



ISSN 2278 – 0211 (Online)

Sustainable Development through Green Innovative banking 3p's

Olaoluwa P. Aasa

Teaching Assistant, Department of Project Management Technology, School of Management Technology,
The Federal University of Technology, Akure, Ondo State, Nigeria

Titilope Francis Adepoju

Teaching Assistant, Department of Project Management Technology, School of Management Technology,
The Federal University of Technology, Akure, Ondo State, Nigeria

Olutoye Aladejebi

Teaching Assistant, Department of Project Management Technology, School of Management Technology,
The Federal University of Technology, Akure, Ondo State, Nigeria

Abstract:

The study examines the role play by banks in sustainable development through green innovative 3P's (products, paths and processes). The study is a cross-sectional survey of deposit money banks' customers in Akure metropolis. The relative effectiveness index (REI) and Pearson correlation were used to capture the effectiveness and the association existing between the 3P's and sustainable development. The study found that automated teller machine, mobile banking application, mobile/SMS banking or short code banking, point of sales (POS), email, social banking and online banking are the major green innovative banking 3P's common to banks. These 3P's are more effective in areas of installation/first use experience/registration, quality and performance of the expected services unlike network/service availability, bank's response to complaint from usage of the product and cost of usage that are of least effectiveness. The 3P's effectively contribute to easy access to fund for business transactions, respect for human right and financial inclusion among others. Effective green innovative banking 3P's contribute significantly to sustainable development with a positive correlation of 0.367 and a significant probability value of 0.004 less than 0.01 (1-tailed). Despite the level of effectiveness of these 3P's customers still complain about delay in the replacement of ATM cards, frauds associated with the use of green innovative banking 3P's and inaccessibility of service centres to visually impaired people which is the reason why the study recommended timely response to complaints on the 3P's concerned as this is a major way to improve their effectiveness.

Keywords: Sustainability, sustainable development, green banking, innovation, product, process, path

1. Introduction

The financial institutions are among the driving engines of a nation's economy. Emmanuel and Adegboyega (2014) observed that there seems to be a consensus in the literature among researchers on banks' role in ensuring technological innovations through the role they perform in the area of allocating savings to entrepreneurs. This provides the best chance for successful use of such fund to produce an innovative product that adds value to the macro economy. Because many companies, tiers of government, and individuals are dependent on the financial services of the banks, it can be said that the latter play an important role in every aspect of human activities (Gelder, 2006) and this suggest their business leading function.

The environment within which banks operate is complex and susceptible to uncontrolled human activities such as exploitation of natural resources. Pressure on the resources that are available for noticeable development especially, the natural resources has resultant harmful effects on human existence. Banks and other financial institutions according to (Gelder, 2006) often times carry out operations which are harmful to the environment, human rights and social equality. In particular, their internal activities according Pinter, Deutsch and Ottmar (2005) has environmental effects. Even though these effects might be low if compare to other sector of the economy, it is evident the use of water, energy, and amount of waste generated during their service to customers cannot be overlooked. For instance, paper wastes from forest resource and fuel from crude oil, when burnt release unfavourable gas called carbon monoxide (CO) into the atmosphere. These hamper the "natural order" and lead to macro issues such as climate change, water scarcity and the shortage of natural resources etc. This means banks are one of the power agents for change to take place in this regard. With this knowledge, banks become aware that not only is their reputation affected, they are also exposed to environmental and social risks induced by their activities and those they pass to the customers which in the long run impact their position and wellbeing (KPMG

Advisory NV & WWF Schweiz, 2012). Green banking is an approach for addressing this issues and a way of sustaining economic growth by creating a business in the financial world (Rajesh and Dileep, 2004). This approach takes into consideration the social, environment and economic impact aimed at protecting and preserving the environment. Through this approach banks as the heartbeat driving money supply and economic position of the nation have a special obligation to involve in only activities that seek greater good. As a result, they ought to weigh the financial implications of every decision but also sustainability issues such as diversity, climate change, human right, and so on. (Finacle, 2012).

Rajesh and Dileep (2015) observed that bank contribute to sustainable development through green transformation of internal operations and environmental responsible financing. Sustainable development can be achieved through green innovations when product and services of banks do not constitute pollution to the environment (Pinter, Deutsch & Ottmar, 2005). Nigerian banks in their pursuit of sustainability in the sector have subscribed to Nigerian Sustainable Banking Principles (NSBP) jointly signed by committee of bankers in June, 2012 (CBN, 2012). Individual banks have introduced various strategies to this effect. A noticeable approach to the implementation of this strategy in nearly all the banks in Nigeria is innovative banking coined as “Green Innovative Banking” (GIB). This approach involves the use of electronic mediums in rendering services to customers, specifically, the 3 P’s (product, path and process). The effectiveness of various initiatives in banks to support GIB operations differ from bank to bank, hence, the reason why bank customers complain about the quality of service they receive as a result of using these services. Customers oftentimes want to ignore the use of these services for this reason. This, in one way or the other has negatively affected the ease with which people carry out their economic activities. This has negative implication for sustainable development through economic growth. In line with this, the study’s main objective was to effects of green innovative banking 3P’s (product, path and process) on sustainable development through economic growth. Specifically, the study identifies green innovative banking 3P’s of some selected banks in Nigeria whilst examining their effectiveness of green innovative banking 3P’s and subsequently highlighting their perceived contributions to sustainable development.

2. Review of Related Literature

2.1. Sustainable Development

The term ‘sustainable development’ even though its use becomes more frequent lately, has existed for more than four decades considering the available pieces of literature. The major revision in the development orientation as observed by Barbier (1987) has a major concern for economic development in the 1970s prompted the ‘basic needs strategy’ which triggered the use of the term. This development demanded improving the basic needs of the less privileged. However, he observed that the change proposed may not be visible in the less developed economy if there is no formulation and implementation of strategies that make the environment more sustainable in the distance future and that such strategies must promote social values.

This issue was raised by the International Union for the Conservation of Nature’s publication of 1980 on the world conservation strategy making it one of the first reference to sustainable development as a global priority and as a term. But the most recent and probably the first definition of sustainable development is associated with the United Nations World Commission on Environment and Development report of 1987 titled ‘Our Common Future’ commonly refers to as the Brundtland Report. Thus,

“Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- The concept of ‘needs’, in particular, the essential needs of the world’s poor, to which overriding priority should be given; and
- The idea of ‘limitations’ imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.” (*World Commission on Environment and Development, Our Common Future (1987) cited in Wikipedia (2016)*)

This submission is in relation with the UN Rio summit of 1992 decision where the Heads of States/Governments agree that the concept of sustainable development is unique in its agreement with the “development needs not at the expense of the environment”. That “environment can be protected via responsible economic development patterns and this approach would ensure a healthier society in which human beings could fulfil their potential while living in harmony and in relative prosperity”. This supports the principle of ‘intergenerational equity’, that is, ‘present decision does not reduce intergenerational equality in access to resources (UN System Task Team on the Post-2015 UN Development Agenda, 2012). “It is typically understood that this ‘intergenerational equity’ would be impossible to achieve in the absence of present-day social equity if the economic activities of some group of people continue to jeopardize the well-being of people belonging to the other groups or living in the other part of the world” (Soubbotina, 2004). Consider a situation in which a pharmaceutical company in a bid to find a solution to a prevalent disease in a particular community, exploit the vegetation in another community which has been seen to be the major cure of the disease thereby exposing the latter community to erosion and flooding which the vegetation is meant to prevent. Even though the company is gaining economic benefit from providing a solution to a social issue, it is being done at the expense of the environment of the other community.

In the context of business, the International Institute for Sustainable Development (2010) citing Barbier (1987) believed that sustainable development is all about business strategies and actions that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing the human and natural resources that it will use in the future.

It follows from the foregoing that a sustainable development beyond taking care of the economy aspect must consider social and environment issues that go with such economic pursuit. It seems in the implementation of the Millennium Development Goals

(MDGs) countries of the world focused more on issues relating to the social aspect of sustainable development. That is why the implementation of Sustainable Development Goals (SDGs) which repeal the MDGs will fill the lacunae in the latter especially the number thirteen of the goal which supports environmental sustainability thereby incorporating equal consideration for social, economic and environmental issues.

2.2. Triple-Constraint for Sustainable Development

From the above explanation on sustainable development, it could be deduced that sustainability is all about “a balance or harmony between economic sustainability, social sustainability and environmental sustainability” (Silvius & Schipper, 2010). These variables thus become the standard for judging any effort aimed at contributing to sustainable development. Elkington (1997) referenced by Silvius and Schipper (2010) in his book, “Cannibals with Forks: The Triple Bottom-line of 21st Century Business” itemized this triple bottom line or ‘Triple-P (People, Planet, Profit)’ (Silvius & Schipper, 2010).

- i. People (relates to Social Sustainability)
- ii. Planet (relates to Environmental Sustainability)
- iii. Profit (relates to Economic Sustainability)

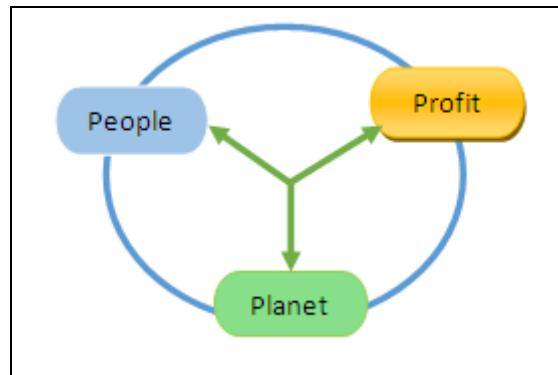


Figure 1: Triple-Constraint for Sustainable Development

In sustainable development, economic, environmental and social aspects must be considered hand-to-hand since they are interrelated and influence each other.” Environmental awareness requires from economic actors to pay stressed attention to environmental dimension in their operation, and to analyze ethical and moral considerations too, namely, society, and organizations have to replace their traditional bottom-line approach with the ‘triple bottom-line’ view” (A Maturity Model for Integrating Sustainability in Projects and Project Management, Silvius & Schipper, n.d.) i.e. making decision (sustainable) at the intersection of the three dimension. This persuasive philosophy according to Business Strategies for Sustainable Development (1992) must be contributed to by every participant in the global economy, consumers/clients and government alike and must garner momentum in participation if today’s needs will be met without compromising that of the future generation to meet their own. However, Silvius & Schipper (n.d) noted that regional differences exist with regards to the relative emphasis placed on each pillar. In Western Europe for instant, sustainability is mainly about environmental concerns, where in Africa the social concerns seem to be prevailing. In an increasingly globalized economy, however, these differences should diminish over time and the commitment of every sector of the economy must in addition be effective for it to enjoy the long-term benefits of sustained development.

2.3. Green Banking

Green banking is an aspect of sustainable banking. According to Clements-Hunt, O’Sullivan, & Malo, (n.d) in United Nations Environment Programme (UNEP) Finance Initiative CEO briefing, sustainable banking “is about ensuring long term business success, while contributing towards economic and social development, a healthy environment and stable society”. Sustainable banking contributes to meeting the present needs without compromising the tendency of the future generations to meet their needs. It is about preserving the environment and biodiversity for future generation, and being cautious with the natural resources and climate while carrying out banking operations (Gelder, 2006).

Banking sector, even though does not have noticeable direct impact on the environment if compare to manufacturing and extractive sectors, have a major role to play in ensuring sustainable development through their operations especially, environmental sustainability. This they do through green banking. Rajesh and Dileep (2004) in “Role of Banks in Sustainable Economic Development through Green Banking” described green banking as “the efforts of the banking sector to keep the environment green and to minimize greenhouse effects through in-house operational activities and green finance”. Former Governor of Central Bank of Nigeria, Mallam Sanusi Lamido Sanusi in FMO-Entrepreneurial Development Bank, (2011) report stated that, “the need for Nigerian banks to integrate Sustainability into their business processes cannot be overemphasized. Nigerian banks should not be using the savings of Nigerians to finance foreign companies whose operations damage Nigeria”.

Singh & Singh (2012) in “An Effective and Resourceful Contribution of Green Banking towards Sustainability” cited by Rajput, Kaura, & Khanna (2013) highlighted that green banking “signifies encouraging environmental-friendly practices and plummeting

carbon footprint from banking activities through various acts such as – online banking instead of branch banking, opening up CDs and money market accounts at online banks, instead of large multi-branch banks etc. Analysis of the concept and need of green banking in business process gave the conclusions that to make our environment human friendly and enrich the sustainability there is paramount call for creating awareness, implementing and following green banking as much as possible in today's business world of pioneering technologies".

2.4. Global Green Banking Framework

Specific sustainable banking framework is being developed by countries of the world. Oyegunle & Weber (2015) identified seven countries and their sustainable financial regulation. In the list are Bangladesh, Brazil, China, Colombia, Indonesia, Mongolia and Nigeria. Whilst Brazil, China, Indonesia, Mongolia and Nigeria make the implementation of the framework mandatory, Bangladesh, Colombia, and Indonesia make it voluntary. The name of sustainable policy, year of launch and sector application by various countries are shown in table 1.

Country	Name of Policy	Year(s) of Launch	Sector Specific (If Applicable)	Codes (Voluntary or Involuntary)
Bangladesh	Environmental Risk Management (ERM) Guideline	2011	No	Voluntary
Brazil	Protocol Verde Socio-Environmental Liability Policy	2009, 2012	Yes - Amazon Resolution - Sugar Cane Resolution - Slave Labour Resolution - Internal Capital Adequacy Assessment Process (ICAAP)	Voluntary (Green Protocol) Mandatory
Colombia	Green Protocol (Protocolo Verde)	2012	No	Voluntary
China	Green Credit Guidelines	2007, 2012, 2014	Yes	Mandatory
Indonesia	Roadmap for Sustainable Finance in Indonesia	2014	No	Mandatory
Mongolia	Mongolian Sustainable Finance Principles and Sector Guidelines	2014	Yes - Agriculture Sector Guideline - Construction and Infrastructure Sector Guideline - Manufacturing Sector Guideline - Mining Sector Guideline	Mandatory
Nigeria	The Nigerian Sustainable Banking Principles	2012	Yes - Power; - Agriculture; - Oil and Gas	Mandatory

Table 1: Global Green Banking Framework

Source: Oyegunle & Weber (2015). *Development of Sustainability and Green Banking Regulations: Existing Codes and Practice. CIGI Paper, No 65*

2.5. Global Initiatives on Green Banking

A number of initiatives are being put in place by global agencies in collaboration with national governments to ensure voluntary adoption of sustainability principles. Some Nigeria banks have subscribed to the under listed initiatives.

- United Nations Environment Programme (UNEP-FI) on sustainable financing: This appear to be most partnered initiative in Nigeria banking sector. UNEP FI is a global partnership between UNEP and the financial sector providing opportunity for organizations to understand and respond to environmental considerations on financial performance. The body seeks to advance the cause of sustainability in the financial sector. UNEP FI with Netherlands Development Bank (FMO) and Access Bank organized a CEO roundtable on sustainable finance in Nigeria which led to the constitution of a Sustainability Working Group that commenced work on the agreed initiatives. Members of the working group are Access Bank, Diamond Bank, GT Bank, Standard Chartered Bank, Citibank and Zenith Bank. The working group are working in conjunction with the International Finance Corporation (IFC) and the Dutch Development Bank (FMO) (FMO-Entrepreneurial Development Bank, 2011).
- Equator Principles: Pertains to social and environmental risks in project financing. Group of over 70 financial institutions with operations in over 100 countries across the globe. The Equator Principles are a project finance industry standard for addressing environmental and social issues in project financing globally (Rajput, Kaura & Khanna, 2013; Access Bank., 2013).

- Global Reporting Initiative to develop globally accepted reporting guidelines on the economic, social, and environmental performance of companies, Governments and Non-Government Organizations. GRI's mission is to develop and disseminate globally applicable sustainability reporting guidelines. These are set global standards for reporting on the economic, environmental and social dimensions of an organization's activities, products and services (Finacle, 2015).

2.6. Nigeria Sustainable Banking Principles

These principles were agreed on by Bankers' Sub-Committee of Economic Development and Sustainability and Sector Regulators with Financial Sector Providers and became operational in the third quarter of 2012, precisely September 26. The principles are nine but principle 2 expressly mention environmental and social sustainability of banks.

➤ Principle 2 | Our Business Operations: Environmental and Social Footprint

We will avoid, minimize or offset the negative impacts of our Business Operations on the environment and local communities in which we operate and, where possible, promote positive impacts.

What does this Principle mean?

Seeking to lead by example, a Bank will consider the direct impacts on the environment and society arising from its own Business Operations. A Bank will work to be a driving force for good in the communities and natural environment in which it operates by finding ways to avoid, minimize or offset negative impacts whilst innovating new means to achieve positive gains. This approach requires the management of a Bank's E&S footprint through:

- Efficient use of materials and resources such as energy and water consumption and effective waste management in physical operations and supply chains;
- Compliance with applicable labour and social standards; and
- Alignment of a Bank's community investment programmes with Nigeria's overall goals for economic and social development (e.g. promoting greater access to finance and basic needs in the community, reducing poverty, improving health, increasing long-term employment, driving economic empowerment of women, etc.)

This would also include the assessment of the E&S commitment, capacity and track record of its suppliers, contractors and third party providers. By behaving in a responsible manner and upholding the standards it will require of its own clients, a Bank demonstrates a credible and consistent commitment to Sustainable Banking.

Source: Central Bank of Nigeria, 2012

2.7. Approach to Green Banking

There are two approaches to green banking as identified by Rajesh and Dileep (2015). These include Green transformation of Internal Operation and Environmental Responsible Financing.

1) *Environmental Responsible Financing*: It is a known fact that banks are veritable means of financing projects. Banks use their position as the financier of projects to ensure that only sustainable projects are provided with finance. "When banks consider financing projects, they naturally assess and attempt to mitigate financial risk. Sustainable banking incorporates the evaluation of Environment and Social risk and the application of a comprehensive set of Environment and Social guidelines toward the decision to finance a project. Thus, a bank undertakes to provide loans to those projects whose sponsor demonstrate the ability and willingness to comply with policies and guidelines aimed at ensuring that the project is socially responsible and according to sound environmental practices" (Clements-Hunt, O'Sullivan, & Malo, n.d).

2) *Green Transformation of Internal Operation*: Banks introduce environmental friendly operations or improvement of their operations to be more environmental friendly. Most banks have computerized their operations and have introduced online/ internet banking platform which reduce physical presence of customers in the banks, thereby reducing the fume and radiation that will be generated if customer is to come with his car to the bank or reduce his exposure to radiation from the machine being used by the bank among others. It will also ensure more people have access to basic banking services as a result of services like mobile opening of bank account.

2.8. Green Innovation

Perhaps, the most noticeable and common green banking strategy among banks in Nigeria is green innovation banking. It is a major approach to green transformation of internal operations of the banks in Nigeria. It has affected day to day operations in banks as well as services provided to their customers. Two areas have been identified for the application of green banking:

1) *Process Innovation*: Banking involve introducing technology solutions to provide innovation in their process. They are contributing to safe-guarding the planet and indirectly the people while also accumulation enough profit through electronic dissemination of correspondents or communication to their customers-banks statements are being sent through mails ends end of the month balance. Even "the account originating solution could accept electronic documenting from customers and opening of account or originating loan". Communicating within the bank in and between branches are also being done electronically reducing reliance on paper prints and resource-driven physical interaction.

2) *Product and Path (Channel) Innovation*: The new technologies, particularly internet and electronic mobile devices like phones have made it possible for banks to register new customers without their physical presence in the bank premises, mobile apps and sometimes collaboration between banks and telecommunication operators. Transactions like online purchase of goods and recharging of mobile phone are also made possible through this strategy. These areas of application of green banking are refer to as green innovative banking 3P's, i.e. product, path and process.

2.9. Green Innovative Banking and Sustainable Development

Global estimates states that 2.5 billion people lack access to basic banking services. This population comprises of people in the rural areas, people with special ability, female population who by reason of culture or religion are restricted to a secluded environment and individuals who cannot read and write. Coincidentally most of them lack essential amenities such as safe drinking water and sanitation (Finacle, 2016). Any effort put in place to improve the economy of these people will contribute to their quality of life. This is an aspect that banks are becoming relevant to the development. The principle of "financial Inclusion" – "reaching the unbanked people" is now possible through green banking. The contribution of this group of people is to be expected to promote more than double impact on sustainable development especially, in developing economies where most of these people are found.

Along with socio economic activities (such as creation of jobs, generation of wealth, and eradication of poverty, entrepreneurial activity) that banks get involved in, they also promote environmental protection and activities to reduce carbon emissions by introducing green innovative banking 3P's. This is one way to improve quality of services being rendered by banks but also energy saving measure whilst addressing climatic and ecological changes.

3. Method

The study used cross-sectional survey research design. The population for this study comprises customers of selected deposit money banks. Banks were selected using stratified random sampling. Banks were classified into three categories based on CBN operation license criteria of November 2010, that is, regional, national and international banks with minimum capital base of N10billion, N25billion and N50billion respectively. This led to purposive selection of four and one bank(s) from national and regional banks groups respectively based on their level of involvement in sustainable practices. Both national and regional banks were selected because the study is interested in only indigenous deposit money banks. In no particular order, banks that emerged were: Access Bank Plc., First Bank Plc., Guaranty Trust Bank (GT Bank), Diamond Bank Plc. and United Bank for Africa (UBA) emerged from national bank category whilst Wema emerged from regional bank category. Secondary data were collected from reports, brochures, relevant published documents and websites of banks involved in the study. These were in addition to sources like online sources, journals, African Development Bank (AfDB) and UNEP published documents. Whilst primary data were obtained using structured questionnaire containing twenty-eight (28) items with both close and open ended questions and face-to-face interview. The questionnaire consists of four sections- sections A, B, C and D. While section A asked for basic information about the respondent, section B identifies green innovation 3P's of banks. Section C however, solicit response on effectiveness 3P's and section D asked about effectiveness of the contributions of green innovation banking 3P's to sustainable development. 260 responses emerged from the questionnaires distributed by the researcher and collected using online google form. Data from the study were analyzed using descriptive statistics of percentage and frequency counts as well as relative effectiveness Index (REI). This is a typical of Relative Importance Index used by Chan & Kumaraswamy (1997). The formula is as follows:

$$REI = \frac{\sum W}{A \times N}$$

[W= weighting given to each variable by respondents (1 to 5); A= the highest weight (i.e. 5 in this case); and N= total number of respondents. REI value ranges from 0 to 1 (0 not included). The higher the value of REI, the more effective the variable.]

Spearman Rank Order was the inferential statistics used to determine the strength of relationship among the variables in the stated hypotheses and subsequent testing of the stated hypotheses.

4. Results and Findings

4.1. Descriptive Information

4.1.1. Demographic Information of Banks' Customers.

Table 2 is the presentation of the demographic information on the banks' customers that participated in this research. Many of them fall between the ages 15-25 (55.8%), the next highest frequency (32.7%) represents those within ages 26-45 years. Those that are 46 and above were 11.6%. It must be noted however, that the 55.8% does not mean people within ages 15-25 are the most bank people rather, it shows that best information on these bank 3P's will be gotten from this young population since they appear to be more active in the usage of these 3P's than older population. General Customers like students are 44.3% of the total respondents, even though, servicemen and business men accounted for 28.8% and 26.9% respectively. Savings account owners are 88.5% of the entire respondents, 11.5% have current account and 1.9% have other account types.

	Frequency	Percent
Age		
15-25	145	55.8
26-45	85	32.7
46 and above	30	11.5
Total	260	100.0
Profession		
Service man (Civil or Private)	75	28.8
Business man	70	26.9
General Customer	115	44.3
Total	260	100.0
Bank		
Access	55	21.2
Diamond	15	5.8
First	45	17.3
GT Bank	90	34.6
UBA	20	7.7
Wema	10	3.8
Others	30	9.6
Total	260	100.0
Type of Account		
Savings	225	86.5
Current	30	11.5
Others (Fixed)	5	1.9
Total	260	100.0

Table 2: Demographic Information Distribution of Bank Customers

4.1.2. Green Innovative banking 3P's used by Banks

Seven innovative banking 3P's were identified to be popular with Nigerian banks. Those that do not seem to be prominent were classified as others. The list as presented in table 2 include: automated teller machine, mobile banking application, mobile/SMS banking or short code banking, Point of Sales (POS), email, social banking and online banking. Their usage among bank customers are in the order presented in table 3.

- *Automated Teller Machine* is the most used with rank 1. This is very true; most people are conversant with ATM. Even people who do not use it know there is a machine that brings out money if you put your card into it.
- *Mobile banking application* is not as popular as ATM, it was ranked second after ATM. People with smart phone, hi-pad, blackberry, etc. can easily install their bank's banking application on their device and will be able to perform transactions like recharge the mobile line, paying bills (power or DSTV), transfer money from one account to another, etc.
- *Mobile/SMS banking or Short Banking* is the third on the list and perhaps, the easiest to use. It is done through the dialing of certain code on mobile phone of any type or sending of message to one's bank code dedicated for the service an individual wants to be served. Some services like inter-bank money transfer will require the account number of the person receiving the money. The mobile number that will be used for the transaction must have been registered with the bank. This appears to be appropriate for people in remote areas who have no internet connection even though the services that can be enjoyed on it is limited. For instance, withdrawing of cash is not possible with. This limitation is being overcome by services like mobile money or *first monie* in the case of First bank (i.e. bank customer can collect money of carried out transaction with the help of bank agents who serve as middlemen between banks on the one hand and their customers on the other hand. Network provider deducts money from mobile phone number account bank customers from using this service. This is a specific constraint that will hinder some people from using the service especially if the cost is high.
- *Point of Sales (POS)*: The next on the list and fourth on the list of rank given by banks' customer is Point of Sales (POS). A Point-of-Sale (POS) terminal is a computerized replacement for a cash register. Much more complex than the cash registers of even just a few years ago, the POS system can include the ability to record and track customer orders, process credit and debit cards, connect to other systems in a network, and manage inventory. Generally, a POS terminal has as its core a personal computer, which is provided with application-specific programs and I/O devices for the particular environment in which it will serve. A POS system for a restaurant, for example, is likely to have all menu items stored in a database that can be queried for information in a number of ways. This innovative service allows easy transactions in large stores and malls. It can also be used for cash withdrawal in banking halls. It uses ATM cards.
- *Email*: After POS is the *Email* on the list. Most banks now send statements of account to their customers via the email address they provide during opening of account with the bank. Even transactions that involve withdrawal and deposit are sent to customers immediately it is carried out. In addition to these, banks have designated customer care email addresses through which they

communicate any information to their customer and customers as well can make any complaint through this means. Customer are usually encouraged not to use this means to send important information about their account. It is ranked fifth amongst others.

- *Social Banking* is ranked sixth. The term Social Banking represents any banking activities carried out via social media channels, primarily Facebook, Twitter, etc. All transactional services are offered via a highly secure social media application. It is not commonly used by most customers. Even only few banks use it for transaction except for promotion of services.
- *Net/Online banking* is last on the list, but it still finds usage with some customers of banks. It is the practice of making banking transactions via secure website of the respective bank. It allows customers to make deposits, withdrawals, money transfer and bills payment. To use the service, customers must possess an internet banking ID and a password provided by the bank in which the individual customer has an account.

Table 4 is presents the distribution of green innovative banking 3P's amongst banks. All the 3P's identified are in use in all the banks selected for this survey except social banking that is limited to few banks as indicated in the table.

	Mean	Rank
Automated Teller Machine (ATM)	1.6923	1.
Mobile Banking Application	1.4615	2.
Mobile/SMS banking	1.3846	3.
Point of Sales (POS)	1.2115	4.
Email	1.1538	5.
Social Banking	1.0962	6.
Net/Online	1.0192	7.
Others	1.0000	8.
Valid N (listwise)	260	

Table 3: Innovative Banking 3p's in Banks

	Access	Diamond	First	GTB	UBA	Wema
Mobile Banking Application	✓	✓	✓	✓	✓	✓
Automated Teller Machine (ATM)	✓	✓	✓	✓	✓	✓
Point of Sales (POS)	✓	✓	✓	✓	✓	✓
Net/Online/Internet Banking	✓	✓	✓	✓	✓	✓
Mobile/SMS banking	✓	✓	✓	✓	✓	✓
Email	✓	✓	✓	✓	✓	✓
Social Banking	–	–	✓	✓	✓	–

Table 4: Distribution of Green Innovative banking 3p's amongst Banks

4.1.3. Information on Usage of Green Innovative 3P's

The length of time or period of usage of these 3P's is very important in knowing how effective they are over the years. It will help to know how effective they are in term of performance, ease of usage, quality of services being served by them, as well as network or service availability. Most of the customers have been using the service(s) for more than three years (38.5%). These set of people must have seen the benefits and the shortcomings of these 3P's. It also shows that these 3P's have been in use for a long period of time which should have made the 3P's to have improved over the years. Fewer people than the former has use the 3P's for more than 6 months but less than a year (36.5%), although, 17.3% have used them for between 1 and 3 years. Very few respondents are notwithstanding new users (7.7%). In all, more than 50% have been using the 3P's for more than a year.

In the same vein, exactly 57.7% use the 3P's 2-3 times a week, 28.8% use the service once a week, approximately, 4 times a month whereas only 7.7% use the 3P's once a month, more than 5.7% that use the 3P's in number of times not specified. These information is presented in table 5

	Frequency	Percent
Period of Usage		
< 6 months	20	7.7
> 6 months < 1 year	95	36.5
1-3 years	45	17.3
>3years	100	38.5
Frequency of Use of 3P's		
Once a week	75	28.8
2-3 times per month	150	57.7
Once a month	20	7.7
Others (More than 3 times a month)	15	5.7
Total	260	100.0

Table 5: Information on Usage of 3p's

4.1.4. Effectiveness of Green Innovation banking 3P's

According to Business Dictionary, effectiveness is the degree to which objectives are achieved and the extent to which targeted problems are solved. It is "doing the right thing." Effectiveness can be measured in various ways as perceived by the receiver of a service or user of product. Some criteria were identified in relation to green innovative banking 3P's and evaluated in the aspect of effectiveness. They are: performance of the product or service, ease of usage and accessibility, quality of service and service or network availability to use the service. Others include: installation or first use experience, cost of usage and response to customer's complaint on the 3P's. Table 6 is the breakdown of bank customers' perception on these criteria in the area of their effectiveness. The relative effectiveness index (REI) was calculated for each measure to know the effectiveness of each of them in relation to others. Registration/installation experience was rated very high and was very effective. It has REI of 0.7923. Respondents are in a way comfortable with the registration/installation of the services they are using. The quality of services was ranked second (0.785), performance (doing what it is required to do) was third on the list (0.731), followed by ease of usage/ accessibility to the service. Network/service availability was not amongst the first three. This shows that the network for using this 3P's is not effective enough. It was first on the list of the last three with REI of 0.731. Next to it is response to customers' complaint from the usage of the 3P's. This appear to be very true since poor network most importantly when the customers need these 3P's will generate complaint from them. If the customers are enjoying the 3P's every time they will be ready to pay any amount for using the service but if this is not the case, they will complaint about the cost. That is why cost of usage / deduction from customers account have the least effectiveness relative to others with REI of 0.6846.

	Percentage					Mean	REI	Rank
	Not effective	Of little effectiveness	Moderately effective	Effective	Very effective			
Installation/First use experience/Registration	0.0	5.8	36.5	44.2	13.5	3.96	0.792	1.
Quality (of Service)	0.0	1.9	26.9	48.1	23.1	3.92	0.784	2.
Performance (Doing what it claims to do)	1.9	5.8	25.0	38.5	28.8	3.84	0.773	3.
Usage (Ease of usage and accessibility)	1.9	3.8	30.8	34.6	28.8	3.85	0.769	4.
Network/Service Availability	0.0	5.8	36.5	44.2	13.5	3.65	0.731	5.
Bank's response to your complaint from usage of the product(s)/service(s)	3.8	17.3	23.1	44.2	11.5	3.42	0.685	6.
Cost of usage/ Service Charge/ Deduction from your account	1.9	36.5	23.1	34.6	3.8	3.022	0.604	7.
Valid N (listwise)								

Table 6: Effectiveness of Green Innovative banking 3p's

4.1.5. Contribution of Green Innovative Banking 3P's to Sustainable Development

Green innovative banking 3P's contribute to both environmental, social and economic sustainability. This study sought the opinion of banks' customers on specific aspects of these sustainability criteria with a view to knowing the effectiveness of their contribution. Their relative effectiveness (REI) based on respondents' ranking are outlined below (table 7).

- Easy access to fund for business transactions and other purposes
- Respect for human right
- Financial inclusion (unbanked people have access to bank services irrespective of their religion or culture)
- Promote health and safety of customers and bank's staffs
- Gender inclusive economic
- Delivery of quality service
- Energy saving measures
- Active engagement of citizens in sustainable development
- Support for education advancement
- Special ability support
- Addressing climatic and ecological changes

	SSD	Not effective	Of little effectiveness	Moderately effective	Effective	Very effective	Mean	REI
Easy access to fund for business transactions and other purposes	ECS	0.0	3.8	34.6	36.5	25.0	3.827	0.765
Respect for human right	SCS	1.9	3.8	34.6	34.6	25.0	3.769	0.754
Financial inclusion (both male and female have access to bank services irrespective of their religion or culture)	ECS	5.8	1.9	32.7	28.8	30.8	3.769	0.754
Promote health and safety of customers and bank's staffs	SCS	3.8	13.5	23.1	30.8	28.8	3.673	0.735
Gender inclusive economic	SCS	0.0	7.7	34.6	40.4	17.3	3.673	0.735
Delivery of quality service	SCS	0.0	9.6	30.8	46.2	13.4	3.635	0.727
Energy saving measures	EVS	0.0	5.8	36.5	48.1	9.6	3.615	0.723
Active engagement of citizens in sustainable development	GNS	1.9	7.7	34.6	40.4	15.4	3.596	0.719
Supports education advancement	SCS		13.5	34.6	34.6	17.3	3.558	0.712
Special ability support	SCS	1.9	11.5	30.8	44.2	11.5	3.539	0.708
Addressing climatic and ecological changes	EVS	0.0	13.5	48.1	32.7	5.8	3.308	0.662
Valid N (listwise)		260						
SSD= Sustainable Development; ECS= Economic Sustainability; SCS= Social Sustainability; EVS=Environmental Sustainability; GNS=General								

Table 7: Contribution of Green Innovative banking 3p's to Sustainable Development

4.2. Sustainable Development through Green Innovative banking 3P's

The following hypotheses stated in null form were tested to determine the possibility of sustainable development through green innovative banking 3P's.

- Ho₁: Environmental sustainability through effective green innovative banking 3P's does not contribute significantly to sustainable development
- Ho₂: Social sustainability through effective green innovative banking 3P's does not contribute significantly to sustainable development
- Ho₃: Economic sustainability through effective green innovative banking 3P's does not contribute significantly to sustainable development
- Ho₄: Effective green innovative banking 3P's do not contribute significantly to sustainable development

Table 8 shows the correlation coefficients of the relationships stated in the three hypotheses. It also displays the significant probabilities for testing the stated hypotheses.

4.2.1. Effective Green Innovative Banking and Sustainable Development

The result of spearman correlation ran to determine the relationship between effective green innovative 3P's and sustainable development as presented in table 9 give a correlation coefficient of 0.367. This is a weak but positive relationship. The significant probability for this relationship was 0.004. Since correlation is significant at 0.01 level for this relationship and the significant probability (0.004) is less than 0.01, the null hypothesis H_{04} is rejected, hence, the acceptance of the alternate hypothesis. Effective green innovative banking 3P's contribute significantly to sustainable development.

4.2.2. Triple Constraints of Sustainable Development (Environmental, Social and Economic Sustainability) through Effective Innovative Banking 3P's and Sustainable Development

The result of spearman correlation ran to determine the relationship between the triple constraints of sustainability-environmental, social and economic sustainability and sustainable development give correlation coefficients of 0.612, 0.952 and 0.604 in that order as displayed in table 8. While there are *moderate* positive relationships between environmental sustainability and sustainable development and economic sustainability and sustainable development, there exist a *strong* positive relationship between social sustainability and sustainable development. All the three relationships have significant probabilities of .000 each. Since correlations are significant at 0.01 level for these relationships and the significant probabilities (0.00) are less than 0.01, the null hypotheses H_{01} , H_{02} , H_{03} were rejected, hence, the acceptance of the alternate hypotheses. It can therefore, be stated that:

- i. Environmental sustainability through effective green innovative banking 3P's contribute significantly to sustainable development.
- ii. Social sustainability through effective green innovative banking 3P's contribute significantly sustainable development.
- iii. Economic sustainability through effective green innovative banking 3P's contribute significantly sustainable development.

			EVS	SCS	ECS	SSD=f(EVS, SCS, ECS)	GIB
Spearman's rho	EVS	Correlation Coefficient	1.000				
		Sig. (2-tailed)	.				
		N	52				
	SCS	Correlation Coefficient	.482**	1.000			
		Sig. (2-tailed)	.000	.			
		N	52	52			
	ECS	Correlation Coefficient	.348**	.501**	1.000		
		Sig. (2-tailed)	.006	.000	.		
		N	52	52	52		
	SSD	Correlation Coefficient	.612**	.952**	.604**	1.000	
		Sig. (2-tailed)	.000	.000	.000	.	
		N	52	52	52	52	
	GIB	Correlation Coefficient	.319*	.361**	.279*	.367**	1.000
		Sig. (2-tailed)	.011	.004	.023	.004	.
		N	52	52	52	52	52

SD= Sustainable Development; ECS= Economic Sustainability; SCS= Social Sustainability; EVS=Environmental Sustainability; GNS=General

** . Correlation is significant at the 0.01 level (1-tailed).

* . Correlation is significant at the 0.05 level (1-tailed).

Table 8: Relationship between Green Innovative banking 3p's and Sustainable Development

4.2.3. Complaints Associated with the Use of Green Innovative Banking 3P's

The following are some complaints associated with the use of green innovative banking 3P's as found during survey. Most of the complaints are associated to the use of ATM due to the fact that it is the most used of the banking innovation in A. 2).

- Delay in the replacement of ATM cards
- Frauds are associated with the use of green innovative banking 3P's
- Inaccessibility of service centres to visually impaired people
- Jamming of ATM
- Non-domestication of ATM
- Sometimes ATM do not disburse fund

4.2.4. Improving Green Innovative 3P's

Bank customers made the following suggestions on how green innovative 3P's can be improved.

- By listening to customers' complaints and responding to them on time so that the customers can have access to the product, process or path concerned.
- The rate charged on the transaction between two different banks should be reduced
- Regular upgrade of banks' website to make usage easy.
- Individual banks should monitor their customers' transactions with other banks so as to ensure they are effectively served.
- Services should be extended to rural areas

4.3. Discussion of Findings

Banks in Nigeria have instituted various ways of implementing Nigeria Sustainable Banking Principles jointly agreed on by committee of bankers in Nigeria as found in this research. The most noticeable and common of these strategies has found in this research is the introduction of green innovative banking 3P's. Different green innovative 3P's are being used to serve bank customers in Nigeria. Based on their acceptance or usage amongst customers, they are: automated teller machine, mobile banking application, mobile/SMS banking or short code banking, Point of Sales (POS), email, social banking and online banking.

Banks' customers perceived the effectiveness of green innovative banking 3P's in different ways. However, they generally ranked installation/first use experience/registration first in term of relative effectiveness index (REI). This appears very true since this is the first area that banks use to serve their customers. Banks' representatives carefully introduced the services to the customers and most times even help them to register or install the service on their device. This particular effectiveness criterion is packaged to attract customers to use a specific service. Quality of service was ranked second. This was closely followed by performance of the service, seeing as its ability to do what it claims to do. These 3P's do what they claim to do but the customers may not be satisfied as they are when they are being introduced to the service. Ease of usage/accessibility ranked as fourth was more effective than network/service availability. The position of network/service availability (first amongst the last three) is evident from common experience in most cases in the usage of these 3P's especially the one that require the usage of bank's network like the automated teller machine. Transactions cannot be carried out successfully on the machine if the network in customer's bank is no available even if the machine being used is having network. To the banks' customer, this is a poor service and it will result to complaint from them which sometimes takes time before resolution. Any deduction from banks' customer account when they experience difficulty from using any of the 3P's will not be acceptable to them.

Green innovative banking 3P's contribute to sustainable development in a number of ways. These contribution as opined by banks' customers include: easy access to fund for business transactions and other purposes, respect for human right, financial inclusion (unbanked people have access to bank services irrespective of their religion or culture), promote health and safety of customers and bank's staffs, promote gender inclusive economic and delivery of quality service. Others are: energy saving measures, active engagement of citizens in sustainable development, support for education advancement, special ability support and addressing climatic and ecological changes.

The triple components of sustainable development (environmental, social and economic sustainability) through effective green innovative banking 3P's contributes significantly to sustainable development, nonetheless, the strength of relationship between the triple constraints and sustainable development varies. According to the results of spearman rank coefficients, environmental sustainability and economic sustainability have moderate relationship with sustainable development, whilst social sustainability has a strong relationship with sustainable development. Congruently, effective green innovative banking 3P's contribute significantly to sustainable development. The relationship between these two variables was notwithstanding weak. This explains the reason behind the complaints of banks' customers on these 3P's. Banks generally are not living up to the expectations of customers who are using these services; complaints, in most cases are not attended to for immediate usage of the service they intend to use. Complaints on 3P's include: delay in the replacement of ATM cards, frauds are associated with the use of green innovative banking 3P's, inaccessibility of service centre to visually impaired people, jamming of ATM, non-domestication of ATM and failure of ATM to disburse fund.

Bank customers suggested an improvement in these innovative 3P's through using of improved technology that will allow easy inter-bank transactions involving the use of this 3P's and prompt response to complaints from their customers. They also suggested reduced service charge on the 3P's and extension of services to rural areas.

5. Conclusions

This paper examined sustainable practices by banks; with specific reference to green innovative banking 3P's (product, process and path) that banks serve their customers. The study has shown that common green innovative 3P's in Nigeria banks include: Automated Teller Machine, mobile banking application, mobile/SMS banking, Point of Sales (POS), email, social banking and net/online banking. Automated Teller Machine (ATM), mobile banking application and mobile/SMS banking are the most use by bank customers unlike net/online banking which is seldom used by them, especially those with little or no education. It is evident from the study that banks perform well in measures of effectiveness such like installation and registration of customers for the service, performance and ease of usage. But they have not done well in handling their customers' complaints and these has made the service charge on customers to appear high to them (customers).

Effectiveness of these 3P's contribute to both environmental sustainability, social sustainability and economic sustainability which in turn promote sustainable development. Thus, green innovative banking 3P's contribute to sustainable development. They do not only address climatic and ecological changes, support education advancement, promote health and safety of banks' customers and staffs, they also support involvement of people with special abilities, quality service delivery and respect for human right among others. The

effective contribution of the 3P's notwithstanding, need improvement since the relationship between green innovative 3P's in Nigeria is weak base on the available evidence from the study; indicating the need for banks to improve on the 3P's through listening and responding to customers' complaints as well as using improved technology that will make the 3P's easy for customers to use.

6. Recommendations

Sustainability issues are not the concern of banks and other financial institution alone, yet, their effective contribution indirectly make it possible for all and sundry to be involved in sustainable practices. Therefore, it is very important that the 3P's are presented in such a way that will make them attractive to their customers and the unbanked population (especially, people in rural areas and those with special ability). These can be done through the following:

- i. Complaints of the existing bank customers must be handled effectively and on time as these services fail customers at critical moments.
- ii. Secure and efficient network should be used to serve customers these services.
- iii. More service centers (most importantly, ATM) should be located in strategic places such as market areas, shopping mall and other areas where the service may be required.
- iv. Services like mobile/SMS banking should be introduced to customers the more in local languages so that people without internet connection can easily use them when necessary.
- v. Since most rural areas are not well served with internet service, mobile/SMS banking should be complimented with mobile money centers in these areas.

7. References

- i. Access Bank. (2013). Access Bank: Leading Sustainability. Lagos: Zenith Bank.
- ii. Barbier, E. B. (1987). The Concept of Sustainable Economic Development. Retrieved from Research Gate: <https://www.researchgate.net/publication/231829502> on 5/08, 2016
- iii. Business strategies for sustainable development. (1992). In Strategy for Sustainable Development: Leadership and Accountability for the 90s. International Institute for Sustainable Development in conjunction with Deloitte & Touche and the World Business Council for Sustainable Development.
- iv. Chan, D.W.M and Kumaraswamy, M.M. (1997) 'A comparative study of causes of time overruns in Hong Kong construction projects', International Journal of Project Management, 15 (1), 55-63
- v. Clements-Hunt, P., O'Sullivan, N., & Malo, F. (n.d.). Sustainability Banking in Africa. France: UNEP Financial Initiative.
- vi. Emmanuel, O. O., & Adegboyega, E. (2014). Banks and Economic Growth in Nigeria: A Re-Examination of the Financial Repression Hypothesis. American Journal of Business and Management, 1-9.
- vii. Finacle. (2016). The Role of Technology in Building Sustainable Banking. Thought Paper. Bangalore, India: Infosys Limited. Retrieved from Infosys Finacle: www.infosys.com/finacle
- viii. FMO-Entrepreneurial Development Bank. (2011, November 12). Nigerian banking sector demonstrates commitment to sustainable banking practice. Retrieved from FMO-Entrepreneurial Development Bank: <https://www.fmo.nl/k/n1771/news/view/1264/20819/nigerian-banking-sector-demonstrates-commitment-to-sustainable-banking-practice.html> retrieved on 22/08/2016
- ix. Gelder, Jan Willem van. (2006). The do's and don'ts of Sustainable Banking: A Bank Track Manual. BankTrack.
- x. KPMG Advisory NV; WWF Schweiz. (2012). Environmental Performance of Swiss Banks: Shifting Gears towards Next Generation Banking. Netherlands: KPMG.
- xi. Oyegunle, A., & Weber, O. (2015). Development Of Sustainability And Green Banking Regulations Existing Codes and Practices. Centre for International Governance Innovation, 1-24.
- xii. Rajesh, T., & Dileep, A. (2014). Role of banks in sustainable economic development through green banking. International Journal of Current Research and Academic Review, Volume 2. Number 12. 136-141. Retrieved from www.ijrcr.com.
- xiii. Rajput, N., Kaura, R., & Khanna, A. (2013). Indian Banking Sector towards a Sustainable Growth: A Paradigm Shift . International Journal of Academic Research in Business and Social Sciences, 290-304; Vol. 3, No. 1.
- xiv. Rajput, N., Kaura, R., & Khanna, A. (2013). Indian Banking Sector towards a Sustainable Growth: A Paradigm Shift. International Journal of Academic Research in Business and Social Sciences, 1-15; Vol. 3, No. 1.
- xv. Silvius, A., & Schipper, R. (2010). A Maturity Model for Integrating Sustainability in Projects and Project Management. 1-6.
- xvi. Soubbotina, T. P. (2004). Beyond Economic Growth: An Introduction to Sustainable Development (Second Edition). Washington, D.C.: The International Bank for Reconstruction and Development/THE WORLD BANK.
- xvii. UN System Task Team on the Post-2015 UN Development Agenda. (2012). Building on the MDGs to bring sustainable development to the post-2015 development agenda. United Nations.