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## Green Banking Practices and Green Financing of Listed Deposit Money Banks in Nigeria

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**ABSTRACT:** *This study examined the nexus between green banking practices and green financing sources of listed deposit money banks in Nigeria. The study anchored on the institutional theory and cross sectional survey research design was adopted with a population consisting of listed banks in Nigeria. The study used stratified random sampling of seven hundred and fifty (750) bank employees with questionnaire as the primary source of data collection from the respondents while only five hundred (500) were used for data analysis using univariate, bivariate and multivariate methods of data analysis. The results from the regression analysis disclosed that banks' employee-related practices of green banking positively and significantly influence sources of green financing of deposit money banks in Nigeria; banks' daily operations-related practices of green banking positively and significantly affect sources of green financing of deposit money banks in Nigeria; banks' customers-related practices of green banking positively but significantly influence sources of green financing of deposit money banks in Nigeria; banks' policy-related practices of green banking positively and significantly influence sources of green financing of deposit money banks in Nigeria and banks' green investment related practices of green banking positively and significantly impact on sources of green financing of deposit money banks in Nigeria. Consequently, on the basis of the findings the study concluded that green banking practices positively influences the sources of green financing of deposit money banks in Nigeria. Therefore, the study recommends amongst others that banks' in Nigeria should adopt contemporary banking practices that are ecofriendly as a means of enhancing the sources of green financing in Nigeria.*

**KEYWORDS:** Green Banking Practice, Sources of Green Finance, Nigeria

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### INTRODUCTION

The concerns for environmental issues is expanding nationally and internationally due to the problems of climate change affecting the world such as excessive flooding, storms, earthquakes, excessive heat and rainfall etc. According to Chen et al (2022), the apprehension for

environmental associated problems is rising worldwide and recently, businesses and institutions, leading to the establishment of methods of managing climate problems. Zheng et al (2022) argue that nations have implemented several policies to minimize the risks of unfavorable environmental impacts of climate change. Hossain (2018) noted that some of the major methods established to prevent the degradation of the environment include the introduction of green banking and finance, which is consistent with global best practice and promotion of sustainable economic growth and development. Sun et al (2020) argued that the idea of green banking and finance has encouraged banking institutions to introduce paperless, technology-based services, and to sustain their role as a responsible entity in sustainable development while minimizing the impact on the environment. Green banking performs an essential role in the attainment of sustainable development of any given nation. According to Hassan et al (2022), green banking is the investment solutions that guard the environment, provide social justice, and establish economic attainment conveying preference in the banking industry to safeguard banks and society against unforeseen impending economic concerns (Guang et al, 2022; Ziolo et al 2019) such as international economic volatility, environmental alteration, public disturbance, and corporate failures. Chen et al (2022) noted that green banking is a fundamental antecedents to the creation of an effective green economy which supports the economic advancements of developing nations and a means to attain sustainability through low energy consumption and pollution (Liu et al, 2020; Zheng et al (2021).

Extant literature indicated that several empirical studies have been conducted in the field of green banking and finance, internationally such as (Sarma & Roy, 2020; Ngwenya & Simatele, 2020; Bose et al, 2018; Malsha et al, 2020; Khairunnesa et al., 2021; Rehman et al., 2020; Sharmeen, et al., 2019). Nevertheless, these studies are essentially concentrated on green banking activities and its development in emerging economies (Khairunnesa et al., 2021; Hoque et al., 2019); green banking adoption (Rehman et al., 2020; Zhixia et al., 2018); green banking performance and environmental sustainability (Zhixia et al, 2021; Bose et al, 2021); and green finance (Zheng et al., 2021). In addition, a few of studies have been carried out to measure the influence of green banking practices on banks' environmental performance in Pakistan (Rehman et al., 2021), Nepal (Risal and Joshi, 2018), India (Vidyakala, 2020), SriLanka (Shaumya & Arulrajah 2017), Bangladesh (Khairunnesa et al 2021), France (Park and Kim, 2020). Shaumya and Arulrajah (2017) investigated the effect of green banking practices on banks' environmental performance in Sri lanka. The study established that green banking practices positively and significantly impact on banks' environmental performance. Also Rehman et al (2021) indicated that green banking practices positively affects bank's green projects. Different researchers have investigated certain aspects of green banking and finance practices from divergent perspectives. Among such researchers, but not limited to them, are (Hossan et al, 2020; Linh & Anh, 2017; Redwanuzzaman, 2020; Pawar & Munuswamy, 2020; Pariag-Maraye et al, 2017; Hasan et al, 2022; Shaumya & Arulrajah, 2017; Chen et al, 2022; Risal& Joshi, 2018; Desalegn et al, 2022; Deng et al, 2022; Li & Yang, 2022; Fang & Shao, 2022; Guang-Wen & Siddik, 2022; Ye et al, 2022; Yan et al, 2022; Zeng et al, 2022). All of these studies were done in countries other than Nigeria. Furthermore, they have not supplied sufficient empirical evidence on how green banking practices can influence

banks' environmental performance and green financing of deposit money banks in Nigeria. It is expedient to empirically investigate the extent to which green banking practices have affected banks environmental performance and green financing either favourably or unfavourably of the Nigerian banking industry. This is the research knowledge gap in the literature which this study seeks to fill with empirical evidence.

However, there exist few studies on green banking practices on banks' environmental performance and the sources of green financing on deposit money banks in Nigeria. As such, this study intends to fill the earlier recognized research gap by investigating the effects of green banking practices on environmental performance and green financing of deposit money banks in Nigeria. The specific objectives are to:

1. investigate the relationship between banks' employee-related practices of green banking and sources green financing of deposit money banks in Nigeria;
2. determine the relationship between banks' daily operations-related practices of green banking and sources green financing of deposit money banks in Nigeria;
3. evaluate the relationship between banks' customers-related practices of green banking and sources green financing of deposit money banks in Nigeria;
4. investigate the relationship between banks' policy-related practices of green banking and sources green financing of deposit money banks in Nigeria;
5. determine the relationship between banks' green investment related practices of sources green banking and green financing of deposit money banks in Nigeria;

The study was guided with the following research questions:

1. What is the relationship between banks' employee-related practices of green banking and sources green financing of deposit money banks in Nigeria?
2. What is the relationship between banks' daily operations-related practices of green banking and sources green financing of deposit money banks in Nigeria?
3. What is the relationship between banks' customers-related practices of green banking and sources green financing of deposit money banks in Nigeria?
4. What is the relationship between banks' policy-related practices of green banking and sources green financing of deposit money banks in Nigeria?
5. What is the relationship between banks' green investment related practices of green banking and sources green financing of deposit money banks in Nigeria?

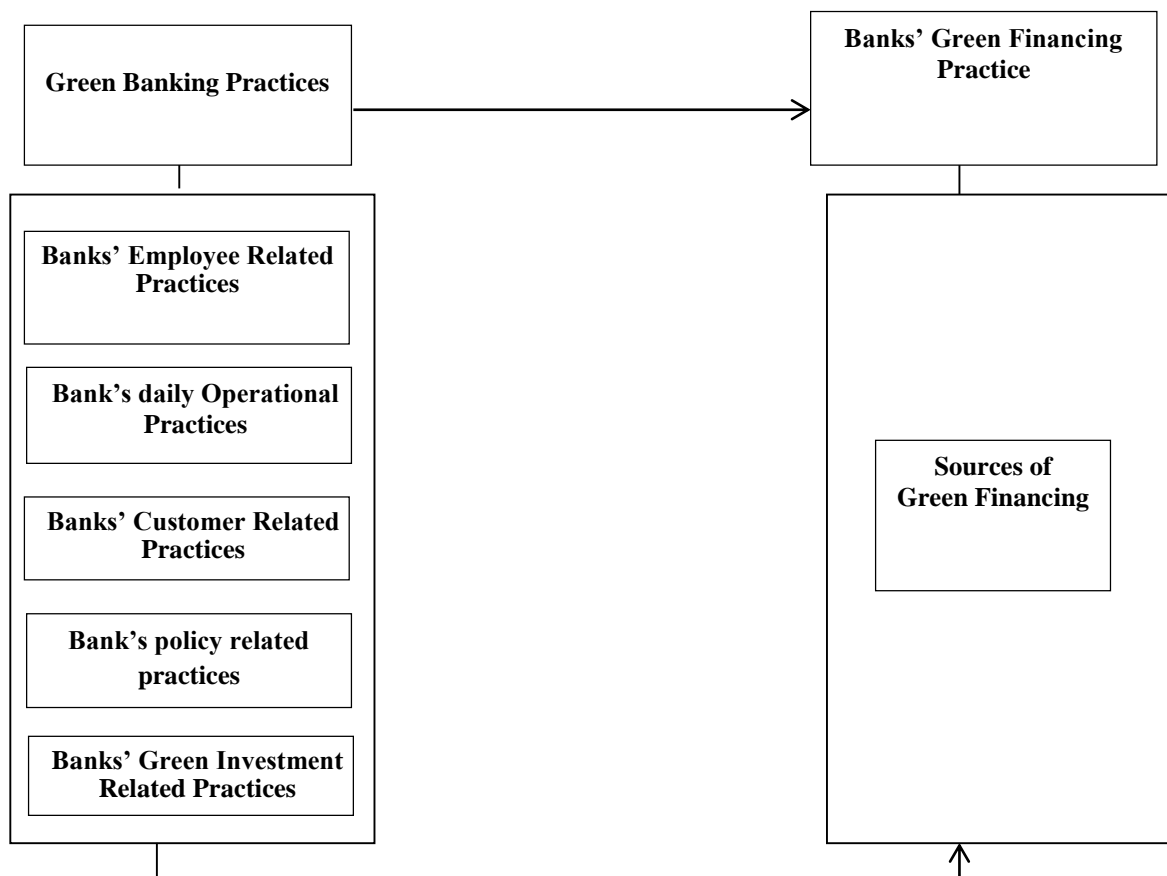
The following null hypotheses were tested in this study:

- H0<sub>1</sub>:** Banks' employee-related practices of green banking positively and significantly impact on sources green financing of deposit money banks in Nigeria;
- H0<sub>2</sub>:** Banks' daily operations-related practices of green banking positively and significantly impact on sources green financing of deposit money banks in Nigeria;

- H03:** Banks' customers-related practices of green banking positively and significantly impact on sources green financing of deposit money banks in Nigeria;
- H04:** Banks' policy-related practices of green banking positively and significantly impact on sources green financing of deposit money banks in Nigeria;
- H05:** Banks' green investment related practices of green banking positively and significantly impact on sources green financing of deposit money banks in Nigeria;

### Literature Review

This study is centered on two key variables, including green banking practices as the independent variable and green financing dependent variables.



**Fig. 1: Conceptual Framework**  
Source: Desk Research

## Conceptual Review

**Concept of Green Banking Practices:** The concept called green banking is also called ethical banking, social banking, responsible banking or sustainable banking. However, there is no universally accepted meaning of green banking. Green banking is defined as banking practices that promotes environmentally-friendly practices and decreasing the volume of carbon footprints from the activities of banks. According to Rahman and Perves (2016), green banking is the promotion of environmentally responsive exercises that support customers in decreasing their carbon footprint through their banking operations. The authors further noted that these banking practices comprise online banking, bill payments, and account opening. Guang-Wen and Siddik (2022), Ziolo et al (2019) described green banking as banking practices that protects the environment, promise collective justice, and generate economic accomplishment conveying priority in banking business to safeguard banks and society against unforeseen future economic challenges. Similarly, Hasan et al (2022) stated that green banking consists of banking practices such as accepting deposit, credit payment, financing of businesses, leasing processes, among others that concentrates on preservation of the environment. Hence, green banking consists of banking activities that considers all the social and ecological factors with the purpose to protect the environment and safeguard natural resources. Bose et al (2017) maintained that green banks encourages and employs green technology in internal and external banking activities to reduce carbon emissions and protect the ecosystem. Shaumya and Arulrajah (2017) argued that the benefits of green banking consists of the reduction of paper work and online banking, provision of awareness on environmental and social responsibility business friendly practices and the use of environmental standards for bank lending. A study conducted by Chen et al (2022) identified four key variables as measures of green banking practices in Bangladesh. These variables include banks' employee – related practices, banks' daily operation - related practices, banks' customer - related practices and banks' policy – related practices. Shaumya and Arulrajah(2017) investigation of green banking practices in Sri Lanka also employed banks' employee – related practices, banks' daily operation - related practices, banks' customer - related practices and banks' policy – related practices as dimensions to measure green banking practices. Also several other studies have utilized several dimensions such as green investment, green risk management, green human resources, green investments and green business strategy as dimensions of green banking practices.

**Green Financing:** Green finance is described as a branch of finance that explains the combinations of social and economic improvements with ecological enhancement. Reddy (2018) defined green finance as the financing of projects that protects the ecosystem and provides environmental sustainability and growth. The author further stated that green finance examines the destructive and progressive ecological impacts while funding the projects and business investment in renewable energy, energy efficiency, clean energy, control of pollution, waste management, water sanitation, mitigation and adoption strategies of climate change, bio-diversity protection and development of green products for end users among others. The G20 Green Finance Study Group defined green finance as follows:

*“financing of investments that provide environmental benefits in the broader context of environmentally sustainable development. These environmental benefits include, for example, reductions in air, water and land pollution, reductions in greenhouse gas (GHG) emissions, improved energy efficiency while utilising existing natural resources, as well as mitigation of and adaptation to climate change and their co-benefits. Green finance involves efforts to internalise environmental externalities and adjust risk perceptions to boost environmentally friendly investments and reduce environmentally harmful ones. Green finance covers a wide range of financial institutions and asset classes and includes both public and private finance. Green finance involves the effective management of environmental risks across the financial system.”*

Also, green finance characterizes a novel advancement of and mechanism for sustainable economic growth and development, with social responsibility and eco friendly protection (Liu et al, 2020). Consequently, green finance is considered at providing economic advancement, ecological stability, environmental safety and attainment of the nation’s sustainable economic development (Zhou et al, 2020). Additionally, Zhang et al. (2019) argued that green finance is considered a vital financial tool for the attainment of sustainable economic growth of any country. Hence banks and other financial institutions principally make available loans for several green financing projects, such as solid and liquid waste management, green establishment, green fire-burnt and non-fire block, industrial safety and security, clean energy, energy consumption, green tourism and alternative energy (Zheng et al, 2021b; Khairunnessa et al, 2021; Hoque et al, 2019; Akter et al, 2018). In a study of green finance development in Bangladesh, Zheng et al, (2021) acknowledged the four key sources of green financing, established on banker’s perceptions. The authors stated that the sources of green finance consists of investment in waste management, green establishment, green brick manufacturing recycling and recyclable product.

**Theoretical Review** This study is based on institutional theory. The institutional theory was proposed by DiMaggio and Powell (1983) which considers organisations as operating within a social framework of norms, values and assumptions about what constitutes appropriate or acceptable economic behaviour. This theory intends to describe the procedures and motives for administrative behaviour as well as the influence of organizational behavior arrangements within a wider, inter-organizational framework. According to Guth (2016), institutions are conventional, uniform arrangements of behaviour established within and across organizations and giving meaning to social exchange and order. The authors further noted that these patterns of behaviour include corporate and industry standards, routines, and norms. Institutional theory suggests that organizational behaviours are copied and replicated, instituting taken-for-granted norms and, ultimately, extensive standardized expectations of practice. According to DiMaggio and Powell (1983), an institution is a united and monitoring multifaceted structure comprising of administrative and public agencies that govern other firms through the implementation of the regulation, laws and standards. Bukhari et al (2019) stated that institutional theory is founded on

the external ecological forces that an institution faces, which makes an organization to modify its strategies, processes or arrangements. Bose et al, (2017) maintained that this theory changes under outside influences in order to attain definite resources or to gain pecuniary and societal legitimacy. This theory has been useful to several ecofriendly management practices in various industries. A lot of scholars' state that institutional theory is viewed to performance important function in evaluating a corporation's implementation of ecofriendly practices since the ecology is influenced by great instability and exterior pressures (Hoejmose et al., 2014; Pleasant et al., 2014). External issues could perform a significant part in impacting a company's judgments to practice green management practices (Hoejmose et al., 2014; Bukhari et al (2019). An excessive volume of isomorphism is present in the banking sector as a result of pronounced level of guidelines, rivalry and customer expectations (Idroes, 2015). Internationally, the banking sector is presently fronting an extraordinary level of stakeholder stress for embracing ecologically friendly practices (Pleasant et al., 2014). Stakeholders' influence has an effect on corporation's environmental performance (Dimaggio & Powell, 1983). Massive punishments have been carried out on banks in some nations for ignoring ecofriendly guidelines. According to Bose et al (2017), several banks have been punished by the courts for pollution of the environment by their clients, causing enormous remediation costs for banks. Hence, the present study focuses on the use institutional theory to explain green banking practices.

## Review of Empirical Studies

**Table 1: Summary of Empirical Review**

S/N	Author & Year	Study Objectives and Variable Used	Methodology	Findings
1.	Hassan et al (2020)	This study used green banking as independent variable consisting of green cost, volume of risk management committee and bank size with operating cost ratio as control variables. The dependent variables were made up of return on assets (ROA), return on equity (ROE) and market value of shares (MV).	The study used ex post facto and correlation research designs and the population consisted of 30 banks listed on the Dhaka Stock Exchange while purposive sampling technique was used to determine a sample size of 14 banks and secondary data from the financial statements of	The findings disclosed that green cost, banks size and risk management committee positively and significantly affects return on assets (ROA), return on equity (ROE) and market value of shares (MV) while operating

			sampled banks. The secondary data were analysed using descriptive statistics, correlation matrix and panel regression analysis.	cost negatively affects return on assets (ROA), return on equity (ROE) and market value of shares (MV) of listed banks in Dhaka Stock Exchange.
2.	Shaumya & Arulrajah (2017)	The study investigated green banking practices and environmental performance in Sri Lanka. The adopted employees related practice, daily operation related practice, banks policy related practice as independent variables while bank's environmental performance as dependent variable.	This study employed survey research design and a target population of employees of commercial banks in Batticaloa region of Sri Lanka and stratified sampling of 155 employees and questionnaire was used as the primary source of data collection and univariate, bivariate and multivariate analysis was adopted in data analysis.	The research results from the analysis indicated that employees related practice, daily operation related practice and banks policy related practice affects bank's environmental performance positively and significantly while customer related practice insignificantly and positively influence banks environmental performance in Sri Lanka.
3.	Risal & Joshi (2018)	The study investigated green banking practices and environmental performance in Nepal. The research used	The study used causal relationship research design and a population of of	The findings from the regression analysis



		employee related practices, daily operations practices, customer related practices and bank policy related practices as independent variable while the bank environmental performance as dependent variable.	bank employees with convenience sample of 189 commercial bank employees. The study used primary data from questionnaire and responses were analysed using correlation matrix with simple and step wise regression.	revealed that employee related practices, daily operations practices, and bank policy related practices positively and significantly influence bank environmental performance while customer related practices positively and insignificantly affects banks environmental performance in Nepal.
4.	Chen et al (2022)	The study investigated green banking practices on environmental performance and green financing in Bangladesh. The study employed practices, daily operations practices, customer related practices and bank policy related practices as independent variables while the bank environmental performance and green financing as dependent variables.	The study used cross sectional survey research designs and a target population of fifty seven (57) state owned, private and foreign owned commercial banks in Bangladesh. The study also used non-probability sampling method and primary source of data was collected from questionnaires	The findings indicated that banks 'employee related practices, banks daily operation related practices, and banks' policy related practices positively and significantly influences banks green

			administered to respondents and the responses were analysed using factor analysis and structural equation modeling.	financing while banks customer related practices positively and insignificantly affects banks green financing. Furthermore, the findings disclosed that banks' green project financing revealed a positive and significant impact on banks' environmental performance.
5.	Fang & Shao (2022)	This study examined the moderating influence of green finance on green technological innovation effects of heterogeneous environmental regulation in China. The study employed green technological innovation as dependent variable while the independent variables consisting of command and control environmental regulation, market incentive environmental regulation and green finance.	The study used cross sectional survey research design and primary data was collected from questionnaire designed using Dublin model. The study used relevant statistical models.	The results from the findings indicated that a positive and significant association between command and control environment regulation and green technology innovation; positive and significant relationship

				between market incentive environmental regulation and green technology innovation and positive and significant association between green finance and green technology innovation.
6.	Guang – Wen & Siddik (2022)	The investigation examined corporate social responsibility practices and green finance on environmental performance in Bangladesh.	The study used cross sectional survey research design and the population consisted of employees of private commercial banks while non-probability convenience sampling technique was used of 388 bankers. Questionnaire was used as the primary source of data collection and the responses used were analysed using inferential statistics.	The findings from the statistical analysis revealed that economic, social, environmental, corporate social responsibility practices positively and significantly influence environmental performance of private commercial banks in Bangladesh.
7.	Ye et al (2022)	This study investigated green finance and green	The study used cross sectional	The findings of the study

		development based on eco-efficiency in China.	survey research design and a sample of 30 provisional administrative regions. Questionnaire was used as primary source of data collection. The responses were analysed using inferential statistics.	indicated that green finance positively and significantly influences green development, green technology innovation positively and significantly affects green development and special interaction effects positively and significantly affects green development and special interaction effects positively and significantly influence green development.
8.	Zeng et al (2022)	This study analysed of green finance and urban haze pollution using technology innovation perceptive in China. The study used urban green bond as independent variable and annual average concentration of fine particles. The control variables consist of size, profitability, growth ability, proportion of independent	This study used ex post facto and correlational research designs. The study consists of all A-share listed firms on Shanghai and Shenzhen Stock Exchanges from 2016 to 2019 as the sample comprises of 639	The findings indicated a negative and significant relationship between green finance and urban haze pollution. The study further showed that the growth of one

		directors, duality and nature of property.	listed firms making a total observation of 1181. The data for haze pollution was collected from the Environmental Monitoring Station, green bond data from the Wind database, the control variables were collected from CSMAR and Wind databases. The data collected were analysed using statistical tool.	standard deviation in green finance reduces PM2.5 concentration by 8.8 ug/m3, ceteris paribus. Additionally, green finance may increase environmental quality by encouraging technological innovation.
9.	Wang et al (2021)	The research examined green finance innovation and regional green development in China.	The study used panel data of 30 regions in China from 2013 to 2017 as the sample size and secondary data was collected from China Statistical Yearbook, China Environmental Statistics Yearbook, China Science and Technology Statistical Yearbook, China Economic and Social Statistical Development Database, and China Information Bank database for	The findings from the analyses showed green finance pilot zone positively and significantly affects green development; industrial structural upgrade positively and significantly affects green development; green finance pilot zone affects industrial structural

			<p>the study period. The data collected from the secondary sources were analysed using descriptive statistics, fixed-base range entropy weight method, and difference-in-differences model was used to test the policy effect, the mechanism of the establishment of the green financial reform, and the innovation pilot zone on green development.</p>	<p>upgrade and green finance pilot zone and green development are moderated by technological innovation ability.</p>
10.	Rehman et al (2021)	<p>The study investigated green banking practices and environmental performance in Pakistan. The study used the socially responsible investment theory to explain the correlation between green banking practices and environmental performance of commercial banks. The dependent variable comprised of environmental performance while the independent variables consisted of banks green operations, banks green investment and banks' green policy.</p>	<p>The study employed cross sectional survey and correlational research designs with a target population of bank employees and a purposive sample of 200 employees of retail banks of management level. The study collected primary data from a well-structured questionnaire administered to the sampled bank employees. The responses obtained</p>	<p>The findings from the analysis revealed a positive and significant impact of green banking policy on environmental performance of retail banks in Pakistan; a positive and significant impact of green banking operations on environmental performance of</p>

			from questionnaires administered were analysed using descriptive statistics and structural equation modeling.	retail banks in Pakistan; and a positive and significant impact of green banking investments on environmental performance of retail banks in Pakistan.
11.	Zheng et al (2021a)	This study examined the mediating role of green finance on the factors influencing sustainability performance of financial institutions in Bangladesh. The study used corporate sustainability performance as the dependent variable while green financing used economic dimensions, social dimensions and environmental dimension as independent variables.	The study used cross sectional survey research design. The target population consisted of 47 private commercial banks bank employees and convenience sampling method was used to determine the sample size of 35 private commercial banks employees in which structured questionnaires were administered to 302 respondents at Dhaka and Chottogram in Bangladesh from January to March 2019. The responses collected from the questionnaire were analysed using	The results from the analysis indicated that economic dimensions positively and significantly affect sustainability performance of private commercial banks in Bangladesh; social dimensions positively and significantly affect sustainability performance of private commercial banks in Bangladesh; environmental dimensions positively and

			descriptive statistics and multivariate analysis using structural equation modeling.	significantly affect sustainability performance of private commercial banks in Bangladesh.
12.	Zheng et al (2021b)	This investigated examined bankers' perception of green financing development of private commercial banks in Bangladesh. The study used economic dimensions, environmental dimensions, social dimensions and sources of green financing.	The study employed cross sectional survey research design and a target population of private commercial banks and a sample of 302 bankers, while convenience sampling (non-probabilistic) method was used for the determination of the sample size. The investigation used primary and secondary sources of data collection. The secondary data was collected from the financial statements of Bangladesh Bank from 2014–2019 whereas the primary data were obtained directly from a well-designed questionnaires	The results from the inferential statistics revealed that economic dimension positively and significantly affects the level of bankers' perceptions of green finance. Furthermore, the bankers perceived that social and environmental dimensions positively and significantly affect the level of bankers' perceptions of green finance. The study further indicates that sources of green financing positively and significantly



			<p>from bankers of the selected private commercial banks (PCBs) in Bangladesh. The respondents were selected using a non-probability sampling method and a total of 337 questionnaires were administered out of which 296 were collected from the respondents and used for analysis. The responses were analysed using descriptive statistics, structural equation modeling, exploratory factor analysis and confirmatory factor analysis.</p>	<p>affects the level of bankers' perceptions of green finance in Bangladesh.</p>
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Source: Desk Research, (2023)

## METHODOLOGY

This research investigated green banking practices on banks' and green financing of deposit money banks in Nigeria. The study adopted cross sectional survey research design. This method of research design was adopted because it systematically collects, analyse and synthesize quantitative data on a large representative sample of a given population to describe and explain the relative incidence, distribution and interrelations of variables (Appah, 2020). The target population consisted of all listed deposit money banks branches in Nigeria while the accessible population consisted of the following banks branches (First Bank, Union Bank, Access Bank, Fidelity Bank, United Bank for Africa, Guaranty Trust Bank, Zenith Bank, Wema Bank, Ecobank, First City Monument Bank) in Port Harcourt, Yenagoa, Warri, Uyo, Calabar and Benin City of Nigeria. The study adopted stratified random sampling technique and a sample size of seventy hundred and fifty

(750) while five hundred and twenty (520) questionnaires were used for the study. The data for this study were collected from well structured questionnaire titled “Green Banking Practices on Banks’ Environmental Performance and Green Financing Questionnaire, (GBPEPGFQ). The independent variable of green banking practices was measured using banks’ employee related practices, banks’ daily related practices, banks’ customer related practices, banks’ policy related practices and banks’ green investment related practices while the dependent variable of measured using banks’ environmental performance and banks’ green financing (Chen et al, 2022; Desalegn et al, 2022; Ding et al, 2022; Fang et al, 2022; Rehman et al, 2021; Hossain et al, 2020; Hoque et al, 2019) The questionnaire was validated using content validity and Cronbach Alpha ( $\alpha$ ) was used to ascertain the statistical reliability of the research instrument with a good degree of reliability at 0.92. The questionnaire administered to the respective respondents were analysed with a three (3) distinct stages of data analysis using univariate analysis (descriptive statistics), bivariate analysis (correlation matrix) and multivariate analysis (multiple regression). The study was guided by the models below:

$$\text{BGF} = \beta_0 + \beta_1\text{BEP} + \beta_2\text{BAP} + \beta_3\text{BCP} + \beta_4\text{BPP} + \beta_5\text{BGP} + e \text{ ----- (1)}$$

Where:

BEP = Banks’ Employee-Related Practices

BAP = Banks’ Daily-Related Practices

BCP = Banks’ Customer-Related Practices

BPP = Banks’ Policy-Related Practices

BGP = Banks’ Green Investment-Related Practices

BGF = Banks’ Green Financing

$\beta_0 - \beta_5$  = Coefficients

e = Standard error

## RESULTS AND DISCUSSIONS

This section was designed to enable the researcher to present the primary data collected from the survey research work and the results obtained are analysed with the help of statistical package for social sciences (SPSS). In addition, the researcher also provided a conclusive discussion of the results and establishing necessary inferences and implications based on the relationship between green banking practices and the sources of green financing on deposit money banks in Nigeria.

**Table 2: Questionnaire Distribution Rate**

	Frequency	Percent	Valid Percent	Cumulative Percent
Questionnaire Retrieved	500	96.2	96.2	96.2
Questionnaire Not Retrieved	12	2.3	2.3	98.5
Valid Questionnaire Not Properly Fill	8	1.5	1.5	100.0
Total	520	100.0	100.0	

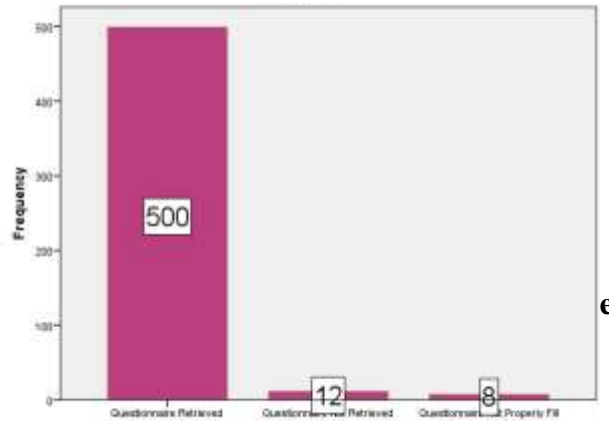
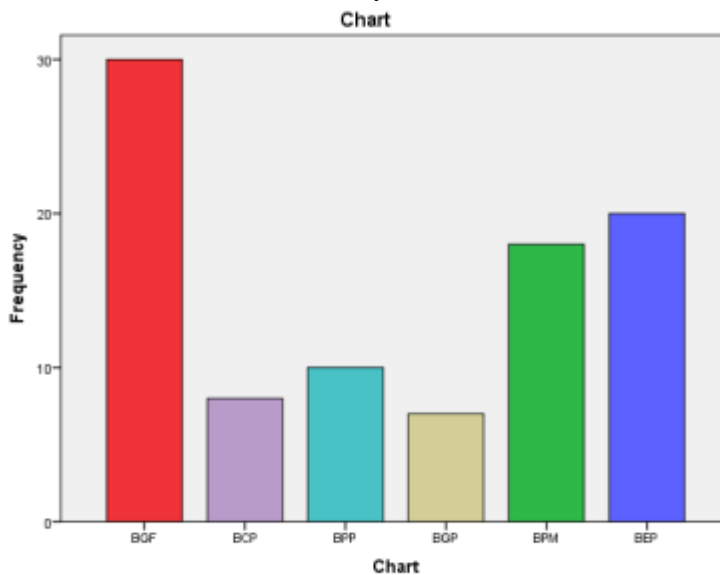


Table 2 and Figure 1 presented a total of five hundred and twenty (520) copies of the questionnaire distributed to some selected staff of deposit money banks in Nigeria. The researcher was able to retrieved five hundred (500) copies, representing 96.2% of the total number of questionnaire distributed. Thus, twelve (12) copies representing, 2.3% were not retrieved due to time constraints the researcher could not continue waiting for the respondents who were not available to return their questionnaire at the appointed date while eight (8) copies representing 1.5% were not properly fill hence the researchers rejected those questionnaires. Therefore, five hundred (500) was used as new respondents sample size for the study.

**Table 3 Univariate Analysis of the Variables**

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
BGF	500	1.00	5.00	3.1006	1.43653	-.249	.107	-1.547	.214
BEP	500	1.00	5.00	3.2453	.91032	-.615	.107	-.843	.214
BAP	500	1.00	5.00	3.3103	.65721	-.943	.107	1.559	.214
BCP	500	1.67	5.00	3.2151	.87940	-.459	.107	-.868	.214
BPP	500	2.00	5.00	3.2189	.59199	-.553	.107	-.648	.214
BGP	500	1.00	5.00	3.3904	.77066	-.322	.107	2.739	.214
Valid N (listwise)	500								

Source: SPSS Printout of Field survey (2023)



**Note:** BEP = Banks’ Employee-Related Practices, BAP = Banks’ Daily-Related Practices, BCP = Banks’ Customer-Related Practices, BPP = Banks’ Policy-Related Practices, BGI = Banks’ Green Investment-Related Practices, BGF = Banks’ Green Financing

In table 3, the descriptive statistics of the data are presented with the variables of banks’ green investment-related practices (BGI), banks’ employee-related practices (BEP), banks’ daily-related practices (BAP), banks’ customer-related practices (BCP), banks’ policy-related practices (BPP) and banks’ green financing (BGF). The results showed that all the independent variables have a positive growth rate as indicated between the minimum, maximum mean and standard derivation statistical values. BGI, BEP, BAP, BCP, BPP and BGF grows from 1.00 to 5.00 with a Mean values of 3.1006, 3.3904, 3.3103, 3.2151, 3.2189 and 3.2453. However, the bar chart presented

that BGF has the highest Mean value fellow by BEP, BPP and BCP. The result also indicated the skewness and kurtosis show a high level of consistency. The various statistics indicate that the variables have different distribution. The skewness and kurtosis statistics provide useful information about the symmetry of the probability distribution of various data series as well as the thickness of the tails of these distributions respectively. All the variables had negative skewed means that, BGI, BEP, BAP, BCP, BPP and BGF had a short right tail. Results also indicate that, all the variables had positive kurtosis implying that, the extent of flatness of the distribution is not normally among these variables.

**Table 4 Correlations coefficient of the variables**

		BPM	BGF	BEP	BAP	BCP	BPP	BGP
BGF	Pearson Correlation	-.523**	1	-.732**	-.684**	.839**	-.097*	.489**
	Sig. (2-tailed)	.000		.000	.000	.000	.026	.000
	N	500	500	500	500	500	500	500
BEP	Pearson Correlation	.510**	-.732**	1	.662**	-.684**	.391**	-.378**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	500	500	500	500	500	500	500
BAP	Pearson Correlation	.550**	-.684**	.662**	1	-.599**	.332**	-.392**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	500	500	500	500	500	500	500
BCP	Pearson Correlation	-.513**	.839**	-.684**	-.599**	1	-.255**	.478**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	500	500	500	500	500	500	500
BPP	Pearson Correlation	.294**	-.097*	.391**	.332**	-.255**	1	-.010
	Sig. (2-tailed)	.000	.026	.000	.000	.000		.817
	N	500	500	500	500	500	500	500
BGP	Pearson Correlation	-.246**	.489**	-.378**	-.392**	.478**	-.010	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.817	
	N	500	500	500	500	500	500	500

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

\* . Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Printout of Field survey (2023)

Pearson correlation coefficient was used to compute the correlational relationship between the independent variables banks' employee-related practices (BEP), banks' daily operations-related practices (BAP), banks' customer-related practices (BCP), banks' policy-related practices (BPP), banks' green investment-related practices (BGI) and the independent variable banks' green financing (BGF). According to Appah (2020), this relationship is assumed to be linear and the correlation coefficient ranges from -1.0 (perfect negative correlation) to +1.0 (perfect positive

relationship). The correlation coefficient was calculated to determine the strength of the relationship between independent and dependent variables (Kothari, 2013).

**Decision:** The results in table 4 revealed a Pearson Correlation Coefficient (rho) of R-value (-0.732\*\*) which illustrated a strong negative relationship between banks' employee-related practices of green banking and sources green financing of deposit money banks in Nigeria. R-value (-0.684\*\*) illustrated a strong negative relationship between banks' daily operations-related practices of green banking and sources green financing of deposit money banks in Nigeria. R-value (0.839\*\*) illustrated a strong positive relationship between banks' customers-related practices of green banking and sources green financing of deposit money banks in Nigeria. R-value (-0.07\*\*) illustrated a very weak negative relationship between banks' policy-related practices of green banking and sources green financing of deposit money banks in Nigeria. R-value (0.489\*\*) illustrated a moderate positive relationship between banks' green investments related practices of green banking and sources green financing of deposit money banks in Nigeria.

### Regression Analysis

**Table 5 Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.905 <sup>a</sup>	.819	.817	.61475	.405

a. Predictors: (Constant), BGP, BPP, BAP, BCP, BEP

b. Dependent Variable: BGF

Regression coefficient of R = 0.905 or 90.5% indicated that relationship exist between independent variables and dependent variable. The coefficient of determination  $R^2 = 0.819$  which showed that 81.9% of variation in green banking and sources green financing (BGF) is explained by banks' employee-related practices (BEP), banks' daily operations-related practices (BAP), banks' customer-related practices (BCP), banks' policy-related practices (BPP), banks' green investment-related practices (BGI). This implying that there is a positive relationship between banks' employee-related practices (BEP), banks' daily operations-related practices (BAP), banks' customer-related practices (BCP), banks' policy-related practices (BPP), banks' green investment-related practices (BGI) and green banking and sources green financing (BGF). The Durbin-Watson  $d = 0.405$  indicate that there is no first order linear auto-correlation in the data and it shows that the model has goodness of fitness.

**Table 6 Model Two ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	875.175	5	175.035	463.152	.000 <sup>b</sup>
	Residual	193.874	513	.378		
	Total	1069.049	518			

a. Dependent Variable: BGF

b. Predictors: (Constant), BGP, BPP, BAP, BCP, BEP

**Source: SPSS Output**

Table 6 had shown a regression significant P-value of  $0.000 < 0.05$  alpha level, F-value 60.593 which illustrated that the overall model is statistically significant at 0.05 alpha level between banks' employee-related practices (BEP), banks' daily operations-related practices (BAP), banks' customer-related practices (BCP), banks' policy-related practices (BPP), banks' green investment-related practices (BGI) and green banking and sources green financing (BGF). of deposit money banks in Nigeria.

**Table 7 Model Two Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.388	.329		4.221	.000
	BEP	.437	.046	.277	9.406	.000
	BAP	.510	.058	.234	8.803	.000
	BCP	.903	.046	.553	19.791	.000
	BPP	.557	.051	.230	10.987	.000
	BGGP	.057	.041	.031	1.399	.162

a. Dependent Variable: BGF

**Source: SPSS Output**

**Decision Rule:** Reject  $H_0$  if Sig (P-value) is less than 0.05 significant level otherwise Accept.

**Decision 1:** Table 7 indicated that, the beta value of 0.277 ad P value of 0.000 is < less than 0.05 significant level between banks' employee-related practices of green banking and sources green financing of deposit money banks in Nigeria. Therefore, we rejected the null hypothesis and accepted the alternative which stated that, banks' employee-related practices of green banking positively and significantly impact on sources green financing of deposit money banks in Nigeria.

**Decision 2:** Table 7 disclosed that, the beta value of 0.234 and P value of 0.000 is < less than 0.05 significant level between banks' daily operations-related practices of green banking and sources green financing of deposit money banks in Nigeria. Therefore, we rejected the null hypothesis and accepted the alternative which stated that, banks' daily operations-related practices of green banking positively and significantly impact sources green financing of deposit money banks in Nigeria.

**Decision 3:** Table 7 revealed that, the beta value of 0.553 and P value of 0.000 is < less than 0.05 significant level between banks' customers-related practices of green banking and sources green financing of deposit money banks in Nigeria. Therefore, we rejected the null hypothesis and accepted the alternative which stated that, banks' customers-related practices of green banking positively and significantly impact on environmental performance of deposit money banks in Nigeria.

**Decision 4:** The above table indicated that, the P value of 0.000 is < less than 0.05 significant level between banks' policy-related practices of green banking and sources green financing of deposit money banks in Nigeria. Therefore, we rejected the null hypothesis and accepted the alternative which stated that, banks' policy-related practices of green banking positively and significantly impact on sources green financing of deposit money banks in Nigeria.

**Decision 5:** The above table indicated that, the beta value of 0.031 and P value of 0.000 < less than 0.05 significant level between banks' green investment related practices of green banking and sources green financing of deposit money banks in Nigeria. Therefore, we rejected the null hypothesis and accepted the alternative which stated that, banks' green investment related practices of green banking positively and insignificantly impact on sources green financing of deposit money banks in Nigeria.

## **DISCUSSION OF FINDINGS**

**Banks' Employee-related Practices and Sources of Green Financing:** The findings of the regression analysis revealed that banks' employee-related practices of green banking positively and significantly affect sources of green financing of deposit money banks in Nigeria. The result from this study is in agreement with the findings of Chen et al (2022) that banks' employee related practices influences the green financing of deposit money banks.

**Banks' Daily Operations-related Practices and Sources of Green Financing:** The result from the regression analysis disclosed a positive and significant association between banks' daily operations-related practices and sources of green financing of deposit money banks in Nigeria. The findings of this study is consistent with the research conducted of Chen et al (2022) that banks' daily related practices influences the green financing of deposit money banks.



**Banks' Customers-related Practices and Sources of Green Financing:** The regression analysis results disclosed a positive and significant association between banks' customers-related practices and sources of green financing of deposit money banks in Nigeria. The result from the study disagree with the findings of Chen et al (2022) that banks' customers related practices influences the sources of green financing of deposit money banks.

**Banks' Policy-related Practices and Sources of Green Financing:** The findings from the regression analysis indicated a positive and significant association between banks' policy-related practices and sources of green financing of deposit money banks in Nigeria. The outcome of this study concur with the studies of Chen et al (2022) that banks' policy related practices influences the sources of green financing of deposit money banks.

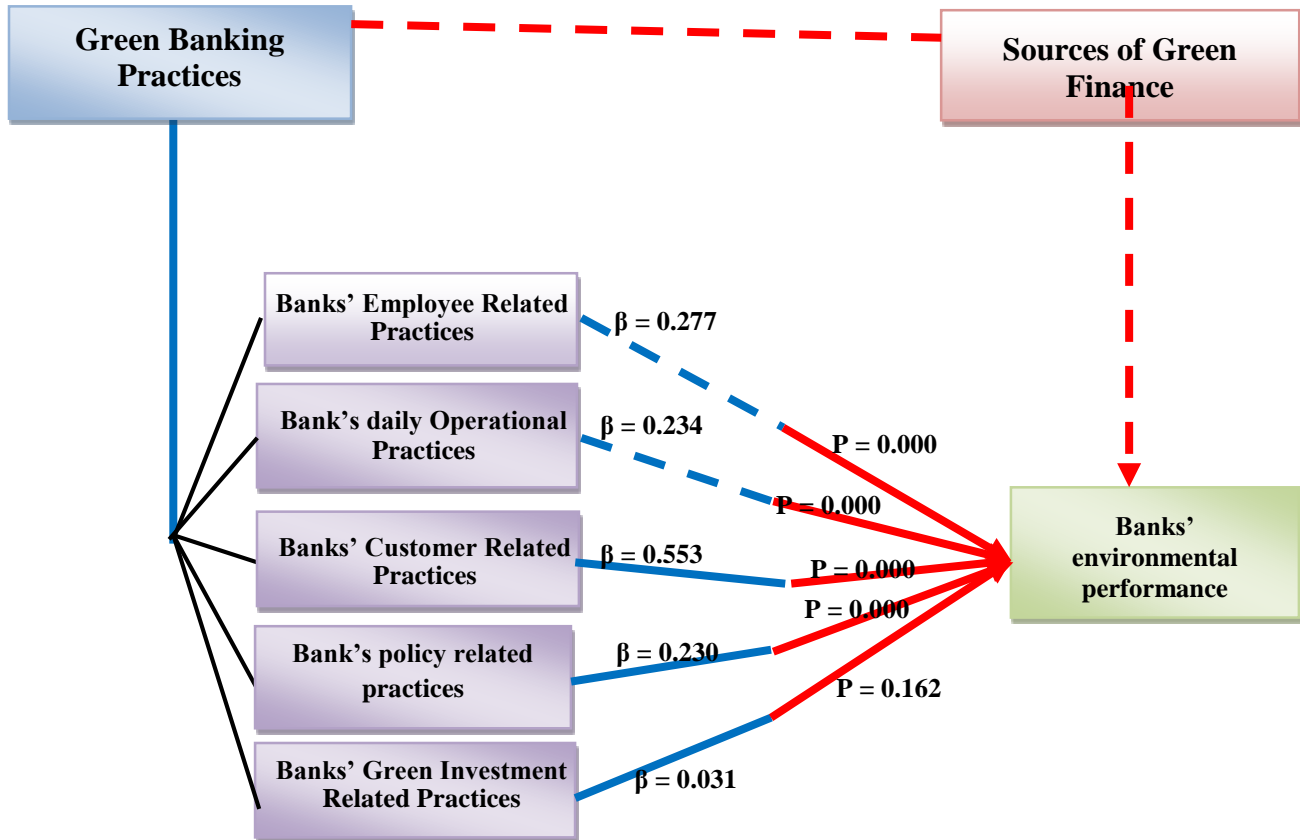
**Banks' Green Investment related Practices and Sources of Green Financing:** The results from the regression analysis showed a positive and significant association between banks' green investment related practices and sources of green financing of deposit money banks in Nigeria. The outcome of this study concur with Chen et al (2022) that banks' green investment related practices influences the sources of green financing of deposit money banks.

**Summary, Conclusion, Implications, Recommendations and Contribution to Knowledge**

This study investigated green banking practices and sources of green financing of deposit money banks in Nigeria. The study examined employee related practices, daily related practices, customer related practices, banks' policy related practices and green investment on sources of green financing of deposit money banks in Nigeria. The study anchored on institutional theory and several empirical studies were examined to identify the gaps in literature. The study used questionnaire as the primary source of data collection and responses obtained from the administered questionnaires were analysed using descriptive statistics, correlation matrix and regression analysis. The results from the regression analysis revealed that banks' employee-related practices of green banking positively and significantly influence sources of green financing of deposit money banks in Nigeria; banks' daily operations-related practices of green banking positively and significantly affect sources of green financing of deposit money banks in Nigeria; banks' customers-related practices of green banking positively but significantly influence sources of green financing of deposit money banks in Nigeria; banks' policy-related practices of green banking positively and significantly influence sources of green financing of deposit money banks in Nigeria and banks' green investment related practices of green banking positively and significantly impact on sources of green financing of deposit money banks in Nigeria.

Consequently, on the basis of the findings the study concluded that green banking practices positively influences the sources of green financing of deposit money banks in Nigeria. The results from this empirical study provide helpful implications for bankers, managers, banking institutions, academics and government administrators in Nigeria through the sponsorship and promotion of green banking practices and the provision of green finance to boost banks' environmental performance, and consequently, Nigeria's sustainable economic growth and development. Therefore, the study recommended that banks in Nigeria should incorporate green banking practices such as banks' employee-related practices, banks' daily operations-related practices, banks' customers-related practices, banks' policy-related practices and banks' green investment related practices in the banking system through the reduction of paper usage, provision of ecofriendly banking practices such as ATMs and online banking, establishment of green branches and implementation of green banking policies to improve banks' environmental performance in Nigeria; banks in Nigeria should ensure that green banking practices and environmental risk management guidelines are applied effectively and efficiently; The government and banks in Nigeria should apply necessary steps to access the international green financing funds, improve the quality of green credit and equity finance; banks in Nigeria should diversify the diverse green banking products in different environmentally friendly projects for sustainable projects for environmental performance and sustainable development; and government should provide incentives and encourage environmentally sustainable technologies that would enhance banks environmental performance and sources of green financing in Nigeria.

**Heuristic Model**



**KEY:** t= Relationship Strength, P= Significant

**Figure 2:**

Blue Line = Positive relationship

Break Blue Line = Negative

Red Line = Significant

Break Red Line = Insignificant

**Source:** Const

es on corporate banks in Nigeria

Figure 2 depicts the results of the test of hypotheses. Generally, the arrows represented where there is a positive, negative, significant and insignificant relationship of the predictor/independent variable and the criterion/dependent variables. From fig 2 the P represents significant relationship which was indicated with red line. The break red line represents results findings that had insignificant relationship, the blue line represent results findings that had positive relationship while the break blue line represents results findings that had negative relationships.

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