<b>PROVISION FOR BAD DEBTS</b>	5.5	4.7	3.9
<b>PROFIT BEFORE TAX</b>	61.5	53.2	40.8

**Source: Research Findings**

The main performance measures are profitability and total income, which have been on an upward trend; it increased from 110.3 billion in June 2011 to 176.4 billion in June 2012, showing a 32.50% increase. The total income further rose from 176.4 billion in June 2012 to 177.3 billion, this is 0.5% increase, this is a much smaller increase compared to the previous year. The increase in total income is due to the fact that banks increased their revenue sources from loans and bank charges to other sources as agency banking, mobile banking and internet banking.

The profit before tax increased from 40.8 billion in June 2011 to 53.2 billion in June 2012, this is a 30.40% increase, and a further increase of 61.5 billion in June 2013 which is a 15.6% increase.

### 4.3 Regression Analysis

The data was analyzed using regression analysis which is done to establish whether there is a relationship between green banking and financial performance.

**Table 4. 5 Model Summary**

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000 <sup>a</sup>	1.000	1.000	.02821
2	1.000 <sup>b</sup>	1.000	.	.

a. Predictors: (Constant), mobile banking, internet banking

**Source: Research Findings**

The co-efficient of determination explains the extent to which changes in the dependent variable (financial performance of commercial banks in Kenya) can be explained by the change in the independent variable (green banking initiatives that is mobile banking and internet banking).

Two of the four independent variables that were studied, explain only 100% of the changes in the financial performance of commercial banks in Kenya as represented by  $R^2$ . The study shows a very strong positive relationship between financial performance and green banking.

**Table 4.6 ANOVAa**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	217.046	1	217.046	272828.373	.001 <sup>b</sup>
	Residual	.001	1	.001		
	Total	217.047	2			
2	Regression	217.047	2	108.523	.	. <sup>c</sup>
	Residual	.000	0	.		
	Total	217.047	2			

**Source: Research Findings**



The study found significance level of sig= 0.001 where  $p > 0.05$  and therefore there is a very significant relationship between green banking and financial performance of commercial banks in Kenya. Hence the linear regression is very significant in predicting how green banking affects financial performance of commercial banks in Kenya.

**Table 4.7 Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	20.872	.061		339.528	.002
	VAR0000	5.477	.010	1.000	522.330	.001
	2					
2	(Constant)	21.130	.000		.	.
	VAR0000	5.586	.000	1.020	.	.
	2					
3	VAR0000	0.001	.000	0.020	.	.
	3					

**Source: Research Findings**

$$Y = 21.130 + 5.586X_1 + 0.01X_2$$

$X_1$  is internet banking

$X_2$  is mobile banking

According to the regression equation established taking all factors constant, the financial performance of the banking sector will be 21.130%. The data analyzed shows that taking all independent variables at zero, a unit increase of internet banking will lead 5.586 to an increase in financial performance of commercial banks. A unit increase in mobile banking will lead to a 0.01 increase in financial performance. This shows a positive relationship between financial performance and green banking.

#### **4.4 Interpretation of the Findings**

The amount of funds channeled through mobile banking has been on upward trend over the years. This can be attributed by the fact that there has been an increase in the number of mobile users from the year 2011-2013. There has also been a large and steady increase of customers who have subscribed for mobile banking. The number of agents who enable customers to access mobile increased from 62,300 in 2012 to 93,689 in 2013.

There has also been an increase of funds channeled through internet banking from Ksh 3.64 billion to Ksh 7.42 billion; this is a 203.85% increase. This is because there has been an increase of internet users over the years. There has also been an increase in the banks offering the internet banking service; initially there were very few offering the service but now all the 43 commercial banks in Kenya are offering it. The amount of funds

channeled through internet banking has also increased due to the fact that there has been a tremendous improvement in internet infrastructure: there was the construction of the fiber optic cables. The number of licensed internet service providers has also risen.

Liquidity which is the ease with which assets are converted to cash has also improved from the year 2011-2013. This can be attributed to the fact that commercial banks have embarked on stable sources of funding. The banks have more investors who are less likely to withdraw frequently. Liquidity could have also improved because banks have introduced instruments that lock customers an example being M-shwari lock savings account offered by Commercial Bank of Africa. This is a mobile banking service that allows to customers to deposit cash and can only withdraw it after a certain period time, usually three months.

The study findings also show that capital adequacy has increased over the years this can be explained by the fact that mobile banking and internet has led to an increase in capital for commercial in Kenya. Internet banking and Mobile banking are also less risky compared to other services offered by banks leading to better risk management.

The aggregate profit before tax of all commercial banks has increased from Ksh 40.8billion in 2011 to Ksh 53.2 billion in 2012 and Ksh 61.5 billion in 2013. This is because mobile banking and internet banking among many other factors some not even related to green banking have increased banks sources of revenue leading to an increase in profit.

The findings of the study also show that R is 100% meaning that there is a perfect relationship between profit before tax and internet banking and mobile banking. The findings of the study show that  $R^2$  is 1 meaning that there is a perfect positive relationship between green banking and financial performance. This means that both the dependent and independent variable moved in the same direction when plotted on a graph. An increase in the amount of funds channeled through mobile banking and internet banking will lead to an increase in profit before tax. This also means that if there is a significant decrease in amounts channeled through mobile banking and internet banking could lead to a decrease in profits before tax.

The study found significance level of sig= 0.001 where  $p < 0.05$  and therefore there is a very significant relationship between green banking and financial performance of commercial banks in Kenya. Hence the linear regression is very significant in predicting how green banking affects financial performance of commercial banks in Kenya.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter looks at the summary of findings, conclusions, recommendations of the study, room for further studies and answers the research question which was to establish whether a relationship exists between financial performance and green banking.

### **5.2 Summary**

Financial institutions always look for innovative ways to increase revenue which result to increase in profits. Embarking on green banking leads to financial innovations and as shown from the findings of the study mobile banking and internet banking have a positive relationship with financial performance. The objective of the study was to establish whether there is a relationship between green banking and financial performance.

### **5.3 Conclusion**

Green banking is fairly new to commercial bank in Kenya. This is shown by the fact that there are very few green initiatives in commercial banks in Kenya. The Central bank of Kenya is also yet to come out strongly on the concept of Green Banking compared to other countries like Singapore.

Findings indicated that green banking positively impacted financial performance and is significant at 95% confidence level as level of sig=0.001 where  $p < 0.05$ . This implies that the increase in green banking initiatives results in an increase in financial performance,

this relationship is significant for commercial banks in Kenya. It can therefore be concluded that the management of commercial banks should be concerned with green banking as it is significant in determining financial performance.

#### **5.4 Policy Recommendations**

Banks should increase awareness and CSR activities to sensitize both internal and external customers. They should be more assertive in implementing green banking initiatives. Banks should invest more funds in green banking initiatives as it affects financial performance positively and most of all green banking leads to environmental sustainability.

NEMA, CBK and other agencies should promote more publicity on the relationship between the banks and the environmental concerns that are related to financing policies. They should also be part and parcel of guiding banks on how to implement green banking initiatives. A strategic plan should be put in place to guide banks on how they shift from traditional banking and green banking. After this is done the regulators should also come up with a way of monitoring commercial banks as they practice green banking, and punitive measures be taken if banks default. The government could use this study to formulate friendly policy on environment conservation which the banks should adopt and create more awareness about green banking.

#### **5.4 Limitations of the Study**

The study was faced by quite a number of challenges, one of them being the short period mobile banking has been launched in Kenya. Mobile banking was launched in Kenya and the rest of the world in 2007 hence very few studies have been done in this area. Few if any theories have been developed.

Internet banking is also a fairly new principle in Kenya; it was introduced in central bank of Kenya in 2014 and many other commercial banks. Internet banking is not practiced by so many Kenya as most of them do not have proper knowledge of the system and some banks have not put in proper information technology systems to facilitate easy internet banking.

No proper controls, procedures and guidelines have been put in place by the regulatory bodies in regards to green banking. There are few green banking initiatives in Kenya compared to other countries like Singapore this is because commercial banks in Kenya green banking initiatives are mainly internet banking, mobile banking and paperless banking. This is a small number compared to countries like Singapore, United States of America that have very many green banking initiatives such as green mortgages, green credit cards, green buildings, use of mass of transportation, which are not in Kenya. This shows that Kenya is far behind in green banking.

Secondary data was used in the study which has numerous limitations. Secondary data sources may provide you with vast amount of information, but quantity is not synonymous of appropriateness. This is simply because it has been collected to answer a

different research question or objectives. The inappropriateness may be, for instance, because of the data was collected many years ago, the information refers to a entire country when one aims to study a specific region, or the opposite, one aims to study an entire country but the information is given in a region wide. When one uses secondary data they lack of control over data quality. Government and other official institutions are often a guarantee of quality data, but it is not always the case.

### **5.5 Suggestion for Further Research**

A study should be conducted the relationship between green banking in Kenya and cost savings in commercial banks in Kenya. The study should explain whether green banking leads to cost savings both in the long run and short run once commercial banks in Kenya have embraced other green banking initiatives such as green mortgages, green credit cards, green building, environmentally friendly waste management system and use of mass transportation.

A study should also be done to establish the effect of green banking on the Kenyan economy. The study should show the effects green banking has on the economy, whether it impacts the economy positively or negatively.

A study should be done to establish the relationship between green banking and risk management of commercial banks in Kenya. The main risks to be studied are liquidity risk, credit risk and reputational risk. These risks should also show how they affect the financial performance of commercial banks in Kenya.



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## APPENDICES

### APPENDIX I: List of all commercial banks in Kenya as at 31<sup>st</sup> December 2013

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank (Kenya)
6. CfC Stanbic Holdings
7. Chase Bank (Kenya)
8. Citibank
9. Commercial Bank of Africa
10. Consolidated Bank of Kenya
11. Cooperative Bank of Kenya
12. Credit Bank
13. Development Bank of Kenya
14. Diamond Trust Bank
15. Dubai Bank Kenya
16. Eco Bank
17. Equatorial Commercial Bank
18. Equity Bank
19. Family Bank
20. Fidelity Commercial Bank Limited
21. First Community Bank

22. Giro Commercial Bank
23. Guaranty Trust Bank
24. Guardian Bank
25. Gulf African Bank
26. Habib Bank
27. Habib Bank AG Zurich
28. Housing Finance Company of Kenya
29. I&M Bank
30. Imperial Bank Kenya
31. Jamii Bora Bank
32. Kenya Commercial Bank
33. K-Rep Bank
34. Middle East Bank Kenya
35. National Bank of Kenya
36. NIC Bank
37. Oriental Commercial Bank
38. Paramount Universal Bank
39. Prime Bank (Kenya)
40. Standard Chartered Kenya
41. Trans National Bank Kenya
42. United Bank for Africa
43. Victoria Commercial Bank

**Source: Central Bank of Kenya**

**APPENDIX II: Amount of funds channeled through mobile banking**

<b>YEAR</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
JANUARY	142.653	114.06	75.4328
FEBRUARY	141.126	126.093	76.3366
MARCH	134.446	117.36	88.9966
APRIL	142.609	128.403	86.0877
MAY	158.77	117.36	94.3724
JUNE	152.5	124.02	92.6437
JULY	162.76	129.28	99.7104
AUGUST	168.1	131.28	107.424
SEPTEMBER	165.59	130.69	108.615
OCTOBER	175.29	137.68	109.119
NOVEMBER	175.22	138.99	112.332
DECEMBER	182.495	150.16	118.08
<b>TOTAL</b>	<b>1901.56</b>	<b>1545.38</b>	<b>1169.15</b>

**Source: Central Bank of Kenya, figures are in Ksh Billions**

**APPENDIX III: Data Collection Form**

<b>YEAR</b>	<b>LIQUIDITY</b>
<b>2011</b>	
<b>2012</b>	
<b>2013</b>	